



AMERICAN PSYCHOLOGICAL ASSOCIATION

APA  
Dictionary  
*of* Psychology

SECOND EDITION

*Significantly expanded, updated, and revised*

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*of* Psychology

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AMERICAN PSYCHOLOGICAL ASSOCIATION

# APA Dictionary *of* Psychology

SECOND EDITION

Gary R. VandenBos, PhD

*Editor in Chief*

AMERICAN PSYCHOLOGICAL ASSOCIATION • Washington, DC



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# Preface

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The American Psychological Association (APA) is proud to offer the second edition of its critically acclaimed and best-selling *APA Dictionary of Psychology*. The first edition, copyright 2007, included some 25,000 entries. That corpus was vetted by nearly 100 experts in the field of psychology and labored over for almost a decade by APA Reference staff and associated lexicographers. The first edition reflected current dimensions of the field as a whole, with entries ranging from the fundamental mainstays to those representative of the evolving language of a diversely oriented and porous field, including numerous topical overlaps in the other social, behavioral, and health sciences. This characterization of coverage remains true in the second edition.

APA collaborated intensively on the first edition with Market House Books Ltd (MHB), a British firm with, to date, 45 years' experience in creating reference books for both British and American markets. Broadly, APA Reference staff managed the dictionary's conceptual and editorial development, and MHB staff handled its administration, copyediting, and composition. (For an extensive history of the first edition process, the interested reader may consult its preface.) This professionally and personally rewarding collaboration continued with the preparation of the second edition.

As with the parent edition, the second edition is intended for psychologists, graduate and undergraduate psychology students, practitioners and researchers in allied mental health professions (e.g., psychiatrists, nurses, and social workers), and all thoughtful readers who are curious about mental health issues; psychological history and theories; and, perhaps most important, psychological assessment, diagnosis, and therapy. In order to engage such a broad audience and fulfill its varied expectations, every effort has been made to present the dictionary's entries in a clear, jargon-free style that should enable them to be understood not only by experts but also by readers who lack specialized knowledge.

## Evolution of the Second Edition

If the process of vetting, compiling, reviewing, editing, and composing the parent edition seemed an almost Herculean task, some eight years later, the process of preparing the second edition was nearly as complex, although now, naturally, a large, established corpus of entries already existed as a solid basis from which to work. It is not an exaggeration to say that the second edition of the *APA Dictionary of Psychology* began prior to the release date of the first edition and initially evolved through work on several smaller, interim dictionaries for specific users.

For instance, an abridgment for general readers and a lightweight, portable collegiate version had been planned even before the first edition went to the printer. The results of those first efforts were, respectively, the *APA Concise Dictionary of Psychology* (2009; 10,000 entries) and the *APA College Dictionary of Psychology* (2009; 5,000 entries). Two subfield-focused collections followed: the *APA Dictionary of Clinical Psychology* (2013; 11,000 entries) and the *APA Dictionary of Lifespan Developmental Psychology* (2013; 8,000 entries). Staff's ongoing encounters with the material of the first edition in fashioning these derivatives re-

sulted in many textual refinements, in many structural alterations (e.g., dropping entries, collapsing them, etc.), and, indeed, in the collection of both missing and entirely new vocabulary, all of which are now included in the second edition.

APA recently released one other specialty reference, the *APA Dictionary of Statistics and Research Methods* (2014, 4,100 entries). By some reckonings, this may have been the most important release between the two editions of the full dictionary: The statistics and methods dictionary did not simply derive from the first edition; under the editorship of Sheldon Zedeck and his editorial board, it more than doubled the number of entries of the original coverage of these two highly interrelated fields. A substantial number of these entries has been selected and adapted for the second edition as well.

Even while staff was busy with the preparation and release of these resources, APA Reference was engaged in organizing a series of editorial "rounds" to prepare for the release of this second edition of the full *APA Dictionary of Psychology*, of which there would be broadly three prior to the final production stages.

**Round 1.** Over 70 psychologists and allied health professionals were commissioned to review substantively about 18,000 (of the original 25,000) first-edition entries, organized into 45 core content areas. The superordinate areas of focus were, among others, clinical psychology, neuroscience and cognitive neuroscience, lifespan developmental psychology, and personality and social psychology. On the basis of these peer reviews, numerous entries were revised and updated, others now considered obsolete were removed, and roughly 2,000 altogether new entries were drafted. Two somewhat anomalous entry categories—biographical and institutional—were also reviewed in order to expand coverage and to update existing material. Indeed, the editorial staff undertook a significant expansion and novel treatment of biographies for the second edition: Now the entries on important figures in the history of psychology—and from areas with significant impact on the field—are much briefer and have been collected into a separate section following the lexical entries, a change of procedure and scope that allowed for a quadrupling of biographical coverage. In addition most of the biographical entries now carry cross-references to lexical entries in the preceding section.

**Round 2.** The 45 core entry subsets next passed through a second round of development, in which APA Reference staff and its consultant lexicographers refined the peer-reviewed existing and newly composed entries, with occasional further assistance from the original reviewers. Reference staff additionally incorporated many minor corrections and substantive revisions collected by APA in the years since the release of the first edition.

During this round, staff also reviewed the remainder of the dictionary's original corpus of entries, about 7,000 in roughly 46 content areas, for (a) possible datedness; (b) typographical or grammatical errors; and (c) other concerns, such as lack of clarity or inconsistencies with related entries. Staff further decided that coverage in several areas would be cut back significantly. For instance, staff judi-

ciously pruned the first edition's inclusion of the historical lexicon (e.g., that related to the field's roots in philosophy and the discourse of logic). Not the least of our concerns was a desire to make space for new entries that had accumulated in the intervening years since the first edition.

**Round 3.** The interconnectedness and, indeed, interdependency of the entries in a specialty dictionary is something that is not typically visible to most users where an A-to-Z format is involved—nor does it need to be. Regular users perhaps only begin to perceive these ligaments when they take into account the extensive cross-referencing that underlies the dictionary and gives it its depth and broader utility. Thus, Round 3 centered on the effort to make sure that all the entries work together smoothly, a task that is more daunting than it may sound, especially when the clock is ticking down toward the production phase. An additional challenge was to reconcile the entries with those incorporated (about 2,000) from the more than doubled corpus in the new *APA Dictionary of Statistics and Research Methods*. In brief, it was essential not only to incorporate as much of the revised and added material as possible from this dictionary to the second edition, but also to adapt that material, as necessary, in the context of the greater number and diversity of entries in the full dictionary.

At the conclusion of this round, the content was returned to Market House Books for final editorial and lexicographical polishing and for the production phase.

### **A Note Regarding Diagnostic Classification of Mental and Behavioral Disorders**

During the editorial review and production of the *APA Dictionary of Psychology, Second Edition*, a significant and long-developing shift occurred for U.S. psychology, with the move away from the use of the *Diagnostic and Statistical Manual of Mental Disorders (DSM)* to the mandated use of a diagnostic system based on the *International Statistical Classification of Diseases and Related Health Problems (ICD)* as the official diagnostic system in the United States. The *ICD* is the global standard in diagnostic classification for health reporting and clinical applications for mental disorders as well as for all other medical diagnoses. Many countries have used the *ICD-10* (the edition released in 1992) since about 1995, but it was only adopted in the United States in 2012. The clinical modification of the *ICD-10* is now available and is scheduled for implementation in the United

States in 2015, the year of release for the *APA Dictionary of Psychology, Second Edition*. Preparation of the *ICD-11*, currently scheduled for release in 2017, is underway.

It may be seen, thus, that the timing for the release of the second edition of the dictionary proved to be problematic in relation to its editorial development. As a consequence, pertinent entries in this edition continue to refer to the two most recent editions of the *Diagnostic and Statistical Manual of Mental Disorders*, the *DSM-IV-TR* and the *DSM-5*. This is not entirely inappropriate or illogical, given the transitional stage in which most of American psychology finds itself, as clinicians and therapists gradually make the move to the use of the *ICD*. In the meantime, the American Psychological Association is publishing a number of books in both print and electronic form, training manuals, application software, and the like to educate its members about this significant transition, and, in years ahead, the *APA Dictionary of Psychology* will undoubtedly reflect this shift in clinical diagnosis in a revised edition.

### **Acknowledgments**

First and foremost, I wish to thank the APA Reference staff, under the indefatigable and expert project direction of Marion Osmun, and the staff of Market House Books. From the latter, we sadly lost an important content editor with the passing of John Daintith, but we continued to benefit from the expertise of Jonathan Law and Elizabeth Martin in editorial and Amanda Garner-Hay and Anne Kerr in production. I would also like to single out APA Reference Manager Patricia Mathis, not only for her work in this edition but also for her editorial supervision of the statistics and research methods dictionary, which is so tidily reflected here. A complete list of all editorial participants can be found immediately hereafter. My sincere thanks go out to all of them.

It is challenging to get *any* edition of a dictionary to press. This is partly due to the challenge of loosening one's grip of the editorial process to say: Now is the time to send this edition out into the world. That time has come, however, and the consolation rests in the hope that APA will continue to devote time and resources to keeping alive this attempt to capture the lexicon of psychology and make it accessible to professional and layperson alike in the form of new derivatives and, indeed, new editions.

Gary R. VandenBos, PhD  
Editor-in-Chief

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# Guide to the Dictionary

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## Headwords

All terms defined in the dictionary are described as headwords and are indicated in large boldface type:

**aberrant response** an abnormal or atypical behavior, commonly targeted during a behavioral intervention.

In this case, the headword is **aberrant response**.

## Alphabetical Order

The arrangement of headwords is on a strict letter-by-letter basis rather than by word. For example, the following sequence of headwords is used:

**game**  
**game reasoning**  
**gamete**  
**gamete intrafallopian transfer**  
**game theory**

Note that the headword **game theory** does not directly follow **game reasoning**. In dictionaries, spaces, hyphens, or dashes between words are ignored in determining alphabetical order.

If two headwords differ only in whether the letters are upper- or lowercase, then the lowercase version comes first. For example, **ecstasy** (the emotional state) precedes **Ecstasy** (the drug).

In the majority of cases, numbers in headwords are ignored for the purposes of alphabetization. For example, **6-hydroxydopamine** is alphabetized as if it were simply **hydroxydopamine**. The rare exceptions to this rule are terms in which the number is an essential element of the headword. For example, **80:20 rule** follows **eighth cranial nerve** and **22q11.2 deletion syndrome** follows **twelve-step program**.

In addition, in clusters of two or more headwords differing only by Arabic or Roman number, headword positioning necessarily follows numerical order within that cluster. Thus, **Type 1 cell** precedes **Type II cell**, **Type III cell**, and **Type IV cell**, but these numbers are otherwise ignored in the overall alphabetization of this cluster against adjacent terms: That is, the operative term **cell** means that this cluster alphabetically follows **Type A personality** and **Type B personality**.

Superscript and subscript numbers in headwords are also ignored for alphabetization purposes. Thus, for example, **H<sub>1</sub>** and **r<sup>2</sup>** are positioned at the beginning of H and R, respectively. However, headwords with super- or subscripted letters and words are positioned according to the usual letter-by-letter approach to alphabetization. Thus, for example, **SP** is positioned between **sculpting** and **SD**, and **r<sup>effect size</sup>** is positioned between **referred sensation** and **reflectance**.

## Abbreviations and Variants

Common abbreviations of headwords, as well as alternative spellings and other variant forms, are given in parentheses immediately after the headword:

**American Association of Clinical Psychologists (AACP)** a professional organization founded in 1917 . . .

**cheilophagia (chilophagia)** *n.* the repeated biting of one's own lips.

However, when a term is more commonly known in the abbreviated form than in the full form, the entry is given at the abbreviation. A typical example is

**DNA** *deoxyribonucleic acid*: one of the two types of NUCLEIC ACID found in living organisms . . .

## Parts of Speech

Part-of-speech labels are given for single words (but not for multiple-word headwords). The labels immediately follow the headword (and any variant) and are in italic type:

**hue** *n.* the subjective quality of color, which is determined primarily by wavelength and secondarily by amplitude.

In this example, the headword is a noun. The labels used in this dictionary are

<i>adj.</i>	adjective
<i>adv.</i>	adverb
<i>n.</i>	noun
<i>pl. n.</i>	plural noun
<i>pron.</i>	pronoun
<i>vb.</i>	verb

In addition, labels are used for

*combining form*  
*prefix*  
*suffix*

## Irregular Forms

Irregular plurals of words are placed after the part-of-speech label in parentheses:

**ampulla** *n.* (*pl. ampullae*) any saclike enlargement of a duct or passageway. . .

**cerebellum** *n.* (*pl. cerebella*) a portion of the HIND-BRAIN dorsal to the rest of the BRAINSTEM, to which it is connected by the CEREBELLAR PEDUNCLES . . .

A small number of noun headwords are most commonly



used in their plural form, in which case the singular inflection is given:

**data** *pl. n. (sing. datum)* observations or measurements, usually quantified and obtained in the course of research.

**labia** *pl. n. (sing. labium)* four lip-shaped folds of tissue forming part of the female external genitalia (see **VULVA**).

## Sense Numbers

Many entries have two or more distinct meanings (senses). These are indicated by boldface numbers. For example, the headword **reason** has five distinct senses:

**reason** **1.** *n.* consecutive thought, as in deduction or induction. Although at one time reason was considered a mental faculty, this meaning is typically not intended in current usage. See **DEDUCTIVE REASONING**; **INDUCTIVE REASONING**. **2.** *n.* in philosophy, the intellect (or **NOUS**) regarded as the source of true knowledge. See **RATIONALISM**. **3.** *n.* soundness of mind. **4.** *n.* a statement offered to justify an action or decision or to explain the occurrence of an event. **5.** *vb.* see **REASONING**.

## Cross-references

The dictionary contains a large number of cross-references, which are indicated in small capitals typeface. Cross-references can occur in normal running text:

**absent state** a vacant, dreamlike state of detachment that may occur in **COMPLEX PARTIAL SEIZURES**.

In this example, the cross-reference is to the entry on **complex partial seizures**.

Cross-references may also be introduced by “See,” “See also,” or “Compare”:

**saccade** *n.* a rapid eye movement that allows visual fixation to jump from one location to another in the visual field. Once initiated, a saccade cannot change course. See also **MICROSACCADES**. Compare **SMOOTH-PURSUIT EYE MOVEMENT**.

In this example, the cross-references are to the entries on **microsaccades** and **smooth-pursuit eye movement**.

Note that not all headwords in the book are cross-referenced when they are used in definitions. The intention is to direct the user of the dictionary to entries that will give additional information connected with the term of interest.

Some entries consist simply of a cross-reference. Entries for most abbreviations and for variants are treated in this way:

**AACP** abbreviation for **AMERICAN ASSOCIATION OF CLINICAL PSYCHOLOGISTS**.

**chilophagia** *n.* see **CHEILOPHAGIA**.

Such cross-reference entries are also provided for terms treated as hidden entries or synonyms (see below).

## Hidden Entries

Sometimes it is helpful to the user to define a term under the entry for a more general or a related term, rather than under its own headword. For example, the term **abductor** is treated as a hidden entry under the headword **abduction**:

**abduction** **n. 1.** movement of a limb away from the midline of the body. Any muscle that produces such movement is called an **abductor**. Compare **ADDITION**.

Note that the hidden entry is indicated in a sans serif semi-bold typeface.

Another example is the hidden entry for **extirpation** at the headword **ablation**:

**ablation** *n.* the removal or destruction of part of a biological tissue or structure by a surgical procedure (e.g., mechanical or laser excision) or a toxic substance (e.g., chondroitinase), usually for treatment or to study its function. When the entire tissue or structure is excised, the process is called **extirpation**. See also **BIOPSY**.

In such cases, there is a simple cross-reference from the headword for the hidden entry:

**extirpation** *n.* see **ABLATION**.

## Synonyms

Many of the terms defined in the dictionary have synonyms, which are displayed in boldface at the end of a given definition, preceded by “Also called.” If a headword has more than one synonym, these are presented in alphabetical order. Our general policy is to put definitions under the most commonly used names; alternative names are treated as cross-reference entries. Examples:

**acetone** *n.* a colorless volatile liquid with a sweet, fruity odor that forms in excessive amounts in the blood of people with diabetes or other metabolic disorders in which the body uses fat instead of glucose (sugar) for energy. Also called **dimethyl ketone**.

**dimethyl ketone** see **ACETONE**.

**diminished responsibility** a form of **AFFIRMATIVE DEFENSE** in which evidence of mental abnormality is presented to mitigate or reduce a defendant’s accountability for an act. It is distinct from an **INSANITY DEFENSE**, which takes an all-or-none perspective with regard to **CRIMINAL RESPONSIBILITY**. Also called **limited responsibility**. See also **PARTIAL INSANITY**.

**limited responsibility** see **DIMINISHED RESPONSIBILITY**.

## Etymologies

Many entries provide information about the origin of the term defined. This information usually will take the form of brief biographical notes on figures who are identified in the headwords (eponymous entries) or who may have originated a term or significantly developed its meaning. In most cases, etymologies are presented in brackets at the end of a definition, following any synonyms and terminal

cross-references, but may alternatively be embedded within the definition. Some examples:

**Ajzen–Fishbein model** the original framework for what is now known as the THEORY OF REASONED ACTION. [Icek **Ajzen** (1942– ) and Martin **Fishbein** (1936–2009), U.S. social psychologists]

**anorthoscopic perception** the holistically perceived form of an object revealed over time through a narrow slit aperture. It is distinct from ordinary object perception in that the perceived object arises from the temporal integration of visual information derived from the same retinotopic area (i.e., there is no spatially extended retinotopic image). Also called **slit viewing**. See ANORTHOSCOPE. [first reported in 1862 by German astrophysicist Johann Karl Friedrich Zöllner (1834–1882)]

Note that figures who are identified in eponymous headwords are treated as hidden entries—that is, their surnames are printed in sans serif semibold type. Note also that some figures mentioned in etymologies are the subject of an entry themselves (in the dictionary’s biographical section), in which case their surnames are treated as cross-references and set in small capital letters. Example:

**animus** *n.* in ANALYTIC PSYCHOLOGY, (a) an ARCHETYPE that represents universal masculine characteristics or (b) the unconscious masculine component of the female psyche. Compare ANIMA. [sense originated by Carl JUNG]

In addition, some foreign-language terms have etymologies in the form of translations or explanations:

**ad hoc** for a particular purpose or in response to some particular event or occurrence. For example, an **ad hoc committee** is convened on a short-term basis to address a single problem, and an **ad hoc hypothesis** is an explanation of a particular phenomenon, rather than a general theory. [Latin, literally: “to this”]

## Derived Words

Derived words are those that can be formed formulaically from headwords according to certain rules. When given, they are shown at the end of the entry in boldface type, preceded by an em dash and followed by a part-of-speech label:

**abiotrophy** *n.* loss of function or loss of resistance to a disease through degeneration or failure of body tissues, organs, or systems. Abiotrophy is used particularly to refer to premature degeneration caused by a genetic defect, as in Huntington’s disease. —**abiotrophic** *adj.*

**accessible** *adj.* **1.** receptive or responsive to personal interaction and other external stimuli. . . . **4.** in a tissue, reachable by means of standard surgical or diagnostic procedures. **5.** in a MARKOV CHAIN, describing a state *j* that there is a possibility of reaching from another state *i* in some number of steps. —**accessibility** *n.*

Here, **abiotrophic** is an adjective derived from the noun **abiotrophy**, and **accessibility** is a noun derived from the adjective **accessible**.



# Quick Guide to Format

Headword	<b>microvillus</b> <i>n.</i> ( <i>pl.</i> <b>microvilli</b> ) a slender, minute structure projecting from the surface of a cell. For example, in taste perception, a microvillus is the hairlike extension of each TASTE CELL that projects through the pore of a TASTE BUD to sample the environment. Although a microvillus accounts for only 3% of the surface area of a taste cell, it is studded with receptor proteins that recognize specific molecules and is the site of TASTE TRANSDUCTION.	Plural form
Part-of-speech label	<b>midbrain</b> <i>n.</i> a relatively small region of the upper brain-stem that connects the FOREBRAIN and HINDBRAIN. It contains the TECTUM (and associated inferior and superior COLLICULI), TEGMENTUM, and SUBSTANTIA NIGRA. Also called	
Alternative name	<b>mesencephalon.</b>  <b>middle-child syndrome</b> a hypothetical condition pur-ported to be shared by all middle-born children, based on the assumption that middle children in a family develop per-sonality characteristics that are different from first-born and later born children. Current research indicates that a child's birth order in a particular family may have small, subtle in-fluences on personality and intelligence but not strong and consistent effects on psychological outcomes. See also BIRTH ORDER.	Cross-reference
	<b>midlife crisis</b> a period of psychological distress thought to occur in some individuals during the middle years of adulthood, roughly from ages 35 to 65. Causes may include significant life events and health or occupational problems and concerns. However, no empirical data exist to support the notion that this distress is specific to midlife, and many researchers consider the midlife crisis a myth. See also AGE CRISIS. [coined in 1965 by Canadian consulting organiza-tional psychologist Elliot Jaques (1917–2003)]	Etymology
Abbreviation	<b>mild cognitive impairment</b> (MCI) a decline in cogni-tive function that is small but detectable and that represents a transitional condition between the cognitive changes typi-cally associated with normal aging and those changes that meet the criteria for DEMENTIA.	
Sense number	<b>millenarianism</b> <i>n.</i> <b>[1.]</b> belief in the imminent end of human history, to be followed by a thousand-year period of peace and blessedness (often associated with the Second Coming of Christ). Such beliefs were current in the early Christian church and appeared sporadically, primarily from the 11th through the 17th centuries, in periods of political or intellectual crisis and among marginalized groups. Some groups proclaim similar beliefs but without the language and imagery of Christianity. <b>[2.]</b> by extension, any belief that rapid and violent change can lead to a golden age of justice and peace. — <b>millenarian</b> <i>adj.</i>	
Sense number		
Derived word	<b>mimetic</b> <i>adj.</i> relating to imitation, as in a young chimpan-zee's imitation of its parent's actions or a parrot imitating the words of its owner. A <b>mimetic response</b> is a copying or imitative response. Mimetic can also refer to physical fea-tures, such as the pseudopenis of the female spotted hyena, which is an enlargement of the clitoris and vagina through which mating and birth are accomplished. — <b>mimesis</b> <i>n.</i>	Hidden entry



# Aa

**a-** (**an-**) *prefix* not or without.

**A1** abbreviation for primary AUDITORY CORTEX.

**A2** abbreviation for secondary AUDITORY CORTEX.

**AA 1.** abbreviation for ACHIEVEMENT AGE. **2.** abbreviation for ALCOHOLICS ANONYMOUS.

**AAAP** abbreviation for AMERICAN ASSOCIATION OF APPLIED PSYCHOLOGY.

**AAAPP** abbreviation for AMERICAN ASSOCIATION OF APPLIED AND PREVENTIVE PSYCHOLOGY.

**AAAS** abbreviation for AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

**AAASP** abbreviation for Association for the Advancement of Applied Sport Psychology. See ASSOCIATION FOR APPLIED SPORT PSYCHOLOGY.

**AACP** abbreviation for AMERICAN ASSOCIATION OF CLINICAL PSYCHOLOGISTS.

**AACS** abbreviation for AMERICAN ACADEMY OF CLINICAL SEXOLOGISTS, INC.

**AAHPERD** abbreviation for AMERICAN ALLIANCE FOR HEALTH, PHYSICAL EDUCATION, RECREATION AND DANCE.

**AAI** abbreviation for ADULT ATTACHMENT INTERVIEW.

**AAIDD** abbreviation for AMERICAN ASSOCIATION ON INTELLECTUAL AND DEVELOPMENTAL DISABILITIES.

**A-alpha fiber** see A FIBER.

**AAMI** abbreviation for AGE-ASSOCIATED MEMORY IMPAIRMENT.

**AAMR** abbreviation for American Association of Mental Retardation. See AMERICAN ASSOCIATION ON INTELLECTUAL AND DEVELOPMENTAL DISABILITIES.

**AAP** abbreviation for ASSOCIATION FOR THE ADVANCEMENT OF PSYCHOLOGY.

**AASECT** abbreviation for AMERICAN ASSOCIATION OF SEXUALITY EDUCATORS, COUNSELORS AND THERAPISTS.

**AASP** abbreviation for ASSOCIATION FOR APPLIED SPORT PSYCHOLOGY.

**AAVE** abbreviation for African American Vernacular English. See BLACK ENGLISH.

**ab-** *prefix* away from or opposite to.

**ABA** abbreviation for APPLIED BEHAVIOR ANALYSIS.

**A-B-A-C-A design** a type of SINGLE-CASE DESIGN having five consecutive phases: a baseline condition in which no treatment is present (Phase A), a treatment condition in which a manipulation is introduced (Phase B), a return to the no-treatment condition (Phase A), a new treatment condition in which a different manipulation is introduced (Phase C), and a subsequent return to the no-treatment condition (Phase A). The A-B-A-C-A design helps to establish the effects on the DEPENDENT VARIABLE of alternating treatments by evaluating the relationship between the in-

troduction and removal of one treatment and a subsequent introduction and removal of a second treatment.

**A-B-A design** a type of SINGLE-CASE DESIGN having three phases: a baseline condition in which no treatment is present (Phase A), a treatment condition in which a manipulation is introduced (Phase B), and a return to the no-treatment condition (Phase A). The design allows for evaluation of the introduction of the treatment by comparing the DEPENDENT VARIABLE between the first two phases (A-B sequence) as well as evaluation of the removal of the treatment by comparing the dependent variable between the last two phases (B-A sequence). This greatly reduces the possibility of a coincidental treatment effect, which may occur in the simpler A-B DESIGN.

**abandonment** *n.* desertion or substantial leave-taking by a parent or primary caregiver of his or her custodial and other responsibilities to a dependent. Dependents are usually children but may also be adult individuals who are ill. —**abandon** *vb.*

**abandonment reaction** a feeling of emotional deprivation, loss of support, and loneliness experienced by children who have been deserted or neglected by a parent or primary caregiver. Abandonment reaction is also experienced by adults who have lost a loved one on whom they have depended.

**abasia** *n.* severe impairment or complete loss of the ability to walk due to problems in motor coordination. —**abasic** *adj.*

**abatement** *n.* a reduction or lessening in the severity of pain or other symptoms of illness or disorder.

**ABCDE technique** an extension of ABC THEORY to include the procedure used in RATIONAL EMOTIVE BEHAVIOR THERAPY of Disputing irrational beliefs to achieve several types of Effects (e.g., self-enhancing beliefs, appropriate feelings, desirable behaviors). [devised by Albert ELLIS]

**ABCL** abbreviation for American Birth Control League. See PLANNED PARENTHOOD FEDERATION OF AMERICA.

**ABC theory** the conceptual framework underlying RATIONAL EMOTIVE BEHAVIOR THERAPY, which suggests that Activating events (i.e., adversities) are mediated by irrational Beliefs in determining inappropriate emotional and behavioral Consequences. See also ABCDE TECHNIQUE. [devised by Albert ELLIS]

**A-B design** the simplest SINGLE-CASE DESIGN, comprising a pretreatment or baseline phase (Phase A) followed by a treatment phase (Phase B). Although it allows for evaluation of the treatment's effect by comparing the DEPENDENT VARIABLE during the two phases, the design does not provide evidence of causality because it does not establish a repeated relationship between the introduction and removal of the treatment and a consequential change in the dependent variable (compare A-B-A DESIGN). See also PRETEST-POSTTEST DESIGN.

**abdominal bloating** see BLOATING.

**abdominal migraine** recurrent, severe episodes of ab-

dominal pain that may be accompanied by nausea and vomiting. The episodes last from 1 to 72 hours and occur most frequently in children.

**abducens nerve** the sixth CRANIAL NERVE, carrying motor fibers for control of the lateral rectus muscle of the eye, which rotates the eyeball outward. Also called **abducent nerve**.

**abducens nucleus** a collection of nerve cells in the floor of the fourth VENTRICLE of the brain, from which the ABDUCENS NERVE originates.

**abduction** *n.* **1.** movement of a limb away from the midline of the body. Any muscle that produces such movement is called an **abductor**. Compare ADDUCTION. **2.** the act of taking a person away by force or deception. **3.** the process of studying an event or phenomenon in order to generate possible explanatory hypotheses. The object is to determine which hypotheses should be tested, rather than which should be adopted as correct. —**abduct** *vb.*

**Abecedarian Project** an early intervention demonstration project that began in the 1970s at the University of North Carolina at Chapel Hill, the goal of which was to enrich the lives of young children from low-income families. Four cohorts of children born between 1972 and 1977 were randomly selected as infants to a treatment group receiving a full-time educational intervention or to a control group receiving no intervention. Those in the intervention group were enrolled in a full-time child care center. The children began the program shortly after birth and attended until age 5. Follow-up studies were conducted with the children at ages 12, 15, and 21. The Abecedarian Project is one of the few early intervention ENRICHMENT programs to report improved cognitive test scores and other gains in participants into young adulthood relative to participants in the control condition. The mothers of children enrolled in the project also attained higher educational and employment status than the parents of children in the control group.

**aberrant response** an abnormal or atypical behavior, commonly targeted during a behavioral intervention.

**aberration** *n.* **1.** any deviation, particularly a significant or undesirable one, from the normal or typical. See also MENTAL ABERRATION. **2.** in vision, the failure of light rays to converge at the same point, due either to distortion by a lens (SPHERICAL ABERRATION) or to the formation of colored fringes by a lens (CHROMATIC ABERRATION).

**A-beta fiber** see A FIBER.

**abience** *n.* a response or behavior that results in movement away from a stimulus, either by physical withdrawal from the stimulus or by an action designed to avoid the stimulus entirely. Compare ADIENCE. —**abient** *adj.*

**Abilify** *n.* a trade name for ARIPIPRAZOLE.

**ability** *n.* existing competence or skill to perform a specific physical or mental act. Although ability may be either innate or developed through experience, it is distinct from capacity to acquire competence (see APTITUDE).

**ability–achievement discrepancy** the difference between an individual's known aptitude for a subject area or concept and his or her performance in that area or concept.

**ability grouping** **1.** the assignment of pupils to school classes on the basis of their learning ability. **2.** the practice of dividing a class into sections based on student ability

in one area, as in the assignment of elementary school-children to reading groups for fast or slow readers.

**ability level** an index of achievement or performance that reports the absolute or relative ability of the participant in relation to the trait or characteristic being assessed.

**ability parameter** (symbol:  $\theta$ ) in ITEM RESPONSE THEORY, a theoretical value that represents a person's capability or probable performance on a task. It is assumed that test takers possess some degree of underlying ability, and that for each individual at each ABILITY LEVEL there is a specific ITEM CHARACTERISTIC CURVE defining the probability of responding correctly.

**ability test** **1.** a norm-referenced standardized test designed to measure competence or capacity to perform a physical or mental act. **2.** a test measuring achievement.

**ability trait** a personality trait that involves an individual's capacity to attain his or her goals. It is one of three classes of SOURCE TRAITS in CATTELL'S PERSONALITY TRAIT THEORY, the other two being DYNAMIC TRAITS and TEMPERAMENT TRAITS.

**abiotic** *adj.* nonliving.

**abiotrophy** *n.* loss of function or loss of resistance to a disease through degeneration or failure of body tissues, organs, or systems. Abiotrophy is used particularly to refer to premature degeneration caused by a genetic defect, as in Huntington's disease. —**abiotrophic** *adj.*

**ablation** *n.* the removal or destruction of part of a biological tissue or structure by a surgical procedure (e.g., mechanical or laser excision) or a toxic substance (e.g., chondroitinase), usually for treatment or to study its function. When the entire tissue or structure is excised, the process is called **extirpation**. See also BIOPSY.

**ableism** *n.* discrimination against individuals with disabilities or the tendency to be prejudiced against and to stereotype them negatively as, for example, less intelligent, nonproductive, or dependent on others. —**ableist** *adj.*

**ablution** *n.* **1.** a largely obsolete therapeutic technique utilizing water to calm agitated patients, such as by wrapping them in wet towels or immersing them in water. It was abandoned with the advent of psychotropic drugs. **2.** a symbolic cleansing of the body, or of possessions, with the intent of purification.

**ABMS** abbreviation for AMERICAN BOARD OF MEDICAL SPECIALTIES.

**Abney's effect** a perceptual phenomenon in which the addition of white light leads to a shift in the HUE of a monochromatic color. [William Abney (1843–1920), British chemist and physicist]

**abnormal** *adj.* relating to any deviation from what is considered typical, usual, or healthy, particularly if the deviation is considered harmful or maladaptive. In statistics, for example, abnormal scores are those that are outside the usual or expected range. The term, however, is most often applied to behavior that differs from a culturally accepted norm, especially when indicative of a mental disorder. —**abnormality** *n.* —**abnormally** *adv.*

**abnormal behavior** behavior that is atypical or statistically uncommon within a particular culture or that is maladaptive or detrimental to an individual or to those around that individual. Such behavior is often regarded as evidence of a mental or emotional disturbance, rang-

ing from minor adjustment problems to severe mental disorder.

**abnormal fixation** *n.* the inability to focus on a given target of interest. Abnormal fixations may be the result of saccadic intrusions or oscillations (see **SACCADE**) or **NYSTAGMUS**.

**abnormal grief** see **COMPLICATED GRIEF**.

**abnormality** *n.* **1.** the state or condition of being **ABNORMAL**. **2.** a defect or malformation in structure or function.

**abnormal psychology** the branch of psychology devoted to the study, assessment, treatment, and prevention of maladaptive behavior. See also **PSYCHOPATHOLOGY**.

**aboiement** *n.* the involuntary, uncontrollable production of animalistic sounds. Aboiement (French, "barking") is a symptom sometimes occurring in schizophrenia and Tourette's disorder.

**abortifacient** *n.* any agent that induces abortion. Also called **abortient**.

**abortion** *n.* the expulsion from the uterus of an embryo or fetus before it is able to survive independently. An abortion may be either spontaneous, in which case it occurs naturally and is also called a **miscarriage**, or induced, in which case it is produced deliberately by artificial means such as drugs or surgery and done for therapeutic reasons or as an elective decision. The practice is controversial and may involve **abortion counseling**, the provision of guidance, advice, information, and support on issues concerning termination of pregnancy and the alternatives of adoption or raising the child.

**abortion laws** laws concerning the rights of women to obtain an abortion, which in the United States are provisioned through the 1973 U.S. Supreme Court decision in *Roe v. Wade*.

**aboulia** *n.* see **ABULIA**.

**above-average effect** the tendency of a person to hold overly favorable views of one's own intellectual and social abilities relative to others. For example, students' predictions of their own final exam score in a particular college class often are based on their highest score received to that point, but their predictions of someone else's final exam score typically are based on that student's mean score. The above-average effect appears to be common and consistent across a variety of judgment domains. Also called **better-than-average effect**. Compare **BELOW-AVERAGE EFFECT**.

**ABPH** abbreviation for **AMERICAN BOARD OF PSYCHOLOGICAL HYPNOSIS**.

**ABPP** abbreviation for **AMERICAN BOARD OF PROFESSIONAL PSYCHOLOGY**.

**ABR** abbreviation for auditory brainstem response. See **BRAINSTEM AUDITORY EVOKED RESPONSE**.

**abreaction** *n.* the therapeutic process of bringing forgotten or inhibited material (i.e., experiences, memories) from the unconscious into consciousness, with concurrent emotional release and discharge of tension and anxiety. See also **CATHARSIS**.

**abscess** *n.* a contained but often enlarging area of infection that includes pus and dead tissue. A brain abscess raises **INTRACRANIAL PRESSURE** and can cause substantial

neurological deficits, such as poor coordination, decreased sensation, confusion, and other altered mental states.

**abscissa** *n.* the horizontal coordinate in a graph or data plot; that is, the *x*-axis. See also **ORDINATE**.

**absence** *n.* a brief **LOSS OF CONSCIOUSNESS** or period of mental inattentiveness, particularly when associated with a seizure (see **ABSENCE SEIZURE**), with no memory for the event afterward.

**absence culture** an informal organizational **NORM** that leads employees and managers to believe that they are entitled to take more days off work than the number allowed. In some organizations, for example, employees may have come to regard sick leave as a benefit to be claimed rather than a provision to be utilized only when strictly necessary.

**absence seizure** a type of **GENERALIZED SEIZURE**, formerly called **petit mal seizure**, in which the individual abruptly ceases activity and cannot afterward remember the event. The absences usually last from 5 to 15 seconds, during which the individual is unresponsive and motionless, staring blankly. Seizures of this type typically begin between ages 4 and 12 and rarely persist into adulthood.

**absence without leave (AWOL)** unauthorized or unreported absence, which may be grounds for disciplinary action.

**absenteeism** *n.* unjustified absence from work or school, especially when regular or persistent. Although absenteeism has been linked to job satisfaction, other factors, such as **ORGANIZATIONAL CULTURE** and the **ABSENCE CULTURE** in particular, may be more relevant.

**absent grief** a form of **COMPLICATED GRIEF** in which a person shows no, or only a few, signs of distress about the death of a loved one. This pattern of grief is thought to be an impaired response resulting from denial or avoidance of the emotional realities of the loss.

**absent-mindedness** *n.* a state of apparent inattention marked by a tendency to be preoccupied with one's own thoughts and not with external conditions. See also **MIND WANDERING**.

**absent state** a vacant, dreamlike state of detachment that may occur in **COMPLEX PARTIAL SEIZURES**.

**absolute** *adj.* **1.** not limited or subject to restriction, as in **absolute power**. **2.** not conditional on or relative to anything else, as in **ABSOLUTISM**. See also **CULTURAL UNIVERSALISM**. **3.** denoting an ultimate limit, as in **absolute zero**. —**absolutist** *adj.*

**absolute difference** the distance between two numeric values, disregarding whether this is positive or negative. The absolute difference thus provides no information about relative magnitude. For example, the absolute difference between 11 and 20 is 9, as is the absolute difference between 13 and 4.

**absolute error** the degree to which an observation is inaccurate without specification of whether it errs by being too high or too low. Absolute error is computed as the average **ABSOLUTE DIFFERENCE** between the intended or expected value and the actual value. See also **CONSTANT ERROR**; **RANDOM ERROR**.

**absolute idealism** the philosophical position that both mental and material reality are manifestations of a universal and absolute mind or spirit. See **IDEALISM**; **IDEALISTIC**



MONISM. [proposed by German philosopher Georg Wilhelm Friedrich Hegel (1770–1831)]

**absolute impression** a psychophysical judgment based on implied or vague standards, such as *It was a bright day*.

**absolute judgment** a psychophysical judgment in which a single stimulus is placed in a particular category (e.g., *bright, loud*), as opposed to one in which several stimuli are compared to one another or to a given standard (e.g., *brighter, louder*). Compare COMPARATIVE JUDGMENT.

**absolute-judgment method** see METHOD OF ABSOLUTE JUDGMENT.

**absolute limen (AL)** see ABSOLUTE THRESHOLD.

**absolute measurement** a measurement made directly and independently of comparison with other measurements. An absolute measurement of an individual's height, for instance, would yield a single definitive value that need not be assessed relative to another person to be meaningful. Compare RELATIVE MEASUREMENT.

**absolute pitch** the ability to identify the pitch of a sound accurately without the use of a reference pitch. Also called **perfect pitch**. Compare RELATIVE PITCH.

**absolute reality** in philosophy, the totality of what really exists, regarded as a unity transcending the world of PHENOMENA experienced and interpreted by humans. The concept of an absolute reality is mainly of significance in the idealist tradition deriving from the work of Immanuel KANT. See NOUMENON; TRANSCENDENTALISM.

**absolute refractory period** see REFRACTORY PERIOD.

**absolute scotoma** see SCOTOMA.

**absolute threshold** the minimum amount of stimulation required to trigger a reaction or produce a sensation. Absolute threshold is measured across several trials. It is the lowest or weakest level of stimulation (e.g., the slightest, most indistinct sound) that can be detected on 50% of trials. Although the name suggests a fixed level at which stimuli effectively elicit sensations, the absolute threshold fluctuates according to alterations in receptors and environmental conditions. Also called **absolute limen (AL)**; **detection threshold**; **sensation threshold**.

**absolute value** a number considered without regard to its algebraic sign (i.e., whether it is positive or negative). For example, assume that for each person in a weight management program there was a number indicating the difference between the current week's weight and the weight on the previous week. This could reveal a negative number (e.g., -1) if the person lost one pound; conversely, it could be a positive value (e.g., +1) if the person weighed one pound more than last week. If the absolute value of the weight difference was taken, it would simply reveal a difference of 1 pound, without any indication of whether it was plus or minus. Also called **modulus**.

**absolutism** *n.* the philosophical position that there are absolute ethical, aesthetic, or epistemological values. Phenomena are believed to have a fixed reality; thus, what is regarded as true in one circumstance will be regarded as true in all others as well. For example, a particular action will always be deemed immoral regardless of its outcome or any other individual or subjective consideration. Such a position involves a rejection (in whole or in part) of RELATIVISM.

**absorption** *n.* **1.** an extreme involvement or preoccupa-

tion with one object, idea, or pursuit, with inattention to other aspects of the environment. Compare SUSTAINED ATTENTION. See also TELLEGEN ABSORPTION SCALE. **2.** the uptake of fluid and dissolved substances into a cell across the plasma membrane. For example, an administered drug moves through various biological membranes from its site of administration to its target organ. Absorption into the target organ is dependent on a number of factors, including the method of ADMINISTRATION (e.g., oral, intravenous); the properties of the drug (e.g., molecular size, ability to cross lipid membranes); the amount of drug administered; and the characteristics or state of the individual (e.g., body mass, sex, age, presence of disease, presence of other drugs). **3.** in physics, the conversion of energy from one form to another on entering a medium.

**absorption curve** a graph that plots the number of photons of light of different wavelengths absorbed by a PHOTOPIGMENT.

**abstinence** *n.* the act of refraining from the use of something, particularly alcohol or drugs, or from participation in sexual or other activity. In most instances, abstinence from drugs or alcohol is the primary goal of substance abuse treatment. See also RELAPSE; SUBSTANCE WITHDRAWAL. —**abstinent** *adj.*

**abstinence delirium** a form of DELIRIUM that may result from rapid withdrawal from alcohol or drugs of abuse. See ALCOHOL WITHDRAWAL DELIRIUM; DELIRIUM TREMENS.

**abstinence rule** see RULE OF ABSTINENCE.

**abstinence syndrome** an older term for the characteristic set of physiological and behavioral events that may accompany rapid withdrawal from dependence-inducing substances.

**abstract ability** see ABSTRACT INTELLIGENCE.

**abstract attitude** a COGNITIVE STYLE that involves the ability to grasp essentials and common properties, to keep different aspects of a situation in mind and shift from one to another, to predict and plan ahead, and to think symbolically and draw conclusions. These capacities are often impaired in people with certain neurological or psychological disorders. Also called **categorical attitude**. Compare CONCRETE ATTITUDE. See also ABSTRACT THINKING. [defined by Kurt GOLDSTEIN]

**abstract conceptualization** the process of forming abstract concepts, which may be general and apply to numerous particular instances (e.g., *dog, fish*) or wholly intangible and have no specific material referent (e.g., *liberty, youth*). See ABSTRACTION; CONCEPTUALIZATION.

**abstract idea** an idea or concept that has no specific material referent, such as *justice*, or one that applies to a great many particular instances, having a meaning apart from any particular, such as *dog*. See also UNIVERSALS.

**abstract intelligence** the intellectual ability to think in terms of abstract concepts. Also called **abstract ability**. See ABSTRACT THINKING. Compare CONCRETE INTELLIGENCE.

**abstraction** *n.* **1.** the formation of general ideas or concepts by extracting similarities from particular instances. The precise cognitive processes by which this occurs remain a subject of investigation. **2.** such a concept, especially a wholly intangible one, such as *goodness* or *truth*. **3.** in conditioning, DISCRIMINATION based on a single property of multicomponent stimuli. —**abstract** *vb.*

**abstraction experiment** a study that investigates par-

ticipants' ability to induce the general properties of a category or concept from specific instances that are presented to them as examples or nonexamples. See also CONCEPT-DISCOVERY TASK; CONCEPT-FORMATION TEST.

**abstract learning** acquiring knowledge of general or intangible material, such as the meanings of CONCEPTS and PROPOSITIONS and the logical and systematic relations between them.

**abstract representation** in cognitive theory, a MENTAL REPRESENTATION of a stimulus in an abstract or essential form that is not tied to any one of its variable surface forms. For example, the letter *A* can be thought about at an abstract level with no reference to specific surface forms, such as *a*, *A*, or **a**. Compare CONCRETE PICTURE.

**abstract thinking** thinking characterized by the use of general ideas or concepts. Compare CONCRETE THINKING. See also ABSTRACT ATTITUDE; CATEGORICAL THOUGHT.

**abstract-versus-representational dimension** the degree to which a work of art is nonrepresentational versus representational of reality. Representational art is characterized by a great amount of detail, whereas abstract art is highly selective in the inclusion of detail. See also REALISM FACTOR.

**abstract word** in linguistics, a word denoting a concept or idea not readily perceptible to the senses, such as *curiosity* or *metaphor*. Compare CONCRETE WORD.

**absurdities test** a type of test in which participants identify incongruities in a picture, story, or other written material. Absurdity tasks are intended to assess reasoning abilities and may be incorporated into intelligence tests and neuropsychological evaluations.

**abulia (aboulia)** *n.* extreme loss of initiative and will-power, resulting in an inability to make decisions or initiate voluntary actions. —**abulic** *adj.*

**abuse 1.** *n.* interactions in which one person behaves in a cruel, violent, demeaning, or invasive manner toward another person or an animal. The term most commonly implies physical mistreatment but also encompasses sexual and psychological (emotional) mistreatment. **2.** *vb.* to subject a person or animal to such treatment. **3.** *n.* see SUBSTANCE ABUSE. **4.** *n.* colloquially, the misuse of a substance to the extent that it causes the individual difficulty, whether or not it meets a formal diagnosis of substance abuse. —**abuser** *n.*

**abuse excuse** experience of prior abuse (e.g., physical, mental, or sexual) used as a defense for a person's violent acts.

**abuse potential** the relative likelihood that a particular psychoactive substance will reinforce drug-taking behavior to the point of abuse. Factors that determine abuse potential include subjective experience with a given substance, route of drug administration (e.g., intravenous, inhalation, oral), and the onset speed, duration, and nature of the drug effect. Substances with a high abuse potential include intravenous heroin, crack cocaine, morphine, and smoked opium. Substances with a low abuse potential include the hallucinogens and antipsychotic medications. Also called **abuse liability**.

**abusive punishment** use of excessive physical force to discipline a child that results in bodily injury, including noticeable marks, bruises, cuts, or welts; such punishment in-

cludes beating, burning, or tying up a child. Compare CORPORAL PUNISHMENT.

**ABX paradigm** a psychophysical procedure in which a pair of auditory stimuli (*A* and *B*) are presented, followed by another stimulus (*X*). In one version of the task, participants are asked to judge whether *X* is identical to *A* or *B*; in another version, they have to judge whether *X* was included in the *A–B* pair.

**ACA** abbreviation for AMERICAN COUNSELING ASSOCIATION.

**academic** *adj.* relating to formal learning with conventional or theoretical study at a school or other educational institution.

**academic achievement 1.** any identifiable success in the areas of scholarship or disciplined study. **2.** in educational psychology, a level of proficiency in scholastic work in general or in a specific skill, such as arithmetic or reading. Evidence of future academic achievement is usually based on the results of standardized ABILITY TESTS and assessment of performance by a teacher or other supervisor.

**academic aptitude** competence or capacity to perform a scholastic mental act, such as the ability to learn quickly in areas of scholarship or disciplined study. Academic aptitude may be either innate or acquired by education and practice. See also APTITUDE.

**academic failure** any marked insufficiency or inadequacy in the area of scholarship or study, for example, when a learner does not achieve an expected competence. Contributing factors may include home environment and family, peers, economic context, learning environment and attributes of instruction, and individual characteristics.

**academic freedom** within an institution of learning, the liberty of a teacher to educate, of a student to study, and of both to express opinions, particularly regarding controversial topics (e.g., morals, religion, politics), without interference from or punishment by government, school officials, teachers, or community groups.

**academic intelligence** the intellectual skills that, according to some theories, are particularly important to success in school environments (e.g., analysis, evaluation, judgment, recognition). See also ANALYTICAL INTELLIGENCE. [originally described in 1974 by Ulric NEISSER]

**academic intelligence task** a task that requires the use of academic skills and knowledge, such as one that involves solving arithmetic problems or verbal analogies. Compare PRACTICAL INTELLIGENCE TASK.

**academic intervention** the active involvement of school officials and teachers in developing and implementing an effective plan for the prevention or remediation of inappropriate and disruptive student behavior or for assisting students with academic difficulties. Successful programs of intervention are most often individualized, child focused, and minimally restrictive. Academic intervention is the antithesis of reactive strategies, such as loss of privileges and time out.

**academic overachievement 1.** academic performance that exceeds the expected level for a particular individual, or the usual predicted attainment level, especially as indicated by norm-referenced and standardized intelligence or aptitude tests. **2.** the act of driving oneself relentlessly in attempting to reach a difficult scholastic goal.

**academic problem** a learning problem in a schoolchild who does not acquire the necessary grade-level knowledge

or cannot successfully pursue the expected grade-level tasks and scholarly goals. It cannot be attributed to any underlying neurological, psychological, or other disorder and thus is distinct from a LEARNING DISABILITY.

**academic self-concept** an individual's evaluation of his or her success in academic or educational studies. The two aspects of this evaluation are (a) a general academic self-concept in which students assess their overall learning skills and performance; and (b) a specific academic self-concept of their prowess in such specific subjects as mathematics, social science, or language studies. A major consideration for any individual is whether a positive self-concept is an aid to academic achievement. Another consideration is whether academic achievement, in itself, enhances a positive self-concept.

**academic underachievement** **1.** performance below a particular person's predicted capacity, especially as indicated by norm-referenced and standardized intelligence or aptitude tests. **2.** lack of drive in pursuit of scholastic goals. Causative factors can include unstimulating curriculum and instruction, negative attitudes of parents or teachers, changes in the student, and individual choices that militate against learning.

**Academy for Eating Disorders (AED)** a global professional organization for eating disorders research, education, treatment, and prevention. It advocates for patients with eating disorders and the professionals who treat them, hosts an annual International Conference on Eating Disorders, and publishes the *International Journal of Eating Disorders* eight times a year. Intended for a wide membership of health care specialists, coverage includes epidemiology, psychobiology, sociology, and therapy of anorexia, bulimia, and other conditions involving atypical body weight regulation. The academy also has published the *Annual Review of Eating Disorders Part 1* (2007) and *Part 2* (2008), two clinically oriented books synthesizing the literature of the field, and has authored numerous position papers and media advisories. Founded in 1993, the AED is headquartered in Deerfield, Illinois.

**Academy of Certified Social Workers (ACSW)** a professional organization founded in 1960 by the NATIONAL ASSOCIATION OF SOCIAL WORKERS to provide certification of competence for social workers for independent, self-regulated practice and to ensure high standards of practice.

**acalculia** *n.* loss of the ability to perform simple arithmetic operations that results from brain injury or disease, usually to the PARIETAL LOBE. It is an acquired condition, whereas DYSCALCULIA is developmental.

**acamprosate** *n.* an analog of the inhibitory neurotransmitter GAMMA-AMINOBUTYRIC ACID (GABA) used in the management of alcohol dependence. Although exact mechanisms of action are unclear, acamprosate may act by directly binding to the GABA receptor complex (see GABA<sub>A</sub> RECEPTOR; GABA<sub>B</sub> RECEPTOR); it may also act by inhibiting the actions of the excitatory amino acid GLUTAMATE, for example by inhibiting NMDA RECEPTORS. When administered in combination with behavioral treatments, it has some efficacy in reducing alcohol intake or increasing alcohol-free periods in people recovering from alcohol dependence. U.S. trade name: **Campral**.

**acarophobia** *n.* a former name for DELUSIONAL PARASITOSIS. Its use was discontinued upon recognition that the

condition does not involve a persistent and irrational fear of being infested by parasites (a phobia) but rather a firmly held belief of having been infested (a delusion). —**acarophobic** *adj.*

**acatamathesia (akatamathesia)** *n.* loss of the ability to comprehend sensory stimuli in general or speech in particular.

**acataphasia (akataphasia)** *n.* the use of inappropriate or grammatically incorrect words and expressions. It is a speech disturbance frequently found in individuals with schizophrenia or aphasia. See also AGRAMMATISM.

**acathisia** *n.* see AKATHISIA.

**ACC** abbreviation for ANTERIOR CINGULATE CORTEX.

**accelerated longitudinal design** see COHORT-SEQUENTIAL DESIGN.

**acceleration** *n.* **1.** an increase in speed of movement or rate of change. Compare DECELERATION. **2.** in mathematics and statistics, the rate of change in the SLOPE of a function or the rate of change in one variable as a function of an increase in a second variable.

**acceleration–deceleration injury** a form of HEAD INJURY caused by the head suddenly being placed into motion or abruptly stopped, as, for example, when the individual is in a car accident. The sudden motion or stop causes diffuse stretching of white matter tracts in addition to bleeding and other neurological effects (e.g., biochemical cascades that eventually lead to axonal injury). The injury may have a variety of consequences, including personality change, attention problems, memory disorders, and EXECUTIVE DYSFUNCTION.

**acceleration effects** physiological, biochemical, or psychological changes in the body resulting from acceleration imposing g-forces greater than 1. Examples include displacement of body fluids, changes in pupil size, changes in or disturbances of heart rhythm, increases in blood pressure, deficiency of oxygen in the blood (see HYPOXEMIA), disorientation and confusion, amnesia, GRAYOUT, BLACKOUT, and GRAVITY-INDUCED LOSS OF CONSCIOUSNESS.

**acceleration forces** forces exerted on an object by the rate of change of its velocity. In psychology, the focus is on the range of forces sustained by the human body when it is in a moving vehicle, such as an automobile or aircraft, and the resultant physical, physiological, and psychological consequences. See ACCELERATION EFFECTS.

**accent** *n.* **1.** in linguistics, phonetic features of an individual's speech that are associated with geographical region or social class. The standard version of a language (see STANDARD LANGUAGE) is usually considered by native speakers to be unaccented. Compare DIALECT. **2.** a STRESS placed on a syllable of a word, orthographically marked in some languages.

**accentuation theory** the proposition that classification of items produces encoding biases, that is, that individuals tend to exaggerate (accentuate) the similarities among items placed in the same category and the differences among items placed in different categories. This accentuation effect is an important component of SOCIAL IDENTITY THEORY. [proposed in 1959 by Polish-born British social psychologist Henri Tajfel (1919–1982)]

**acceptance** *n.* **1.** a favorable attitude toward an idea, situation, person, or group. In the context of psychotherapy and counseling, it is the receptive, nonjudgmental attitude

of therapists or counselors, which conveys an implicit respect and regard for their clients as individuals. **2.** willing acknowledgment of validity or correctness. In the context of recovery from substance abuse and other addictions, it is essential for a person to accept that he or she has a problem before any interventions can be effective.

**acceptance and commitment therapy (ACT)** a form of COGNITIVE BEHAVIOR THERAPY based on the premise that ineffective verbal strategies to control one's thoughts and feelings actually lead to problem behaviors. It helps clients to abandon these restrictive strategies and instead experience and accept their difficult thoughts (conceived as just words put together in a certain way) and feelings as a necessary part of a worthy life. Clients then clarify their personal values and life goals, learn to make life-enhancing behavioral changes accordingly, and develop new and more flexible ways of thinking about and responding to challenges. ACT (pronounced *act*, not A-C-T) has been applied to a wide variety of problems, including depression, anxiety, stress, and substance abuse. It is based on the RELATIONAL FRAME THEORY of U.S. psychologist Steven C. Hayes (1948– ), proposing, among other concepts, that VERBAL BEHAVIOR is a contextually situated, learned ability to relate events arbitrarily; seen within ACT's framework, verbal behavior, once developed, can create relational rules so extensive that they restrict behavioral repertoires and thereby promote negative psychological outcomes for the individual.

**acceptance region** the range of values for a test statistic that leads to acceptance of the NULL HYPOTHESIS, such that the ALTERNATIVE HYPOTHESIS is rejected as a valid explanation for observed data. Compare CRITICAL REGION.

**acceptance sampling** a process in which a random sample is chosen from a larger group of items and used to make a decision about the quality of the items in that group. It is often used in commerce to test the quality of merchandise in a batch: A random sample from the batch is inspected and the results used to determine whether the batch as a whole meets desired standards or whether it fails to meet standards and should be rejected as defective. Also called **lot acceptance sampling**.

**acceptance stage** the last of the five STAGES OF GRIEF described by Elisabeth KÜBLER-ROSS. It is characterized by some degree of emotional detachment, objectivity, or resignation on the part of oneself or an important other to the reality of impending or actual death, other great loss, or trauma.

**acceptor** *n.* see ALLOCATOR.

**access** *vb.* to retrieve or recall a memory.

**accessibility** *n.* see ACCESSIBLE; AVAILABILITY.

**accessible** *adj.* **1.** receptive or responsive to personal interaction and other external stimuli. A client in psychotherapy, for example, is thought to be accessible if he or she responds to the therapist in a way that facilitates the development of rapport and, ultimately, fosters the examination of cognitive, emotional, and behavioral issues. **2.** retrievable through memory or other cognitive processes, as in ATTITUDE ACCESSIBILITY for example. **3.** of a building or other site and its facilities and fixtures: easy to approach, enter, or use, particularly by people with disabilities. **4.** in a tissue, reachable by means of standard surgical or diagnostic procedures. **5.** in a MARKOV CHAIN, describing a state *j* that there is a possibility of reaching from another state *i* in some number of steps. —**accessibility** *n.*

**accessory 1.** *adj.* ANCILLARY, supplemental, or contributory. **2.** *n.* a thing or person that is supplementary or subordinate.

**accessory nerve** the 11th CRANIAL NERVE, sometimes so named because one of its functions is that of serving as an accessory to the 10th cranial nerve (the VAGUS NERVE). It innervates the sternomastoid and trapezius muscles in the neck.

**accessory structure** in biology, a structure that assists or can take over the function of another (the primary) structure.

**accessory symptoms** see SECONDARY SYMPTOMS.

**accident** *n.* an unexpected or unintended event, especially one resulting in human injury or death, system damage, or system loss. —**accidental** *adj.*

**accidental chaining** learning, by REINFORCEMENT, a sequence of two or more actions that includes an act unnecessary to obtain reinforcement (see also CHAINING). This occurs as a result of accidental temporal conjunction between the unnecessary act and a stimulus circumstance that precedes a reinforced response.

**accidental group** any self-organizing group that comes into existence gradually as individuals find themselves repeatedly interacting with the same subset of individuals. Commuters who ride the same daily trains to and from work are an example. Such a group will not normally have the defined goals, procedures, and structures of a FORMAL GROUP.

**accidental hypothermia** see HYPOTHERMIA.

**accidental property** a characteristic of an idea or entity that is not essential to its nature or existence. For example, being musical is an accidental property of human beings, whereas being mortal is an ESSENTIAL PROPERTY.

**accidental reinforcement** the accidental occurrence of a REINFORCER after an act, which may inadvertently strengthen the likelihood of occurrence of that act. Superstitious behavior is often a result of accidental reinforcement. For example, a golfer might lean as a putt nears the hole. Such leaning has been followed in the past by the ball going in the hole (the reinforcer), so even though leaning has no causal effect on whether the ball goes in, the accidental contingent relationship between leaning and the ball being holed leads to reinforcement of leaning. Also called **adventitious reinforcement**.

**accidental sampling** see CONVENIENCE SAMPLING.

**accident analysis** a systematic process undertaken to determine the causes of an accident, with the goal of reducing the likelihood that such an accident will occur again. The most frequently used accident analysis methods include FAILURE MODES AND EFFECTS ANALYSIS and FAULT TREE ANALYSIS.

**accident behavior** behavior that could result in injury to the individual or other people or in physical damage to equipment or the environment. Such behavior may arise from personal factors, such as inattention or risk taking, but may also reflect situational factors, such as long work hours or poorly designed work systems. See ACCIDENT PREVENTION.

**accident-path model** a model used in accident analysis to illustrate the antecedents and causes of an accident using a chronological or otherwise ordered pattern. The

goal is to determine the types and extent of interventions necessary to prevent accidents.

**accident prevention** the use of scientifically tested methods to reduce the number and severity of accidents. These include the systematic study of accidents and the circumstances in which they occur (see ACCIDENT ANALYSIS); the identification and control of workplace hazards (see JOB-SAFETY ANALYSIS); the evaluation and redesign of systems and processes (see SAFETY ENGINEERING); and the use of training programs, instruction, and other forms of safety education.

**accident proneness** a chronic susceptibility to accidents. This concept has been heavily debated since its introduction around 1920, and many question the existence of a fixed accident-prone personality. However, several individual variables and sociological and situational factors have been identified as important predictors of accident involvement, including aggressiveness, impulsiveness, thrill and adventure seeking, workload and cognitive demand, and stress.

**accident reduction** see ACCIDENT PREVENTION.

**acclimatization** *n.* adjustment or adaptation to new circumstances or environmental conditions, particularly the physiological changes that improve an individual's ability to tolerate environmental alterations. Also called **acclimation**. —**acclimatize** *vb.*

**accommodation** *n.* **1.** adjustment or modification. For example, regarding individuals with disabilities, it refers to REASONABLE ACCOMMODATIONS made to meet their needs. In the context of bargaining and interpersonal negotiations, it refers to modification of the various parties' demands or actions in order to achieve agreement or a mutually beneficial outcome. **2.** the process by which the focus of the eye is changed to allow near or distant objects to form sharp images on the retina. Accommodation is achieved mainly by contraction or relaxation of the CILIARY MUSCLES, which exert tension on the ZONULES attached to the lens, but also involves adjustments in the CONVERGENCE of the eyes and the size of the pupils. **3.** see PIAGET-THAN THEORY. —**accommodate** *vb.*

**accommodation time** the time it takes for the eyes to focus on a visual stimulus following its presentation.

**accommodative coping** a stress-management strategy in which a person adjusts his or her preferences and orientations to suit given situational forces and constraints. Involving a devaluation of, or disengagement from, blocked goals and a lowering of personal performance standards and aspirations, accommodative coping thus represents a neutralization rather than an active solution of a particular problem. Accommodative processes generally appear following repeated unsuccessful attempts to change the situation through ASSIMILATIVE COPING. Additionally, accommodative processes are thought to be more prominent in later life, when individuals tend to experience an increasingly unfavorable balance of developmental gains and losses. [identified in 1990 by Jochen Brandtstädter and Gerolf Renner, German psychologists]

**accommodative insufficiency** a reduction in the efficiency of the eye's ability to change focus for objects at different distances (visual ACCOMMODATION), as evidenced primarily by blurring of near vision. It is usually caused by either dysfunction of the eye's CILIARY MUSCLES or by mid-brain injury.

**accommodative spasm** failure of the eye muscles involved in ACCOMMODATION to relax after focusing on near objects, resulting in transient myopia. Affecting one or both eyes, it is usually caused by an injury to the parasympathetic nervous system and can occur after head injury. The primary symptom is visual blurring at all distances, in many cases occurring over a period of months or even years.

**accomplishment quotient** see ACHIEVEMENT QUOTIENT.

**accountability** *n.* **1.** the extent to which an individual is answerable to another (e.g., a supervisor, official review body, a group of peers) for his or her behavior, decisions, or judgments. In groups, accountability is influenced by anonymity and the extent to which the contributions of each member of the group are clearly identifiable. **2.** in health care, the responsibility of individual providers, clinics, or hospitals to document their efforts, their resource utilization, and the outcome of their services and to report this information to insurance companies or state or federal agencies. —**accountable** *adj.*

**accreditation** *n.* the formal process in which an agency or organization evaluates and approves an institution or program of study as meeting predetermined standards. Accreditation applies to institutions as CERTIFICATION applies to individuals. —**accredited** *adj.*

**accretion** *n.* **1.** a form of learning resulting from the cumulative effect of repeated associations and reinforcements. **2.** the accumulation of objects or material in the environment, which may indicate the degree of individual responsibility of people who use a particular area. Littering is an example of accretion. Compare EROSION.

**acculturation** *n.* the processes by which groups or individuals adjust the social and cultural values, ideas, beliefs, and behavioral patterns of their culture of origin to those of a different culture. **Psychological acculturation** is an individual's attitudinal and behavioral adjustment to another culture, which typically varies with regard to degree and type. Compare DECULTURATION; ENCULTURATION. —**acculturate** *vb.*

**acculturation strategies** in CROSS-CULTURAL PSYCHOLOGY, a framework proposing four ways in which members of a nondominant group (e.g., immigrants, racial or ethnic minorities) may experience ACCULTURATION and manage their contact with and participation in the culture of a larger, dominant group. The **assimilation strategy** is one in which individuals do not wish to maintain their original cultural identity and prefer instead to seek daily interaction with the dominant group. By contrast, the **separation strategy** is one in which individuals hold onto their original culture and avoid interaction with the dominant group. A third strategy is **integration**, in which individuals maintain their original culture while still seeking to participate as an integral part of the larger social network. The fourth strategy, **marginalization**, describes an unwillingness or inability of individuals to identify with and participate in either their culture of origin or that of the dominant group. These strategies are partly determined by the extent to which the dominant group does or does not force a nondominant group to adapt to its cultural mandates or constraints (e.g., through DISCRIMINATION). [proposed by Canadian psychologist John W. Berry (1939– )]

**accumbens** *n.* see NUCLEUS ACCUMBENS.

**accumulated advantage** see MATTHEW EFFECT.

**accuracy** *n.* **1.** lack of error or BIAS in a measure; the more accurate the measure, the closer the measurement is to the TRUE SCORE for an individual. **2.** a measure of performance on a task, usually defined as the proportion of correct responses. **3.** more generally, exactness or freedom from error. See also PRECISION. —**accurate** *adj.*

**accuracy motive** see SELF-ASSESSMENT MOTIVE.

**accuracy standards** criteria used to assess the scientific value of the information and conclusions presented in an evaluation report. Such standards include ensuring the completeness of data collection and the reliability and validity of procedures and measures, conducting appropriate qualitative and quantitative analyses, and impartially reporting results to arrive at justified conclusions. See also FEASIBILITY STANDARDS; PROPRIETY STANDARDS; UTILITY STANDARDS.

**accusative** *n.* in linguistics, the CASE of a noun, pronoun, or noun phrase that forms the direct OBJECT of a clause or sentence. In English, unlike more inflected languages, only certain personal and possessive pronouns change their form when they appear in accusative position (so that English speakers say, for example, *She hit me* and not *She hit I*). Also called **objective**. Compare DATIVE; GENITIVE; NOMINATIVE.

**Accutane** *n.* a trade name for ISOTRETINOIN.

**acenesthesia** *n.* **1.** loss of the sensation of physical existence. **2.** a lack of awareness of one's own body. See DEPERSONALIZATION.

**ACEP** abbreviation for American Coaching Effectiveness Program. See AMERICAN SPORT EDUCATION PROGRAM.

**acetaldehyde** *n.* a toxic and volatile initial product of alcohol (ethanol) metabolism that is thought to be responsible for the ALCOHOL FLUSH REACTION and certain other physical sequelae of alcohol consumption, including unpleasant effects such as nausea, vomiting, and headache. Acetaldehyde is produced when alcohol is broken down by a liver enzyme called alcohol dehydrogenase. It is then broken down by another liver enzyme (acetaldehyde dehydrogenase) into acetate and, ultimately, into carbon dioxide and water. Acetaldehyde is also a major component of tobacco smoke. It may influence the development, progression, and persistence of alcohol use and of tobacco use. See also DISULFIRAM.

**acetaminophen** *n.* a common ANALGESIC and ANTIPYRETIC agent with an efficacy similar to aspirin, except that it does not possess antirheumatic or anti-inflammatory properties. It is rapidly distributed in the body and has a short HALF-LIFE (around 2 hours). Acetaminophen is a widely used alternative to aspirin, especially when usage of the latter is inadvisable (e.g., in patients with bleeding disorders). It is also sold in combination with other analgesics, antihistamines, decongestants, or cough suppressants. However, acute overdose or chronic daily dosing of acetaminophen may cause liver damage (hepatotoxicity), and consumption of alcohol increases the risk of liver damage. Rapid intervention, including the administration of N-acetylcysteine, is required to prevent fatal hepatotoxicity after acetaminophen poisoning. Also called **APAP**; **paracetamol**. U.S. trade name (among others): **Tylenol**.

**acetanilide** *n.* see ANILIDE.

**acetazolamide** *n.* see CARBONIC ANHYDRASE INHIBITOR.

**acetone** *n.* a colorless volatile liquid with a sweet, fruity

odor that forms in excessive amounts in the blood of people with diabetes or other metabolic disorders in which the body uses fat instead of glucose (sugar) for energy. Also called **dimethyl ketone**.

**acetylcholine (ACh)** *n.* a major, predominantly excitatory but also inhibitory, neurotransmitter both in the central nervous system, where it plays an important role in memory formation and learning and is implicated in Alzheimer's disease, and in the peripheral nervous system, where it mediates skeletal, cardiac, and smooth muscle contraction and is implicated in myasthenia gravis and other movement disorders.

**acetylcholine receptor (AChR)** any of the protein molecules in cell membranes in the central and peripheral nervous systems that are stimulated by acetylcholine or acetylcholine-like substances. There are two main types: MUSCARINIC RECEPTORS and NICOTINIC RECEPTORS.

**acetylcholinesterase (AChE)** *n.* see CHOLINESTERASE.

**acetylcholinesterase inhibitor (AChEI)** see CHOLINESTERASE.

**acetylsalicylic acid (ASA)** the chemical name for ASPIRIN.

**acetylurea** *n.* any of a group of drugs that are analogs of HYDANTOINS used in the treatment of partial seizures.

**ACh** abbreviation for ACETYLCHOLINE.

**AChE** abbreviation for acetylcholinesterase. See CHOLINESTERASE.

**AChEI** abbreviation for acetylcholinesterase inhibitor. See CHOLINESTERASE.

**acheiria (achiria)** *n.* **1.** the condition of being born with only one or no hands. See also APODIA. **2.** a disorder of sensation in which an individual cannot tell which side of the body is being touched. It is considered a DYSCHIEIRIA.

**achieved status** social standing and prestige acquired by means of one's personal accomplishments.

**achievement** *n.* **1.** the attainment of some goal, or the goal attained. See also NEED FOR ACHIEVEMENT. **2.** acquired knowledge (especially in a particular subject), proficiency, or skill. The term is most often used in this sense to mean ACADEMIC ACHIEVEMENT.

**achievement age (AA)** the achievement rating of an individual as measured in terms of the norm or standard for a particular CHRONOLOGICAL AGE.

**achievement battery** any group of ACHIEVEMENT TESTS designed to provide an index of a person's knowledge or specific physical or mental skills across a range of related topics.

**achievement ethic** a personal or cultural standard that requires a high level of accomplishment in both work and leisure activities. See also WORK ETHIC.

**achievement goal theory** a conceptualization of motivation that identifies two types of achievement goals, task-oriented (see TASK ORIENTATION) and ego-oriented (see EGO ORIENTATION), and that relates these to differences in individuals' perceived ability for the task and their achievement behavior. This theory emerged from the work of educational psychologists and subsequently was modified for use in sport psychology as well.

**achievement level 1.** the degree of proficiency attained in academic work in general or in a specific scholastic skill,

such as arithmetic. **2.** an evaluation of individual or group performance on a task or activity (e.g., a chess match or athletic event), particularly following training.

**achievement measures** tasks, instruments, or systems designed to demonstrate a student's level of proficiency and to ascertain the value, strength, or quality of performance by comparison with a peer standard.

**achievement motivation** **1.** the desire to perform well and be successful. In this sense, the term often is used synonymously with NEED FOR ACHIEVEMENT. **2.** the desire to overcome obstacles and master difficult challenges. High scorers in achievement motivation are likely to set higher standards and work with greater perseverance than equally gifted low scorers. David MCCLELLAND found a significant relationship between high achievement motivation and early independence in childhood; in addition, there is a positive correlation between high achievement motivation and actual achievement in later life. [first described by Henry Alexander MURRAY]

**achievement-oriented leadership** in the PATH-GOAL THEORY OF LEADERSHIP, a style in which the leader encourages excellent performance and continuous improvement by showing a high degree of confidence in followers and setting challenging goals.

**achievement potential** **1.** the capacity of a person to develop certain skills or traits in order to attain a certain projected level of proficiency. **2.** academic skills or abilities that may develop over time through education and practice.

**achievement quotient (AQ)** a measure obtained by dividing an individual's results on an achievement test (i.e., the actual performance) by the results expected based on the person's capacity (i.e., the potential performance, as assessed by an intelligence test). The achievement quotient formerly was called the **accomplishment quotient**.

**achievement test** any norm-referenced standardized test intended to measure an individual's current level of skill or knowledge in a given subject. Often the distinction is made that achievement tests emphasize ability acquired through formal learning or training, whereas APTITUDE TESTS (usually in the form of intelligence tests) emphasize innate potential.

**achiever** *n.* a person who is able to accomplish some action or desired result.

**achieving stage** see SCHAIE'S STAGES OF COGNITIVE DEVELOPMENT.

**achiria** *n.* see ACHEIRIA.

**achondroplasia** *n.* a form of autosomal dominant DWARFISM in which the bones derived from cartilage develop at a slower rate than the bones derived from connective tissue. This results in an enlarged cranial vault and abnormally high forehead. Motor development of infants with this disorder may be slow, but in most cases intelligence is normal. Also called **achondroplastic dwarfism**. —**achondroplastic** *adj.*

**AChR** abbreviation for ACETYLCHOLINE RECEPTOR.

**achromatic** *adj.* **1.** without HUE and SATURATION. Thus, an **achromatic color** is black, white, or a shade of gray. **2.** able to refract light without splitting it into its constituent wavelengths. The term generally refers to lenses that do not distort the color of objects viewed through them. Compare CHROMATIC.

**achromatic–chromatic scale** a scale of color values ranging through the CHROMATIC spectrum of hues and including the ACHROMATIC shades of black through gray to white.

**achromatic interval** in vision, the interval of light intensity between the amount required for detection of a monochromatic stimulus and the amount required to perceive the color of the stimulus.

**achromatism** *n.* color blindness marked by the inability to perceive any color whatsoever: Everything is seen in different shades of gray. It is a congenital condition stemming from a lack of RETINAL CONES. When acquired as a result of brain injury, it is called **cerebral achromatopsia**; the typical site of injury is the ventromedial occipital cortex of the brain (see V4). Also called **achromatopsia**. See also DICHROMATISM; MONOCHROMATISM; TRICHROMATISM.

**acid** **1.** *adj.* denoting one of the four primary odor qualities in the CROCKER–HENDERSON ODOR SYSTEM. **2.** *n.* a common colloquial term for LSD. See also HALLUCINOGEN.

**acid flashback** a common colloquial term for the experience reported by some users of LSD in which part of the experience recurs later when the individual has not been using the drug.

**acidosis** *n.* an abnormally high level of acidity (hydrogen ion concentration) in the blood and tissues, which upsets the body's acid–base balance. The condition has numerous causes and symptoms vary with each, potentially including such neurological abnormalities as confusion, fatigue or lethargy, and irritability. Rapid breathing is often seen as well. Compare ALKALOSIS. —**acidotic** *adj.*

**acid trip** see TRIP.

**acmesthesia** *n.* a form of PARESTHESIA in which a cutaneous stimulus normally sensed as pain is perceived instead as sharp touch or pressure.

**ACoA** abbreviation for ANTERIOR COMMUNICATING ARTERY.

**ACOA** abbreviation for ADULT CHILDREN OF ALCOHOLICS.

**ACoMA** abbreviation for ANTERIOR COMMUNICATING ARTERY.

**aconuresis** *n.* involuntary passage of urine. It is a rare synonym of ENURESIS.

**acoria** (**akoria**) *n.* a form of POLYPHAGIA marked by an excessive appetite and a loss of the sensation of satiety. See also BULIMIA NERVOSA.

**Acosta's syndrome** see ALTITUDE SICKNESS. [José de Acosta (1539–1600), Spanish geographer]

**acoustic** *adj.* associated with sound. The word is usually used to modify technical terms (e.g., acoustic wave, acoustic impedance, ACOUSTIC REFLEX). **Acoustical** is used as a modifier in all other contexts (e.g., acoustical engineer).

**Acoustical Society of America (ASA)** the major professional organization concerned with acoustics in the United States. The society consists of many technical areas, including psychological and physiological acoustics, speech communication, and musical acoustics. The ASA is part of the American Institute of Physics and publishes the *Journal of the Acoustical Society of America (JASA)*.

**acoustic cue** in phonology, one of the physical properties of a speech sound (e.g., wave frequency, VOICE-ONSET TIME, intensity) that mark its identity.

**acoustic encoding** see VISUAL ENCODING.

**acoustic environments** the acoustic or sound-propagating qualities of a physical environment. In addition to sound intensity (i.e., loudness), an important feature of acoustic environments is reverberation time: the time taken for a sound to decay 60 dB. Perception of sound inside differs from that outside because of reverberation.

**acoustic filter** a component of some versions of the WORKING MEMORY model that allows only speechlike stimuli to access the model's phonological store.

**acoustic-mnestic aphasia** a form of APHASIA resulting from lesions in the left TEMPORAL LOBE. It is marked by difficulty in remembering verbal material, particularly in recalling word lists and reproducing long sentences. Also called **acoustic–amnestic aphasia**.

**acoustic nerve** see AUDITORY NERVE.

**acoustic neuroma** a benign tumor arising from the AUDITORY NERVE, between the cochlea and the brainstem. Common symptoms include tinnitus, unilateral hearing loss, and vertigo.

**acoustic phonetics** the branch of PHONETICS that studies the physical properties of human speech sounds and the physiological means by which they are perceived. Compare ARTICULATORY PHONETICS.

**acoustic pressure** see SOUND PRESSURE.

**acoustic reflex** contraction of the middle ear muscles (the TENSOR TYMPANI and STAPEDIUS MUSCLE) elicited by intense sounds. This reflex restricts movement of the OSSICLES, thus reducing the sound energy transmitted to the inner ear and partially protecting it from damage.

**acoustic resonance** a frequency-dependent change in the response of an acoustic system. The response of a system is a maximum at its **resonance frequency**.

**acoustics** *n.* the science of sound; a branch of physics concerned with the study of sound, including its physical properties, production, transmission, and reception. See also BIOACOUSTICS; PSYCHOACOUSTICS.

**acoustics as emotions** acoustic patterns that are specific to particular emotions and therefore enable recognition of emotion in speech. These acoustic properties are measured by FORMANT analysis, spectral analysis, intonation scoring, and inverse filtering of the speech signal to arrive at an estimate of the glottal waveform.

**acoustic spectrum** see SOUND SPECTRUM.

**acoustic store** **1.** a component of short-term memory that retains auditory information based on how items sound. Forgetting occurs when words or letters in acoustic store sound alike. Compare ARTICULATORY STORE. **2.** see PHONOLOGICAL LOOP.

**acoustic trauma** physical injury to the inner ear resulting from exposure to intense noise, such as explosions, or continuous prolonged loud music or machinery noise. It is a common cause of SENSORINEURAL DEAFNESS.

**ACPT** abbreviation for AUDITORY CONTINUOUS PERFORMANCE TEST.

**acquaintance rape** see DATE RAPE.

**acquiescence** *n.* agreement or acceptance, typically without protest or argument. —**acquiesce** *vb.* —**acquiescent** *adj.*

**acquiescent response set** see YEA-SAYING.

**acquired** *adj.* denoting a response, behavior, idea, or information that has been learned or developed on the basis of specific forms of experience.

**acquired characteristic** a structural or functional characteristic or a psychological feature (e.g., a trait or behavior) of an organism that arises from experience or through interactions with the environment rather than resulting primarily from genetic factors. Also called **acquired character**.

**acquired color blindness** defective color vision that develops in a person with previously normal vision. Acquired forms of color blindness can be caused by retinal disease (e.g., glaucoma, retinitis pigmentosa), optic nerve disease (e.g., in multiple sclerosis), or injury to areas of the occipitotemporal cortex that are responsible for color processing, as in cerebral achromatopsia (see ACHROMATISM) and HEMIACHROMATOPSIA. Systemic disorders (e.g., diabetes mellitus), ANOXIA, and many toxins (e.g., alcohol) can also produce color deficiencies. Acquired color blindness often differs from genetic forms of the condition (see COLOR BLINDNESS). The discrimination of colors may be impaired in all parts of the spectrum, and the patient may have difficulty in identifying desaturated colors. Color blindness is typically present in the entire visual field, but that due to cerebral injury may be limited to the left or right half of the visual field.

**acquired distinctiveness of cues** prior learning about certain stimulus features in one situation that may facilitate learning to respond to the same stimulus features in another situation. For example, learning to sort balls based on color rather than shape or size may facilitate learning to sort wood blocks based on color rather than shape or size.

**acquired drive** see SECONDARY DRIVE.

**acquired dyslexia** see DYSLEXIA.

**acquired dyspraxia** DYSPRAXIA manifested as the loss of a previously acquired ability to perform coordinated movements. It usually follows or is associated with brain injury or stroke. Compare DEVELOPMENTAL DYSPRAXIA.

**acquired immune deficiency syndrome** see AIDS.

**acquired response** a response that has been learned, such as a classically conditioned or an instrumentally reinforced response. Also called **learned response**.

**acquired speech disorder** a speech disorder that develops at some time after birth, which may be manifested as the loss of a previously acquired ability to produce articulate speech.

**acquired visual impairment** see ADVENTITIOUS VISUAL IMPAIRMENT.

**acquisition** *n.* the attainment by an individual of new behavior, information, or skills or the process by which this occurs. Although often used interchangeably with LEARNING, acquisition tends to be defined somewhat more concretely as the period during which progressive, measurable changes in a response are seen. —**acquire** *vb.*

**acquisition curve** see LEARNING CURVE.

**acquisition trial** see LEARNING TRIAL.

**acquisitiveness** *n.* the tendency or desire to acquire



and accumulate objects or possessions. Compare HOARDING. —**acquisitive** *adj.*

**acquisitive stage** see SCHAIER'S STAGES OF COGNITIVE DEVELOPMENT.

**acro-** *combining form* **1.** the extremities (e.g., ACROMEGALY). **2.** height (e.g., ACROPHOBIA).

**acroanesthesia** *n.* an absence of sensitivity in one or more extremities.

**acrocentric chromosome** a chromosome in which the CENTROMERE is near one end, making one arm of the replicating chromosome shorter than the other. An acrocentric chromosome may be much smaller than others and may occur as additional genetic material in such disorders as CAT'S-EYE SYNDROME.

**acrocephalopolysyndactyly** *n.* see CARPENTER'S SYNDROME.

**acrocephalosyndactyly** *n.* any of several related inherited disorders (all dominant traits) that cause abnormalities of the skull, face, hands, and feet. APERT SYNDROME, Apert–Crouzon syndrome, and PFEIFFER'S SYNDROME (acrocephalosyndactyly Types I, II, and V) are due to different mutations in the *FGFR2* gene (encoding fibroblast growth factor receptor) on chromosome 10. CHOTZEN'S SYNDROME (Type III) is due to a mutation in the  *Twist*  gene on chromosome 7 (locus 7p21.3–21.2), which affects the expression of *FGFR2*.

**acrocephaly** *n.* see OXYCEPHALY.

**acrocinesia** *n.* excessive motion or movement. Also called **acrocinesia**; **acrokinesia**.

**acro dysostosis** *n.* see PERIPHERAL DYSOSTOSIS WITH NASAL HYPOPLASIA.

**acroesthesia** *n.* an increased sensitivity to stimuli applied to the extremities.

**acromegaly** *n.* an abnormal enlargement of the bones in the hands, feet, face, and skull due to excessive secretion of growth hormone by the pituitary gland during adulthood. —**acromegalic** *adj.*

**acromicria** *n.* a type of underdevelopment marked by abnormally small fingers, toes, or facial features.

**acroparesthesia** *n.* a feeling of numbness, tingling, or other abnormal sensation in one or more extremities. Kinds of acroparesthesia include **Nothnagel's acroparesthesia**, which is accompanied by circulatory disorders, and **Schultze's acroparesthesia**, marked by peripheral-nerve irritability but without circulatory abnormalities.

**acrophobia** *n.* an excessive, irrational fear of heights, resulting in the avoidance of elevations or marked distress when unable to avoid high places. —**acrophobic** *adj.*

**acrotomophilia** *n.* a PARAPHILIA in which a person is sexually aroused by people whose body parts, typically arms or legs, have been amputated or by amputation sites in the body. Also called **acrotophilia**. Compare APOTEMNOPHILIA.

**ACSI** abbreviation for ATHLETIC COPING SKILLS INVENTORY.

**ACSM** abbreviation for AMERICAN COLLEGE OF SPORTS MEDICINE.

**ACSW** abbreviation for ACADEMY OF CERTIFIED SOCIAL WORKERS.

**act** *n.* a complex behavior, as distinct from a simple MOVEMENT.

**ACT 1.** abbreviation for ACCEPTANCE AND COMMITMENT THERAPY. **2.** abbreviation for ATROPINE-COMA THERAPY. **3.** abbreviation for ATTENTION-CONTROL TRAINING. **4.** abbreviation for AUDITORY CONSONANT TRIGRAM.

**ACT\*** acronym (pronounced act-star) for *adaptive control of thought theory*, in revised form. ACT\* is a theory of the mental representation of knowledge and of skilled behaviors that implement knowledge. [formulated by U.S. cognitive psychologist John R. Anderson (1947– )]

**ACT Assessment** American College Testing Assessment: a set of four multiple-choice academic college tests (English, mathematics, reading, science) administered nationwide five times yearly; an optional, supplemental essay writing test may also be given. The assessment consists of 215 total questions intended to evaluate the participant's overall academic achievement and mastery of the basic skills required for satisfactory performance in college, rather than the person's aptitude or intelligence. The ACT Assessment is one of four major components of the **American College Testing Program (ACTP)**, a system for gathering data about students and providing it to designated educational institutions.

**ACTH** abbreviation for adrenocorticotrophic hormone. See CORTICOTROPIN.

**ACTH-releasing factor** see CORTICOTROPIN-RELEASING FACTOR.

**actin** *n.* see MUSCLE FIBER.

**acting in** in psychoanalysis, a form of RESISTANCE, occurring within the therapy hour, in which the patient defends against repressed wishes, memories, or both by using actions (e.g., getting up and walking about) to impede the flow of FREE ASSOCIATION.

**acting out 1.** the behavioral expression of emotions that serves to relieve tension associated with these emotions or to communicate them in a disguised, or indirect, way to others. Such behaviors may include arguing, fighting, stealing, threatening, or throwing tantrums. **2.** in psychoanalytic theory, reenactment of past events as an expression of unconscious emotional conflicts, feelings, or desires—often sexual or aggressive—with no conscious awareness of the origin or meaning of these behaviors.

**action** *n.* **1.** a self-initiated sequence of movements, usually with respect to some goal. It may consist of an integrated set of component behaviors as opposed to a single response. **2.** the occurrence or performance of a process or function (e.g., the action of an enzyme). **3.** the state or process of being active.

**actional verb** in linguistics, a verb that denotes physical action, usually performed by an AGENT and resulting in an effect on a PATIENT, such as *kick* or *kiss*. A **nonactional verb** is one that denotes an occurrence, experience, state, or condition, such as *be*, *have*, *see*, *think*, or *explain*. Some psychologists believe that the distinction between actional and nonactional verbs is significant in explaining patterns of early language development. See also CAUSATIVE VERB.

**action at a distance** the interaction of bodies that are not in physical contact and have no intervening mechanical medium, as by a field of force, such as gravitation. See FIELD THEORY.

**action-based model** a version of COGNITIVE DISSO-

NANCE THEORY postulating that the existence of inconsistency, even in the absence of aversive consequences, is sufficient to produce cognitive dissonance. It further postulates that inconsistency is unpleasant because it is adaptive to have clear action tendencies (i.e., approach vs. avoidance tendencies) toward objects in the environment. See also NEW-LOOK THEORY; SELF-CONSISTENCY PERSPECTIVE; SELF-STANDARDS MODEL. [proposed by U.S. psychologist Eddie Harmon-Jones]

**action disorganization syndrome (ADS)** a cognitive deficit resulting from damage to the FRONTAL LOBES of the brain and causing individuals to make errors on multistep but familiar or routine tasks. Types of errors include omissions or additions of steps, disordered sequencing of steps, and object substitutions or misuse.

**action group** a TASK-ORIENTED GROUP whose purpose is to achieve a modification of the environment. For example, a residential care facility may convene an action group to implement changes to its practices that help improve mealtime nutrition for residents.

**action identification** the way in which specific behaviors, ranging from low-level muscle movements to high-level, abstract goal pursuits, are construed. For example, the behavior of pressing a key on a keyboard could be construed as *I am pressing a key*, *I am typing*, or *I am writing a novel*. [introduced in 1985 by Robin R. Vallacher, U.S. psychologist, and Daniel M. Wegner (1948– ), Canadian-born U.S. psychologist]

**action orientation** a style of responding to dilemmas or conflicts that is characterized by swift, decisive action to achieve mental and behavioral change. Action orientation has been suggested as a key moderator of COGNITIVE CONTROL under demanding conditions, such that action-oriented individuals are better able to exert control under high demands than are individuals with a STATE ORIENTATION.

**action-oriented therapy** any therapy that emphasizes doing and taking action rather than verbal communication or discussion.

**action painting** a form of painting, often used in ART THERAPY, in which individuals spontaneously create unplanned abstract works using unconventional techniques, such as splashing, dribbling, trickling, or slapping the paint more or less randomly onto the canvas. When used therapeutically, these productions are reviewed and incorporated into treatment. Also called **tachisme**.

**action pattern** a predictable behavioral sequence that is elicited by certain requisite stimuli. For example, during the mating season, a male fish aggressively defends its territory against other males. See also FIXED ACTION PATTERN.

**action potential (AP)** the change in electric potential that propagates along the axon of a neuron during the transmission of a nerve impulse or the contraction of a muscle. It is marked by a rapid, transient DEPOLARIZATION of the cell's plasma membrane, from a RESTING POTENTIAL of about  $-70$  mV (inside negative) to about  $+30$  mV (inside positive), and back again, after a slight HYPERPOLARIZATION, to the resting potential. Each action potential takes just a few milliseconds. Also called **spike potential**.

**action readiness** a state of preparedness for action that is elicited as part of an emotional response and associated with such physiological indicators as changes in heart rate, respiratory rate, and muscle tension. The term is often used

synonymously with ACTION TENDENCY but also refers to a general readiness for action that does not involve an urge to carry out a specific behavior.

**action research 1.** as originally defined in the mid-1940s by Kurt LEWIN, research developed and carried out to address a social issue or problem, results of which are used to improve the situation. Exploring the most effective way to respond to prejudiced comments is an example of action research, as is investigating interventions to reduce the incidence and consequences of domestic violence. **2.** more generally, any research directed toward a practical goal, usually an improvement in a particular process or system. In ORGANIZATIONAL DEVELOPMENT, for example, action research involves not only systematically collecting data about an organization but also providing feedback to the organization, taking actions to improve the organization based on the feedback, and then evaluating the results of these actions.

**action slip** any error that involves some kind of cognitive lapse and results in an unintended action, as in putting one's spectacles in the refrigerator. Action slips are commonly identified as mistakes due to ABSENT-MINDEDNESS.

**action-specific energy** in classical ETHOLOGY, a hypothetical supply of motivational energy within an organism that is associated with specific unlearned behavioral responses known as FIXED ACTION PATTERNS. Each response has its own energy supply, which builds up until the organism encounters the appropriate stimulus (see RELEASER) that triggers the response and thus depletes the energy supply. After the response and in the absence of the releaser, the action-specific energy begins to build up again. [proposed by Konrad LORENZ]

**action stream** see DORSAL STREAM.

**action teaching** the use of classroom activities, field work, Internet-based demonstrations, and other assignments to construct engaging learning environments that integrate coursework with societal issues. Similar to ACTION RESEARCH but in an educational context, action teaching turns textbook lessons into interactive experiences in which students learn not only topical information but also ways to address important social problems. Examples of this teaching method include an exercise in which students from an introductory psychology class learn about persuasion by using different strategies to solicit donations from community residents for a particular charitable organization or cause, and an exercise in which students from a research methods class learn about experimental design by creating and conducting their own study on the reasons many commuters do not take public transportation to work. [coined in 2000 by U.S. social psychologist Scott L. Plous (1959– )]

**action tendency** an urge to carry out certain expressive or instrumental behaviors that is linked to a specific emotion. For example, the action tendency of fear involves an urge to escape, and that of anger involves an urge to attack. Some theorists argue that the action tendency of an emotional reaction should be regarded as its essential defining characteristic. Compare ACTION READINESS.

**action theory** all those theories, collectively, that explain behavior in terms of goal-directed human beings acting intentionally with reference to the environment and present situation. Action theory was known originally as **will psychology**, founded in Germany by Wilhelm WUNDT,

who emphasized and distinguished between motivation and volition of human behavior.

**action tremor** trembling of a body part that arises when the individual is engaged in directed voluntary activity and that increases as the movement progresses. Action tremors are classified into the following subtypes: **Postural tremor** occurs when the person maintains a position against gravity, such as holding the arms outstretched; **kinetic tremor** appears during movement of a body part, such as moving the wrists up and down; **intention tremor** is the trembling of a body part that arises near the conclusion of a directed, voluntary movement, such as touching a finger to one's nose; **task-specific tremor** appears during the performance of highly skilled, goal-oriented tasks such as handwriting; and **isometric tremor** occurs during a voluntary muscle contraction that is not accompanied by any other movement. Compare **RESTING TREMOR**.

**action unit** the simplest facial movement used as a code in the **FACIAL ACTION CODING SYSTEM**. Action units are the visible signs of the operation of single facial muscles.

**Actiq** *n.* a trade name for **FENTANYL**.

**activating event** in **RATIONAL EMOTIVE BEHAVIOR THERAPY**, an event—current, past, or anticipated—that triggers irrational beliefs and disruptive emotions.

**activation** *n.* **1.** in many theories of memory, an attribute of the representational units (such as **NODES** or **LOGOGENS**) that varies from weaker to stronger, with more strongly activated representations competing to control processing. **2.** the process of alerting an organ or body system for action, particularly arousal of one organ or system by another. An example is the pituitary gland's release of hormones that activate the ovaries and testes for puberty. —**activate** *vb.* —**activational** *adj.*

**activational effect** a transient hormonal effect that typically causes a short-term change in behavior or physiological activity in adult animals. For example, increased testosterone in male songbirds in spring leads to increased aggression in territory defense and increased courtship behavior. Compare **ORGANIZATIONAL EFFECT**.

**activation-arousal theory** see **ACTIVATION THEORY OF EMOTION**.

**activation-elaboration** a dual-process theory of memory holding that concepts stored in memory vary in their levels both of **ACTIVATION** and **ELABORATION**.

**activation hypothesis** **1.** the idea that numerical weightings assigned to the links or nodes of cognitive network models can represent their degree of activity or processing. Consciousness is sometimes attributed to above-threshold numbers in such models. **2.** the hypothesis that high metabolic activity reflects activation of brain areas subserving mental tasks.

**activation pattern** in electroencephalography, the suppression of **ALPHA WAVES** and a shift to low-voltage, rapid activity when the person undergoing the procedure opens his or her eyes to view an object or display. The alpha desynchronization may be localized or general, as measured in various cerebral areas, and transient or sustained.

**activation-synthesis hypothesis** a hypothesis that explains dreams as a product of cortical interpretation of random neural activity rising from the brainstem (specifically the **PONS**). It has been superseded by the **AIM MODEL**.

See **PGO SPIKES**. [originated by U.S. psychiatrists J. Allan Hobson (1933– ) and Robert W. McCarley (1937– )]

**activation theory of emotion** the theory that emotion is measurable as change in the individual's level of neural excitation of the **RETICULAR FORMATION** and associated degree of cortical and thalamic alertness, as revealed via electroencephalography. It is a refinement of an earlier **activation-arousal theory** equating emotion to change in the difficult-to-measure level of an individual's energy expenditure. Also called **arousal theory**.

**active** *adj.* **1.** currently performing some action, either continuously or intermittently. **2.** exerting an effect or influence on a process or thing. **3.** in grammar, denoting the **ACTIVE VOICE** of a verb. **4.** vigorous, lively, or energetic.

**active analytic psychotherapy** the therapeutic approach of Viennese psychoanalyst Wilhelm Stekel (1868–1940) in which the analyst takes a much more active role than prescribed in **CLASSICAL PSYCHOANALYSIS** and gives more attention to intrapsychic conflicts in the patient's current life than to exploring early childhood experiences. The therapist intervenes in the process of free association to discuss important issues, confronts the patient's resistances directly, offers advice and exhortation, and helps the patient interpret his or her dreams intuitively in the light of current attitudes and problems. Through these methods, and by avoiding many of the Freudian steps such as **ANALYSIS OF TRANSFERENCE**, Stekel sought to shorten the therapeutic process considerably. Also called **active analysis**.

**active attention** see **SECONDARY ATTENTION**.

**active avoidance** a type of **OPERANT CONDITIONING** in which an explicit act prevents or postpones the delivery of an **AVERSIVE STIMULUS**, as when pressing a lever blocks the delivery of an electric shock. That is, avoidance is achieved by an overt action. Compare **PASSIVE AVOIDANCE**.

**active concretization** in schizophrenia, the process of transforming abstract concepts into concrete representations or forms. For example, an individual with paranoid schizophrenia who experiences feelings that the whole world is hostile may later become convinced that the neighbors are trying to harm him or her. If this individual should then begin to have specific perceptual experiences that support this conviction, such as auditory hallucinations of threatening remarks made by the neighbors, **PERCEPTUALIZATION** of the concept has occurred; this is the most advanced level of active concretization. [defined by Italian-born U.S. psychiatrist Silvano Arieti (1914–1982)]

**active control trial** a two-group experimental design in which one group receives the treatment under study and the second group receives a comparable standard treatment. Although efficacy generally is best evaluated by comparing a treatment to a **PLACEBO**, active control trials are used in situations when withholding treatment from individuals by assigning them to a placebo group is not ethical. Compare **PLACEBO CONTROLLED TRIAL**.

**active coping** a stress-management strategy in which a person directly works to control a stressor through appropriately targeted behavior, embracing responsibility for resolving the situation using one's available internal resources. This type of **COPING STRATEGY** may take various forms, such as changing established habits. Active coping generally is considered adaptive, having been associated with fewer mood disturbances, enhanced **SELF-EFFICACY**, and other favorable consequences. It is similar to the ear-

lier conceptualization of PROBLEM-FOCUSED COPING but distinguished by its focus upon one's internal resources. Compare PASSIVE COPING. [identified in 1987 by Gregory K. Brown and Perry M. Nicassio (1947– ), U.S. clinical psychologists]

**active deception** intentionally misleading research participants by giving them false information in order to get more valid results. For example, a researcher might present participants with incorrect correlations between gender and performance in different academic subject areas before testing whether such hypothetical statistics affect subsequent performance on different achievement tests. Compare PASSIVE DECEPTION. See DECEPTION RESEARCH.

**active euthanasia** direct action performed to terminate the life of a person (or animal) who is suffering greatly and is considered to have no chance for recovery. Administering a lethal injection is the most common method of active euthanasia today. This practice is distinguished from PASSIVE EUTHANASIA, in which treatments are withheld but no direct action to terminate the life is taken. See also ASSISTED DEATH; SLOW EUTHANASIA.

**active intermodal mapping (AIM)** the ability of young infants to integrate information from two or more senses and understand the symbolic relationship between the actions of others and the movement of their own body parts. This cognitive ability to translate between “seeing” and “doing” is thought to underlie NEONATAL IMITATION. [postulated by U.S. psychologists Andrew N. Meltzoff (1950– ) and M. Keith Moore]

**active joy** see JOY.

**active learning** 1. learning that occurs through the actual performance of behavior or acting out of an idea. 2. the active seeking out of new information, rather than simply being a passive recipient of a learning experience. Active learners set goals, select strategies, recognize when they understand, and work with others to further learning.

**active listening** a psychotherapeutic technique in which the therapist listens to a client closely, asking questions as needed, in order to fully understand the content of the message and the depth of the client's emotion. The therapist typically restates what has been said to ensure accurate understanding. Active listening is particularly associated with CLIENT-CENTERED THERAPY.

**active memory** a memory that is currently the focus of consciousness or was recently in awareness, as distinct from the vast body of stored memories that are currently inactive. Activation occurs through RETRIEVAL. According to one theory, an item in short-term or working memory is an item from long-term memory that has been activated.

**active negativism** see NEGATIVISM.

**active noise cancellation** a method of controlling noise levels that involves the production of sound signals to cancel other sounds. Compare ACTIVE NOISE REDUCTION.

**active noise protection (ANP)** any method of protecting people from unwanted or excessive noise based upon ACTIVE NOISE CANCELLATION or ACTIVE NOISE REDUCTION, as opposed to **passive noise protection**, which involves the use of simple barrier methods, such as earplugs.

**active noise reduction (ANR)** a method of noise reduction that makes use of sound absorbers or decouplers. Compare ACTIVE NOISE CANCELLATION.

**active performance** the actual performance of behavior

or acting out an idea, in contrast to mentally rehearsing or imagining the action.

**active placebo** an agent used in double-BLIND controlled trials of pharmacological products that has no therapeutic effect but—unlike a completely inert DUMMY placebo—may produce side effects characteristic of the drug under investigation. Active placebos are therefore considered by some to be more likely to reveal true differences in drug–placebo responding.

**active recreation** a form of RECREATIONAL THERAPY in which the individual is an active participant in an activity, such as dancing or playing Scrabble, that requires physical or mental exertion. Compare PASSIVE RECREATION.

**active rehearsal** see CUMULATIVE REHEARSAL.

**active therapy** any form of psychotherapy in which the therapist assumes an active, directive role. An **active therapist** may express opinions, offer interpretations, make suggestions and recommendations, give advice about the client's actions and decisions, issue injunctions and prohibitions, or urge the client to take a particular action, such as facing an anxiety-provoking situation directly.

**active touch** touch perception of the characteristics of an object through voluntary, intentional contact movement (especially by the hands) that is self-initiated. Compare PASSIVE TOUCH. See also HAPTIC.

**active transport** the movement of ions or molecules across a cell membrane by a mechanism that requires energy. The movement may depend on a special affinity between ions, a metabolic reaction, or another energy-consuming process. Active transport is involved in the movement of sodium and potassium ions across the membrane of a nerve cell. Compare PASSIVE TRANSPORT.

**active vocabulary** see PRODUCTIVE VOCABULARY.

**active voice** in linguistics, the category of a verb in which the grammatical SUBJECT of the clause or sentence is the AGENT of the action and the grammatical OBJECT is its PATIENT. The great majority of English sentences are constructed using the active voice. The active voice is illustrated by the sentence *The thief stole the purse*, as opposed to *The purse was stolen by the thief*. Compare PASSIVE VOICE.

**activism** *n.* 1. the practice of taking committed action to achieve an end, particularly as it relates to a political or social goal. See also COMMUNITY ACTION GROUP; SOCIAL ACTION PROGRAM. 2. in philosophy, the doctrine that any relationship between thought and reality is characterized by continuous activity on the part of the mind, rather than passive receptivity. —**activist** *adj., n.*

**activities, interests, opinions (AIO)** see PSYCHOGRAPHICS.

**activities of daily living (ADLs)** activities essential to an individual's personal care, such as getting into and out of bed and chairs, dressing, eating, toileting and bathing, and grooming. A person's ability to perform ADLs is often used as a measure of functional capabilities during the course of a disease or following an injury. See also INSTRUMENTAL ACTIVITIES OF DAILY LIVING.

**activity analysis** the objective evaluation of an individual's behavior during a specified period, usually by breaking it down into smaller components, such as eating, working, social activities, resting, and so on.

**activity cage** an enclosed space in which animals move

freely while their behavior is observed, recorded, or measured.

**activity cycle** any regularly recurring sequence of events characterized by fluctuating levels of activity. Unlike **ACTIVITY RHYTHMS**, activity cycles may be learned and thus are not always associated with **BIOLOGICAL RHYTHMS**.

**activity deprivation** lack of opportunity to engage in physical activity due to restrictive circumstances, for example, confinement in a small area, which may result in distress and physical discomfort. See also **ACTIVITY DRIVE**.

**activity drive** an organism's hypothetical innate desire or urge to be physically active, often expressed as a need to move about, even in the absence of any apparent stimuli motivating movement, such that activity deprivation may cause distress.

**activity group therapy** one of two main types of **GROUP THERAPY** defined by Russian-born U.S. psychotherapist Samuel Richard Slavson (1890–1981), the other being **ANALYTIC GROUP PSYCHOTHERAPY**. Designed for children 6 to 12 years old, activity group therapy emphasizes participation in games, crafts, and other age-appropriate activities. Its deliberate lack of restraint and absence of interpretation are intended to provide a permissive, non-threatening atmosphere that encourages children to express their feelings, the effect of which is believed to be fundamental change in personality structure. Slavson introduced activity group therapy in 1934 as a response to the distinct needs of individuals in this age group, which he saw as resulting from their weak **EGO** organization, the basic narcissistic quality of their **LIBIDO**, and the surface nature of their **UNCONSCIOUS**.

**activity-interview group psychotherapy** a form of **ANALYTIC GROUP PSYCHOTHERAPY** for children 6 to 12 years old who, because of excessively high levels of fear, anxiety, and guilt, do not benefit from the **ACTIVITY GROUP THERAPY** originally developed for this age group. It uses group discussions, work activities, recreational activities, and other verbal and nonverbal techniques to stimulate the expression and exploration of daydreams, fantasies, and other experiences. During the process, the therapist asks questions that encourage the children to understand the underlying meanings of their behavior, attitudes, and feelings and that thus address sources of **INTRAPSYCHIC CONFLICTS**. The therapist may also offer explanations and interpretations if appropriate. [introduced in 1943 by Russian-born U.S. psychotherapist Samuel Richard Slavson (1890–1981)]

**activity log** a diary kept by a researcher or research participant of activities in various settings. An activity log may include information about the location of the participant by time period (e.g., at home, at work, traveling) and whether the time is spent alone or with family, friends, or work associates. An activity log as a method of obtaining a record of events generally is superior to interviews based on a participant's memory.

**activity-passivity** in psychoanalytic theory, polarities characterizing instinctual aims (see **AIM OF THE INSTINCT**). Sigmund **FREUD** asserted that instincts are always active but that their aims can be either active (e.g., **SADISM**, **VOYEURISM**) or passive (e.g., **EXHIBITIONISM**, **MASOCHISM**). The concept now plays a role in many trait theories of personality.

**activity record** the written or recorded data detailing a

student's extracurricular involvement in school activities, clubs, or special projects.

**activity rhythm** the pattern of individual behavior over the course of a day, month, or year that exhibits a clear cycle of activity more or less in synchrony with temporal cues. For example, rats are generally active for approximately 12 hours a day, during the hours of darkness. See **BIOLOGICAL RHYTHM**.

**activity system** see **BEHAVIOR SYSTEM**.

**activity theory 1.** a school of thought, developed primarily by Soviet psychologists, that focuses on activity in general—rather than the distinct concepts of behavior or mental states—as the primary unit of analysis. In this context, an **activity** is a nonadditive unit that orients an organism in the world; it is essentially a system comprising an **operation** (a routine behavior requiring little thought, e.g., typing) that serves to accomplish an **action** (a behavior that involves planning, e.g., creating a bibliography) in the minimum meaningful context that provides understanding of the function of the individual in interacting with the environment (e.g., preparing a paper for a university course as part of a network of students). The theory emphasizes a hierarchical structure of activity, object-orientedness, internalization and externalization, mediation (by tools, language, and other cultural artifacts or instruments), and continuous development. Also called **activity psychology**. **2.** a theory proposing that old age is a lively, creative experience characterized by maintaining existing social roles, activities, and relationships or replacing any lost ones with new ones. Compare **CONTINUITY THEORY**; **DISENGAGEMENT THEORY**.

**activity therapy** any type of therapy based on one or more of various activities, such as arts and crafts, exercise, music, and drama. See **CREATIVE ARTS THERAPY**.

**activity wheel** a revolving drum that turns by the weight of an animal running inside. The activity wheel records the number of revolutions and is often used for research purposes. Also called **running wheel**.

**actomyosin** *n.* see **MUSCLE FIBER**.

**actor–observer effect** in **ATTRIBUTION THEORY**, the tendency for individuals acting in a situation to attribute the causes of their behavior to external or situational factors, such as social pressure, but for observers to attribute the same behavior to internal or dispositional factors, such as personality. See **FUNDAMENTAL ATTRIBUTION ERROR**. See also **DISPOSITIONAL ATTRIBUTION**; **SITUATIONAL ATTRIBUTION**. [introduced in 1971 by U.S. psychologists Edward E. Jones (1926–1993) and Richard E. Nisbett (1941– )]

**ACTP** abbreviation for American College Testing Program. See **ACT ASSESSMENT**.

**act psychology** a philosophical and psychological approach based on the proposition that the act and **CONTENT** of psychological processes are separate functions; for example, the act of seeing color leads to a perception of the visual content, or image. Historically, proponents of act psychology held that acts (mental representation and transformation, judgment, emotion), rather than contents, are the proper subject of psychology, in contrast to Wilhelm **WUNDT**'s emphasis on introspection and conscious contents. Compare **CONTENT PSYCHOLOGY**. See also **INTENTIONALITY**.

**actual** *adj.* in philosophy, existing as a real and present fact. The actual is often contrasted with the merely appar-

ent. Something may appear to the senses to be real but may not actually exist. In the intellectual tradition founded by ARISTOTLE, the actual is contrasted to the **potential**, which is the capacity to change: An entity is actual when form and substance come together to produce it as an end. See also ENTELECHY.

**actualization** *n.* the process of mobilizing one's potentialities and realizing them in concrete form. According to CARL ROGERS, all humans have an innate **actualizing tendency** to grow and realize the self fully. See also SELF-ACTUALIZATION. —**actualize** *vb.*

**actual neurosis** in the classical psychoanalytic theory of Sigmund FREUD, a neurosis that stems from current sexual frustrations (e.g., coitus interruptus, otherwise incomplete sexual experience, forced abstinence), as contrasted with one that stems from past experiences or psychological conflicts. The term, originally applied primarily to ANXIETY NEUROSIS and NEURASTHENIA, has more recently been used to describe a preexisting psychological (i.e., **actual neurotic**) structure that makes some victims of trauma vulnerable to developing POSTTRAUMATIC STRESS DISORDER.

**actual self** in various psychodynamic writings, the REAL SELF or TRUE SELF as it exists at a particular point in time, as opposed to an idealized, grandiose, or otherwise distorted self. The term is also used by client-centered therapists to describe the self untainted by societal constraints and parental expectations.

**actuarial** *adj.* statistical: based on quantified experience and data. In medicine, the use of data about prior instances to estimate the likelihood or risk of a particular outcome is sometimes cited as an alternative to clinical diagnoses, which are open to human error.

**actuarial prediction** see CLINICAL PREDICTION.

**actuarial risk assessment** a statistically calculated prediction of the likelihood that an individual will pose a threat to others or engage in a certain behavior (e.g., violence) within a given period. Unlike in a CLINICAL RISK ASSESSMENT, someone conducting an actuarial risk assessment relies on data from specific, measurable variables (e.g., age, gender, prior criminal activity) that have been validated as predictors and uses mathematical analyses and formulas to calculate the probability of DANGEROUSNESS or violent behavior.

**actus reus** the illegal act (Latin, "guilty act") that, combined with a criminal intent in committing it (see MENS REA), constitutes a crime.

**acuity** *n.* sharpness of perception. Whereas VISUAL ACUITY is sharpness of vision and AUDITORY ACUITY sharpness of hearing, SENSORY ACUITY is the precision with which any sensory stimulation is perceived.

**acuity grating** a stimulus used to measure an individual's sharpness of visual perception. It consists of alternating black and white lines spaced closely together; the point at which the participant perceives the lines to be homogeneous gives an indication of VISUAL ACUITY. When the contrast of the lines is varied, the acuity grating can be used to test CONTRAST SENSITIVITY.

**aculalia** *n.* nonsensical speech associated with lack of comprehension of written or spoken language, as occurs in WERNICKE'S APHASIA.

**acupressure** *n.* a form of COMPLEMENTARY AND ALTERNATIVE MEDICINE in which pressure is applied with the fingers

or thumbs to specific points on the body to relieve pain, treat symptoms of disease, or improve overall health.

**acupuncture** *n.* a form of COMPLEMENTARY AND ALTERNATIVE MEDICINE in which fine needles are inserted into the body at specific points to relieve pain, induce anesthesia (ACUPUNCTURE ANESTHESIA), or treat disease. It is based on the concept in traditional Chinese medicine that "meridians," or pathways, conduct a life-force energy known as CHI between places on the skin and the body's organ systems. Western scientists are unable to explain specifically how acupuncture produces its effects but theorize that the needling sites may be related to trigger points in the GATE-CONTROL THEORY of pain or may stimulate the release of ENDOGENOUS OPIOIDS. The technique is highly popular in many Western societies and has been deemed appropriate by the World Health Organization for use in treating more than 40 medical conditions. Compare ACUPRESSURE. —**acupuncturist** *n.*

**acupuncture anesthesia** the loss of sensation, often of pain, that results from the insertion of ACUPUNCTURE needles into the body at specific points. The technique may be used alone or in combination with other pain-management techniques during surgery.

**-acusia (-acusis; -cusis)** *suffix* hearing (e.g., PARACUSIA).

**acute** *adj.* **1.** denoting conditions or symptoms of sudden onset, short duration, and often great intensity. Compare CHRONIC. **2.** sharp, keen, or very sensitive (e.g., acute hearing).

**acute alcoholic myopathy** a condition of severe pain, tenderness, and swelling of the muscles, accompanied by cramps and muscular weakness, that develops after a period of heavy drinking. The effects may be general or focused in one body area. In some cases, muscle fibers may undergo necrosis (death of constituent cells). Recovery may require several weeks to several months.

**acute alcoholism** the complex of usually short-term symptoms associated with severe alcohol intoxication. Symptoms may include impaired motor control, incoordination, respiratory depression, stupor, vomiting, dehydration, and headache.

**acute anxiety** a sudden feeling of dread and apprehension accompanied by somatic symptoms of tension, usually precipitated by a threatening situation, such as an examination or court hearing. The feeling typically subsides as soon as the situation is over.

**acute brain disorder** any pattern of symptoms resulting from temporary, reversible impairment of brain functioning.

**acute cerebellar ataxia** a disorder that occurs suddenly, most often in children, following a viral infection. It is characterized by slurred speech; muscular incoordination (ATAXIA); rapid, involuntary eye movements (NYSTAGMUS); and intention tremor (see ACTION TREMOR). Also called **acute cerebral tremor**.

**acute cerebrovascular accident** the onset of symptoms of stroke. See CEREBROVASCULAR ACCIDENT.

**acute confusional state** severe confusion that can include symptoms of agitation, memory disturbance, disorientation, and delirium. It often occurs as a result of severe mental or physical illness.

**acute delirium** a sudden but brief disturbance in consciousness resulting from metabolic disturbance (e.g., high

fever) or toxic agents (e.g., excessive amounts of alcohol). It is marked by illusions, hallucinations, delusions, excitement, restlessness, and incoherence.

**acute delusional psychosis** a diagnostic entity specific to French psychiatry, in which it is known as **bouffée délirante** (French, “delirious outburst”), involving the sudden onset of schizophrenic symptoms in response to a stressful life event. It is temporary (lasting no longer than 3 months), has no strong evidence of a genetic link, and has a favorable prognosis: spontaneous resolution of symptoms is not uncommon. Acute delusional psychosis is essentially equivalent to BRIEF PSYCHOTIC DISORDER.

**acute depression** **1.** a sudden onset of depression. **2.** a severe episode of depression, characterized by many more symptoms than are necessary to meet the criteria for a MAJOR DEPRESSIVE EPISODE.

**acute dystonia** a sudden loss of normal muscle tone. See DYSTONIA.

**acute mania** the manic phase of bipolar I disorder (see BIPOLAR DISORDER), characterized by an extremely unstable euphoric or irritable mood with hyperactivity, excessively rapid thought and speech, uninhibited and reckless behavior, grandiosity, and FLIGHT OF IDEAS. See MANIC EPISODE.

**acute mountain sickness** an illness that can affect mountain climbers, hikers, or skiers who have ascended too rapidly above 2,400 m (8,000 ft), especially when coming from sea level. Caused by the effects of reduced atmospheric pressure and oxygen pressure at high altitudes, it affects the nervous system, lungs, muscles, and heart. The faster the ascent and the higher the altitude, the greater is the degree of illness. In two out of every 10,000 cases, swelling occurs around the brain, causing confusion and leading to coma (**high-altitude cerebral edema**). See also ALTITUDE SICKNESS.

**acute onset** a sudden, rapid, or unanticipated development of a disease or its symptoms.

**acute otitis media** see OTITIS MEDIA.

**acute preparation** the process by which a research animal undergoes an experimental procedure, often surgical in nature, and is then studied for a relatively short period (typically under anesthetic before being euthanized). Compare CHRONIC PREPARATION.

**acute psychotic episode** an appearance of florid (blatant) psychotic symptoms, such as hallucinations, delusions, and disorganized speech, that is of sudden onset and usually short duration.

**acute schizophrenic episode** an appearance of florid (blatant) schizophrenic symptoms, such as disordered thinking and disturbances in emotional responsiveness and behavior, that is of sudden onset.

**acute stress disorder (ASD)** a disabling psychological condition that can occur immediately after exposure to a traumatic stressor. Symptoms such as intrusive thoughts, hyperarousal, and avoidance of situations that recall the traumatic event are the same as those of POSTTRAUMATIC STRESS DISORDER but do not last longer than 4 weeks. This disorder may also include elements of dissociation, such as DEPERSONALIZATION and DEREALIZATION.

**acute stress response** see HYPERAROUSAL.

**acute tolerance** a type of TOLERANCE (physical dependence) that develops rapidly, sometimes in response to a

single small dose of a particular drug. See also TACHYPHYLAXIS.

**ad-** prefix **1.** to or toward. **2.** near or adjacent to.

**ADA** abbreviation for AMERICANS WITH DISABILITIES ACT.

**Adam** *n.* slang for MDMA, a hallucinogen.

**ADAMHA** abbreviation for ALCOHOL, DRUG ABUSE AND MENTAL HEALTH ADMINISTRATION.

**Adapin** *n.* a trade name for DOXEPIN.

**adaptability** *n.* **1.** the capacity to make appropriate responses to changed or changing situations. **2.** the ability to modify or adjust one's behavior in meeting different circumstances or different people. —**adaptable** *adj.*

**adaptation** *n.* **1.** adjustment of a sense organ to the intensity or quality of stimulation, resulting in a temporary change in sensory or perceptual experience, as in VISUAL ADAPTATION when the pupil of the eye adjusts to dim or bright light. **2.** reduced responsiveness in a sensory receptor or sensory system caused by prolonged or repeated stimulation. The adaptation may be specific, for example, to the orientation of a particular stimulus. Also called **sensory adaptation**. **3.** modification to suit different or changing circumstances. In this sense, the term often refers to behavior that enables an individual to adjust to the environment effectively and function optimally in various domains, such as coping with daily stressors. It is also applied more widely, for example, in ergonomics, to denote a system that alters information presentation, interface design, or output according to the capabilities or characteristics of the user, system, or environmental state. Compare MALADAPTATION. **4.** adjustments to the demands, restrictions, and mores of society, including the ability to live and work harmoniously with others and to engage in satisfying social interactions and relationships. Also called **social adaptation**. **5.** the modification of an organism in structure or function that increases its ability to reproduce successfully and its offspring's ability to survive and reproduce successfully. **6.** in PIAGETIAN THEORY, the process of adjusting one's cognitive structures to meet environmental demands, which involves the complementary processes of assimilation and accommodation. —**adapt** *vb.* —**adaptation** *adj.* —**adaptive** *adj.*

**adaptation level (AL)** the theoretical baseline or zero point, which forms a standard against which new stimuli are evaluated. For example, a person who first lifts a 40 lb weight would then likely judge a 20 lb weight as light, whereas if that person first lifted a 4 lb weight he or she would then likely judge the 20 lb weight as heavy. Although it originated in studies of sensory perception, **adaptation-level theory** has since been applied in other fields, such as aesthetics and attitude change. [originated by Harry HELSON]

**adaptation period** a period of time during which a research participant becomes accustomed to the materials, instruments, or equipment to be used in a study or reaches a certain performance level. Adaptation periods help reduce the influence of situational novelty on a participant's behavior.

**adaptation stage** see GENERAL ADAPTATION SYNDROME.

**adaptation time** the period of time from the start of a stimulus until the sense organ stimulated has adapted completely and no longer responds.

**adapted child** one of the child ego states in TRANSAC-

TIONAL ANALYSIS, characterized as compliant, orderly, and manipulative. Compare NATURAL CHILD.

**adaptive act** the process whereby an organism learns to make the appropriate responses that are needed for an adjustment to the environment. For example, a caged pigeon learns to peck on a lighted key in order to receive food.

**adaptive behavior** **1.** the level of everyday performance of tasks that is required for a person to fulfill typical roles in society, including maintaining independence and meeting cultural expectations regarding personal and social responsibility. Specific categories in which adaptive behavior is usually assessed include self-help, mobility, health care, communication, domestic skills, consumer skills, community use, practical academic skills, and vocational skills. Limitations in adaptive behavior are one of the criteria for diagnosis or classification of intellectual disability and for determining legal COMPETENCE. **2.** any behavior that enables an individual to adjust to the environment appropriately and effectively. It is often discussed in the context of evolution. See also ADJUSTMENT PROCESS.

**adaptive behavior scale** **1.** any standardized assessment protocol with established psychometric properties used to document and quantify everyday performance of skills necessary for personal independence and social responsibility, consistent with cultural expectations (see ADAPTIVE BEHAVIOR). An example is the VINELAND ADAPTIVE BEHAVIOR SCALES. **2.** any protocol assessing behavioral and social performance that is based on developmental norms, with domains structured in developmental sequence or degree of ascending task complexity or difficulty. **3.** a component of the BAYLEY SCALES OF INFANT AND TODDLER DEVELOPMENT.

**adaptive control of thought theory** see ACT\*.

**adaptive hypothesis** the view that the function of the primary autonomous ego is to cope with an "average expectable environment" through perception, memory, affect regulation, and motility. This is the view taken by Austrian-born U.S. psychoanalyst Heinz Hartmann (1894–1970) in his version of EGO PSYCHOLOGY.

**adaptive intelligence** the ability to apply knowledge to novel situations, such as solving problems and conversing with others, demonstrating an effective ability to interact with, and learn from, the environment.

**adaptive nonresponding theory** a theory that sleep evolved as a means of creating species-specific daily periods of inactivity concurrent with periods of greatest threat from predators.

**adaptive production system** a PRODUCTION SYSTEM able to change or adjust the rules in production memory as a result of interacting with an environment. Both SOAR and CLASSIFIER SYSTEMS fall into this category.

**adaptive sampling** a method of sampling data in which information from past outcomes is used to reduce the chances of collecting future data that correspond to poor outcomes. A group of individuals randomly chosen from the population of interest is evaluated, and the information gathered is used to concentrate additional selection efforts where they are most likely to be successful. For example, if a researcher is interested in studying a certain nonhuman animal of a particular age, he or she could first assess a subset of animals from a given geographical area and then target further sampling efforts in the specific por-

tions of that area shown to possess the most individuals meeting the criteria.

**adaptive skills** abilities that enable one to meet new challenges, such as the ability to adjust to a new environment and to learn new things. Adaptive skills also involve self-management, such as the ability to control one's impulses.

**adaptive strategy choice model (ASCM)** a theoretical model that postulates the existence of multiple strategies of problem solving within a child's cognitive repertoire and describes how use of these strategies changes over time. According to this model, strategies compete with one another for use: With time and experience, more efficient strategies are used more frequently, whereas less efficient strategies are used less frequently but never totally disappear. This contrasts with **stage theory of strategy development**, which postulates that more efficient strategies replace less efficient ones. Also called **strategy choice model**. [proposed by U.S. developmental psychologist Robert S. Siegler (1949– ) and Christopher Shipley]

**adaptive system** in ergonomics, a system with the capability to alter information presentation, interface design, or output according to the capabilities or characteristics of the user, system, or environmental state.

**adaptive task allocation** in ergonomics, a system design that supports allocation of tasks to the human operator or the machine according to the state of the system, the state of the operator (e.g., if fatigued), or other operational rules. Adaptive task allocation maintains a flexible FUNCTION ALLOCATION policy.

**adaptive testing** a testing technique designed to adjust to the response characteristics of individual examinees by presenting items of varying difficulty based on the examinee's responses to previous items. The process continues until a stable estimate of the ABILITY LEVEL of the examinee can be determined. See also ITEM RESPONSE THEORY.

**adaptometer** *n.* an instrument used to measure the time taken to adapt to a given amount of light, used in the diagnosis of night blindness and other visual disorders.

**ADC** abbreviation for AIDS DEMENTIA COMPLEX.

**ADD** abbreviation for attention-deficit disorder. See ATTENTION-DEFICIT/HYPERACTIVITY DISORDER.

**Adderall** *n.* a trade name for DEXTROAMPHETAMINE in combination with AMPHETAMINE.

**addict** *n.* a person who has developed a SUBSTANCE DEPENDENCE or ADDICTION. The term is also used colloquially to refer to a person with a compulsive behavior such as persistent gambling.

**addicted athlete** **1.** an individual, especially a professional athlete, who is addicted to a substance for purposes of PERFORMANCE ENHANCEMENT in sport. **2.** an individual habitually involved in an athletic activity who will experience withdrawal symptoms if deprived of participating in the activity. See also COMPULSIVE EXERCISER.

**addiction** *n.* a state of psychological or physical dependence (or both) on the use of alcohol or other drugs. The term is often used as an equivalent term for SUBSTANCE DEPENDENCE and sometimes applied to behavioral disorders, such as sexual, Internet, and gambling addictions. A chemical substance with significant potential for producing dependence is called an ADDICTIVE DRUG. —**addictive** *adj.*



**addictive behavior** actions, often obsessive and destructive, that are related to one's abuse of or dependence on a substance and that dominate one's life. Addictive behaviors may include DRUG-SEEKING BEHAVIOR, risk taking, and breaking laws in the course of sustaining one's drug habit.

**addictive drug** any psychoactive substance that has a high likelihood of producing SUBSTANCE DEPENDENCE. Such substances include alcohol, AMPHETAMINES and amphetamine-like CNS STIMULANTS, CAFFEINE, COCAINE and CRACK, HALLUCINOGENS, INHALANTS, NICOTINE, OPIOIDS, PCP (phencyclidine) and phencyclidine-like substances, and CNS DEPRESSANTS.

**addictive personality** a hypothetical personality pattern thought to increase the likelihood that a person will become dependent on one or more substances. Research has not supported the existence of such a personality but has identified traits associated with substance abuse, such as impulsivity, behavioral undercontrol, and characteristics associated with neurobehavioral disinhibition.

**Addison's disease** see ADRENOCORTICAL INSUFFICIENCY.

**addition rule** a maxim of probability theory stating that the likelihood of observing a set of distinct events is equal to the sum of the probabilities of observing the individual events. Also called **addition law**; or **rule**. Compare MULTIPLICATION RULE.

**addition test** a task requiring the solution of arithmetic addition problems. Early tests of intelligence, such as those of Louis L. THURSTONE, sometimes included such tasks, but with the advent of modern computational devices, such as calculators and computers, the tasks have become less relevant.

**additive** *adj.* characterized or produced by addition. For example, a FUNCTION is said to be additive when the quantities defining it may be summed to obtain a meaningful result. Compare NONADDITIVE.

**additive bilingualism** the sociolinguistic situation in which a second language is adopted by a SPEECH COMMUNITY without threatening the status of the first language. For example, most English-speaking Canadians learn French in order to gain access to prestigious jobs that require bilingualism but continue to use English as their main language. This contrasts with **subtractive bilingualism**, in which the second language comes to replace the functions of the first language. The bilingualism of many immigrant communities is considered subtractive, resulting in LANGUAGE SHIFT within one or two generations.

**additive color mixture** the process and effect of combining colored lights, as manifested in new, composite colors; for example, in stage lighting, red and green spotlights are blended to form yellow. The color in television is another example of additive COLOR MIXTURE.

**additive effect** the joint effect of two or more independent variables on a dependent variable where this is equal to the sum of their individual effects: The value of either independent variable is unconditional upon the value of the other and there is no INTERACTION EFFECT.

**additive-factors method** a procedure for analyzing reaction-time data to determine whether two variables affect the same or different processing stages. If two variables influence different stages, their effects should be additive. If

two variables influence the same stage, their effects should be interactive.

**additive gene** a gene in which there are neither dominant nor recessive ALLELES, although gradations may exist between extremes. The resulting PHENOTYPE does not follow a pattern of MENDELIAN INHERITANCE but instead is determined by the combined effect of the alleles. Additive genes are responsible for such traits as height and skin color and are also believed to be the genetic component of some pathologies such as autism, Alzheimer's disease, and diabetes.

**additive model** a description of the relationship between a response variable and a set of predictor variables in which the effect of each predictor is assumed to be the same across all levels of the other predictors in the model. Thus, the combined effect of all predictors is determined by summing their individual effects.

**additive scale** a scale with all points distributed equally so that a meaningful result can be obtained by addition (e.g., a metric ruler).

**additive task** a task or project that a group can complete by aggregating individual members' efforts or contributions. An example is a five-person team pulling together on a rope. Groups usually outperform individuals on such tasks, but overall group productivity rarely reaches its maximum potential owing to SOCIAL LOAFING. Compare COMPENSATORY TASK; CONJUNCTIVE TASK; DISJUNCTIVE TASK.

**adduction** *n.* 1. movement of a limb toward the midline of the body. Any muscle that produces such movement is called an **adductor**. Compare ABDUCTION. 2. in CONDITIONING, the production of new behavior by combining the DISCRIMINATIVE STIMULI of separate DISCRIMINATED OPERANTS. —**adduct** *vb.*

**ADE** abbreviation for adverse drug event. See ADVERSE DRUG REACTION.

**ADEA** abbreviation for AGE DISCRIMINATION IN EMPLOYMENT ACT.

**A-delta fiber** see A FIBER.

**adendritic** *adj.* describing neurons that lack DENDRITES.

**adenine** (symbol: A) *n.* a purine compound present in the nucleotides of living organisms. It is one of the four bases in DNA and RNA that constitute the GENETIC CODE, the others being cytosine, guanine, and thymine or uracil.

**adeno-** (**aden-**) *combining form* gland or glandular.

**adenohypophysis** *n.* see ANTERIOR PITUITARY; PITUITARY GLAND.

**adenoma** *n.* a benign (noncancerous) tumor derived from EPITHELIUM that has glandular properties. The most common adenoma in the central nervous system is in the pituitary gland (**pituitary adenoma**). —**adenomatous** *adj.*

**adenosine** *n.* a compound in living cells consisting of an ADENINE molecule and a ribose sugar molecule. Adenosine functions as a neuromodulator: By binding to special **adenosine receptors**, it influences the release of several neurotransmitters in the central nervous system. Combined with three phosphate units, adenosine becomes ATP (adenosine triphosphate), which functions as an energy source in metabolic activities.

**adenosine 3',5'-monophosphate** see CYCLIC AMP.

**adenosine triphosphate** see ATP.

**adenylate cyclase** an enzyme that catalyzes the conversion of ATP to CYCLIC AMP, which functions as a SECOND MESSENGER in signaling pathways within cells. Also called **adenyl cyclase**.

**adequate sample** a SAMPLE that sufficiently represents the larger population from which it was drawn in terms of size, being large enough to provide satisfactory PRECISION by minimizing the possibility of chance affecting the data obtained.

**adequate stimulus** the type of stimulus for which a given sensory organ is particularly adapted. Thus, the adequate stimulus for the eye is photic (light) energy. Although mechanical pressure on the eye or an electrical shock can stimulate the retina and produce sensations of light, these are not adequate stimuli for the eye.

**ADH** abbreviation for antidiuretic hormone. See VASOPRESSIN.

**ADHD** abbreviation for ATTENTION-DEFICIT/HYPERACTIVITY DISORDER.

**adherence** *n.* the ability of an individual to conform to a treatment regimen, especially one involving drug treatment, as outlined by a health care provider. External factors that affect adherence may include appropriate education regarding a drug and its use, the individual's ability to pay for or otherwise obtain the treatment recommended, and familial or cultural value systems influencing the acceptability of the treatment to the individual. Internal factors include the individual's belief in the potency of the treatment, the presence or absence of unpleasant side effects, and the individual's capability to understand or conform to instructions given by the health care provider. Also called **compliance**. See also NONADHERENCE.

**adhesive otitis media** see OTITIS MEDIA.

**ad hoc** for a particular purpose or in response to some particular event or occurrence. For example, an **ad hoc committee** is convened on a short-term basis to address a single problem, and an **ad hoc hypothesis** is an explanation of a particular phenomenon, rather than a general theory. [Latin, literally: "to this"]

**ad hoc category** a category formed to meet a special criterion or demand, usually in the moment that it is needed. For example, one might form the category *things I would take from my house if it were on fire*. Compare BASIC-LEVEL CATEGORY.

**adience** *n.* a response or behavior that results in movement toward a stimulus, either by physical approach or by an action that increases contact with the stimulus. Compare ABIENCE. —**adient** *adj.*

**adinazolam** *n.* a BENZODIAZEPINE of the triazolobenzodiazepine class with antidepressant as well as anxiolytic properties. It currently is not available in the United States. Italian trade name: **Deracyn**.

**Adipex** *n.* a trade name for PHENTERMINE.

**adipo- (adip-)** combining form fat or fatty.

**adipocyte** *n.* a cell that forms ADIPOSE TISSUE and is specialized for the synthesis and storage of triglycerides (triacylglycerols), the form in which most fat is stored in the body. Adipocytes also contain enzymes that can mobilize the stored fat as fatty acids and glycerol (see FAT METABOLISM). Also called **fat cell**.

**adipose tissue** connective tissue consisting largely of fat

cells (see ADIPOCYTE), which is found beneath the skin and around major organs. It provides protection and insulation and functions as an energy reserve. See also BROWN FAT; FAT METABOLISM.

**adipsia** *n.* an absence of thirst, manifest as a lack of drinking. Adipsia is associated with lesions of the thirst center in the anterior hypothalamus but may also be caused by head injury, stroke, or other conditions. Compare POLYDIPSIA.

**ADJ** abbreviation for ADJUSTING SCHEDULE OF REINFORCEMENT.

**adjective checklist 1.** a self-inventory, used in personality assessment, consisting of a list of adjectives (e.g., intelligent, lazy, productive) that the respondent checks off as descriptive of or applicable to himself or herself. **2.** in CONSUMER PSYCHOLOGY, a list of adjectives used, for example, in the assessment of a product image and in advertising research.

**adj  $R^2$**  symbol for ADJUSTED  $R^2$ .

**adjudication** *n.* **1.** any formal decision of a court. **2.** the act or process of settling a matter by judicial proceedings or, in cases involving insurance claims, by insurance examiners or specialized software. —**adjudicate** *vb.*

**adjudicative competence** an umbrella term that encompasses all forms of meaningful participation in proceedings of the criminal justice system, including COMPETENCY TO STAND TRIAL, competency to plead guilty, and competency to waive Miranda rights.

**adjunct** *n.* **1.** a drug that is used concurrently with another drug in treating a condition in order to provide additional therapeutic effects. It may have a mechanism of action that differs from that of the main drug used in treatment. **2.** more generally, a supplementary or nonessential part of something. —**adjunctive** *adj.*

**adjunctive behavior** relatively unvaried behavior that occurs following, but is otherwise unrelated to, regular delivery of a reinforcer in operant or instrumental conditioning. It differs from simple RESPONDENT BEHAVIOR in that the likelihood of its occurrence is influenced by the time between stimulus presentations. An example is **schedule-induced polydipsia**, in which excessive drinking of water occurs when small portions of food are delivered intermittently. Compare TERMINAL BEHAVIOR.

**adjunctive therapist** **1.** in psychotherapy, a provider of any secondary ADJUNCTIVE THERAPY. **2.** in health care, a member of a multidisciplinary treatment team whose functions are ancillary to the main therapeutic program. Such therapists provide direct clinical services to patients in such areas as improvement of daily living skills, behavior management, coordination of educational activities, and management of leisure time.

**adjunctive therapy** one or more secondary interventions used concurrently with a primary intervention to enhance treatment effectiveness. For example, medication may be used concurrently with COGNITIVE BEHAVIOR THERAPY, with the latter as the primary form of intervention; GROUP THERAPY may be used secondarily to individual PSYCHODYNAMIC PSYCHOTHERAPY, with each intervention bringing its own characteristic perspectives and methods to bear on the client's mental awareness and healing. Adjunctive therapy is typically conducted by a different practitioner than is the primary intervention, which distinguishes it from COMBINATION THERAPY. The term is some-

times used synonymously with ADJUVANT THERAPY. See also COLLABORATIVE CARE.

**adjusted effect** the effect of a predictor or INDEPENDENT VARIABLE on a response or DEPENDENT VARIABLE after the influence of one or more other predictors has been removed. For example, a researcher might find that education level predicts income via the MEDIATOR of residential area; an adjusted effect would be one without the influence of the mediator included.

**adjusted R** the correlation between scores on a response or DEPENDENT VARIABLE and the values predicted by a set of INDEPENDENT VARIABLES, after accounting for the number of predictors and the number of observations involved in the calculation. See also MULTIPLE CORRELATION COEFFICIENT.

**adjusted R<sup>2</sup>** (symbol:  $\text{adj } R^2$ ;  $R^2_{\text{adj}}$ ) the square of the correlation between scores on a response or DEPENDENT VARIABLE and the values predicted by a set of INDEPENDENT VARIABLES after accounting for the number of predictors and the number of observations involved in the calculation. It gives the proportion of the variance in a response that is accounted for by its relationship with the predictors and yields a better estimate of the population variance than the ADJUSTED R upon which it is based. Also called **shrunken R<sup>2</sup>**. See also COEFFICIENT OF MULTIPLE DETERMINATION.

**adjusting schedule of reinforcement (ADJ)** in conditioning, any arrangement in which the requirements for reinforcement are varied continuously based on some characteristic of the organism's performance.

**adjustive behavior** any response of an organism that effectively incorporates environmental or situational demands.

**adjustment** *n.* **1.** a change in attitude, behavior, or both by an individual on the basis of some recognized need or desire to change, particularly to account for the current environment or changing, atypical, or unexpected conditions. It may be assessed via a type of survey called an **adjustment inventory**, which compares a person's emotional and social adjustment with a representative sample of other individuals. A well-adjusted person is one who satisfies needs in a healthy, beneficial manner and demonstrates appropriate social and psychological responses to situations and demands. **2.** modification to match a standard. See METHOD OF ADJUSTMENT. —**adjust** *vb.*

**adjustment disorder** in *DSM-IV-TR*, impairment in social or occupational functioning and unexpected severe emotional or behavioral symptoms occurring within 3 months after an individual experiences a specific identifiable stressful event, such as a divorce, business crisis, or family discord. The event does not meet the traumatic stressor criteria of experiencing or witnessing actual or threatened death or serious injury or a threat to the physical integrity of oneself or others, which can lead to ACUTE STRESS DISORDER or POSTTRAUMATIC STRESS DISORDER. Symptoms may include anxiety, depression, and conduct disturbances and tend to remit following elimination of the stressors or acquisition of new coping skills. In **chronic adjustment disorder**, the symptoms last more than 6 months due to either the persistence or the severity of the stressor. *DSM-5* retains the same symptom criteria for adjustment disorder but reconceptualizes it as a heterogeneous array of stress-response syndromes that occur after exposure to a distressing traumatic or nontraumatic event, rather than

as a residual category for distress that does not meet criteria for a more discrete disorder (as in *DSM-IV-TR*).

**adjustment inventory** see ADJUSTMENT.

**adjustment method** see METHOD OF ADJUSTMENT.

**adjustment process** any means through which human beings modify attitudes and behaviors in response to environmental demands. Such attempts to maintain a balance between needs and the circumstances that influence the satisfaction of those needs are influenced by numerous factors that vary widely across situations and individuals and are the subject of much research.

**adjustment reaction** a temporary, maladaptive psychological response to a stressful situation. See ADJUSTMENT DISORDER.

**adjuvant therapy** therapy that is provided after the initial (primary) form of treatment and that is intended to enhance effectiveness or to increase the chances of a cure. Adjuvant therapy typically refers to medical treatment, particularly any drug therapy used in support of nondrug interventions. For example, in the treatment of cancer, chemotherapy and radiation are often used as adjuvant therapies after the primary intervention of surgery. The term is sometimes used in psychotherapy as a synonym for the preferred ADJUNCTIVE THERAPY.

**Adlerian psychology** see INDIVIDUAL PSYCHOLOGY.

**Adlerian therapy** a brief psychoeducational treatment based on the INDIVIDUAL PSYCHOLOGY of Alfred ADLER; the therapy aims to decrease an individual's symptoms and improve his or her functioning by emphasizing the individual's strivings for success, connectedness with others, and contributions to society as hallmarks of mental health. It is used both in clinical settings with individuals, couples, families, and groups and in educational settings.

**ad lib** **1.** in nonhuman animal experiments, denoting or relating to a schedule of unlimited access to food, water, or both. The body weight achieved by animals under such conditions is called the **free-feeding weight**. **2.** more generally, without restriction. [from Latin *ad libitum*, "as desired"]

**ad litem** for the purpose of the suit (in a court of law). See GUARDIAN AD LITEM. [Latin, literally: "for the lawsuit"]

**ADLs** abbreviation for ACTIVITIES OF DAILY LIVING.

**administration** *n.* **1.** the application of a drug or other agent in the diagnosis or treatment of a disorder. This may be accomplished **enterally** (via the digestive tract, as with oral administration) or **parenterally** (via all other means, including subcutaneous, intramuscular, and intravenous injection; rectal and vaginal suppositories; inhalation; and absorption through skin or mucous membranes). **2.** the giving of a test for the purpose of obtaining information.

**administrative controls** in SAFETY ENGINEERING, managerial interventions—such as training, rotating work schedules to reduce exposure (e.g., to hazardous chemicals), and implementing CLEARANCE REQUIREMENTS—that can help to maintain a safe environment in the workplace. Administrative controls, supplemented by the use of PERSONAL PROTECTIVE EQUIPMENT, are considered the second resort after ENGINEERING CONTROLS. See also HAZARD-CONTROL PROTOCOL.

**admission** *n.* **1.** the act of registering an individual for treatment or observation in a health care facility. See FIRST

ADMISSION; READMISSION; VOLUNTARY ADMISSION. **2.** the process involved in determining one's eligibility to enter an educational program. —**admit** *vb.*

**admission certification** an aspect of UTILIZATION REVIEW in which the medical necessity of a patient's admission to a health care facility is determined.

**admission criteria** a set of standards or tests used to decide whether to allow a student entry to an educational program.

**admission procedures** the administrative and medical procedures of admitting a person as an inpatient to a health care facility.

**adolescence** *n.* the period of human development that starts with puberty (10–12 years of age) and ends with physiological maturity (approximately 19 years of age), although the exact age span varies across individuals. During this period, major changes occur at varying rates in physical characteristics, sexual characteristics, and sexual interest, resulting in significant effects on body image, self-concept, and self-esteem. Major cognitive and social developments take place as well: Most young people acquire enhanced abilities to think abstractly, evaluate reality hypothetically, reconsider prior experiences from altered points of view, assess data from multiple dimensions, reflect inwardly, create complex models of understanding, and project complicated future scenarios. Adolescents also increase their peer focus and involvement in peer-related activities, place greater emphasis on social acceptance, and seek more independence and autonomy from parents. —**adolescent** *adj., n.*

**adolescent egocentrism** the feeling of personal uniqueness often experienced in adolescence; that is, the conviction that one is special and is or should be the constant focus of others' attention. See also IMAGINARY AUDIENCE; PERSONAL FABLE. [described by U.S. developmental psychologist David Elkind (1931– )]

**adolescent growth spurt** see PUBESCENT GROWTH SPURT.

**adolescent gynecomastia** enlargement of the breasts in adolescent males, typically resulting from hormonal (estrogen–androgen) imbalances during puberty, in which case it is usually minor and transient. It may also occur as a side effect of medication or street drug use or in association with various conditions, such as KLINEFELTER'S SYNDROME. See GYNECOMASTIA.

**adolescent pregnancy** pregnancy that occurs during the period of adolescence. Adolescent pregnancy is a controversial social issue, particularly when it occurs during the early and middle years of adolescence, when teenagers are typically not emotionally or financially prepared to raise children. A number of possible causes contribute to variations in teenage pregnancy rates, including social and cultural customs, family background and education, and economic and social conditions. Also called **teenage** (or **teen**) **pregnancy**.

**adolescent psychology** the branch of psychology that describes and studies adolescents, their development, and their behavior.

**adolescent psychotherapy** psychotherapy for adolescents who are experiencing social, emotional, or behavioral problems.

**adolescent rebellion** the rejection by adolescents of

family values and family control over their behavior, reflecting their desire for increased independence.

**adolescent sex changes** the physical and physiological changes that start at PUBERTY. They include accelerated development of sex organs, the appearance of secondary SEX CHARACTERISTICS, and the first occurrence of seminal ejaculation in boys and menstruation in girls.

**adopter categories** categories into which consumers who buy a new product or service can be grouped on the basis of how soon they adopt the innovation after it first appears on the market. The five main categories are innovators (see CONSUMER INNOVATOR), early adopters, early majority, late majority, and laggards. Analysis of adopter categories is important in determining the likely success of a new product or service and in devising the most effective strategies for marketing it.

**adoption** *n.* the legal process by which an infant or child is permanently placed with a family other than his or her birth family. An adoption may be private, in which a birth parent voluntarily plans for the placement of the child with adoptive parents through intermediaries, or public, in which a child removed from his or her birth parent(s) because of neglect or abuse is placed with adoptive parents through public child welfare agencies. Adoptions may also be closed, allowing no contact between the birth and adoptive parents, or open, permitting varying degrees of pre- and postplacement contact and making possible a relationship between all three parties.

**adoption study** a research design that investigates the relationships among genetic and environmental factors in the development of personality, behavior, or disorder by comparing the similarities of biological parent–child pairs with those of adoptive parent–child pairs.

**adoptive parent** the adult who legally adopts a child and raises him or her. Compare BIRTH PARENT.

**ADR** abbreviation for ADVERSE DRUG REACTION.

**adren-** *combining form* see ADRENO-.

**adrenal cortical hyperfunction** the excessive production of one or more of the hormones of the adrenal cortex. The manifestations vary with the hormone but potentially include (among others) VIRILISM, hypertension, sudden weight gain, torso obesity, and low blood levels of potassium. Causes may include a tumor or CONGENITAL ADRENAL HYPERPLASIA, a disorder marked by increased adrenal production of cortisol precursors and androgens.

**adrenalectomy** *n.* surgical removal of one or both of the ADRENAL GLANDS.

**adrenal gland** an endocrine gland adjacent to the kidney. Its outer layer, the **adrenal cortex**, secretes such hormones as ANDROGENS, GLUCOCORTICOIDS, and MINERALOCORTICOIDS. Its inner core, the **adrenal medulla**, secretes the hormones EPINEPHRINE and NOREPINEPHRINE, both of which are CATECHOLAMINES and also serve as neurotransmitters. Also called **suprarenal gland**.

**adrenal hyperplasia** see CONGENITAL ADRENAL HYPERPLASIA.

**adrenaline** *n.* see EPINEPHRINE.

**adrenal virilism** see VIRILISM.

**adrenarche** *n.* the stage of prepubertal development marked by the start of ANDROGEN secretion by the adrenal cortex, normally occurring between 6 and 8 years of age.

**Premature adrenarche**, characterized by pubertal levels of adrenal androgens, is manifested by the early appearance of pubic hair. It may be associated with psychological disturbances. By parent report on the DIAGNOSTIC INTERVIEW SCHEDULE for Children, 44% of the children with premature adrenarche met the diagnostic criteria for psychological disorders, primarily anxiety disorders. The condition is also associated with self-reported depression and parent-reported behavior problems, as well as low scores on various intelligence tests.

**adrenergic** *adj.* responding to, releasing, or otherwise involving EPINEPHRINE (adrenaline). For example, an **adrenergic neuron** is one that employs epinephrine as a neurotransmitter. The term often is used more broadly to include NOREPINEPHRINE as well.

**adrenergic blocking agent** any pharmacological substance that either partially or completely inhibits the binding of the neurotransmitters norepinephrine or epinephrine to ADRENERGIC RECEPTORS and thus blocks or disrupts the action of these neurotransmitters. Such blocking agents are classed according to whether they inhibit binding to alpha- or beta-adrenergic receptors. They include **alpha blockers** (also called **alpha-adrenoreceptor blocking agents**), used primarily to widen blood vessels in the treatment of hypertension, and **beta blockers** (also called **beta-adrenoreceptor blocking agents**), used to treat hypertension as well but by reducing the rate and force of heart contractions, arrhythmia, tremor, and anxiety-related symptoms. Also called **adrenoceptor blocking agent**; **adrenoreceptor blocking agent**.

**adrenergic drug** see SYMPATHOMIMETIC DRUG.

**adrenergic reaction** the response of organs innervated by the SYMPATHETIC NERVOUS SYSTEM to stimulation by the adrenergic hormones norepinephrine or epinephrine. Adrenergic reactions include increased heart rate, constriction of blood vessels, and dilation of the pupils.

**adrenergic receptor** a molecule in a cell membrane that specifically binds and responds to norepinephrine and, to a lesser extent, epinephrine, which act as neurotransmitters in the sympathetic nervous system. There are two types: ALPHA-ADRENERGIC RECEPTORS (or alpha receptors) and BETA-ADRENERGIC RECEPTORS (or beta receptors). Also called **adrenoceptor**; **adrenoreceptor**.

**adrenergic system** the part of the AUTONOMIC NERVOUS SYSTEM, including receptor sites, that is influenced by ADRENERGIC neurotransmitters and drugs. The nerves included in the adrenergic system vary somewhat with species but generally include all postganglionic sympathetic fibers. Compare CHOLINERGIC SYSTEM.

**adreno- (adren-)** *combining form* the adrenal glands.

**adrenoceptor** *n.* see ADRENERGIC RECEPTOR.

**adrenocortical insufficiency** a potentially life-threatening condition caused by failure of the adrenal cortex to produce adequate levels of hormones required for normal metabolic functions. Symptoms may include fatigue, muscle weakness, dizziness, anxiety, and depression. Primary adrenocortical insufficiency is caused by abnormal functioning of the adrenal cortex itself and is called **Addison's disease**, whereas secondary adrenocortical insufficiency is caused by failure of the pituitary gland to produce enough CORTICOTROPIN, which stimulates hormone release from the adrenal cortex.

**adrenocorticoid** *n.* see CORTICOSTEROID.

**adrenocorticotrophic hormone (ACTH)** see CORTICOTROPIN.

**adrenogenital syndrome** see CONGENITAL ADRENAL HYPERPLASIA.

**adrenoleukodystrophy** *n.* a genetic disease characterized by destruction of the MYELIN SHEATH surrounding the neurons of the brain (i.e., demyelination) and progressive dysfunction of the adrenal gland. Nerve function becomes erratic, resulting in a variety of physiological and behavioral symptoms involving changes in body tone, motor movements, gait, speech, ability to eat, vision, hearing, memory, attention, and cognitive processes. There are several types of adrenoleukodystrophy, of which the childhood X-chromosome-linked form is the most common and severe.

**adrenoreceptor** *n.* see ADRENERGIC RECEPTOR.

**ADS** abbreviation for ACTION DISORGANIZATION SYNDROME.

**ADS model** abbreviation for APERTURE, DRAW, SYNTAX MODEL.

**adult** *n.* **1.** a person who has reached ADULTHOOD. **2.** a person who has reached the legal age of maturity. Although it may vary across jurisdictions, an individual 18 years of age is typically considered an adult. —**adult** *adj.*

**adult attachment** see ATTACHMENT STYLE.

**Adult Attachment Interview (AAI)** an hour-long PATTERNED INTERVIEW used for assessing a person's perceptions of and attitudes toward emotionally close relationships. It consists of 18 questions that ask participants to reflect on their childhood experiences with caregivers while maintaining coherent and collaborative discourse with the interviewer. The participants' responses are classified according to five categories of adult attachment: (a) **dismissing**, in which interviewees idealize their early relationships but cannot provide specific supporting examples (corresponding to the ANXIOUS-AVOIDANT ATTACHMENT of infancy); (b) **preoccupied**, in which interviewees describe their early parental experiences as overly involving and angry (corresponding to the ANXIOUS-RESISTANT ATTACHMENT of infancy); (c) **secure-autonomous**, in which interviewees provide objective, coherent accounts of their relationships (corresponding to the SECURE ATTACHMENT of infancy); (d) **unresolved-disorganized**, in which interviewees show lapses in reasoning when discussing loss or abuse (corresponding to the DISORGANIZED ATTACHMENT of infancy); and (e) **cannot classify**, in which interviewees use contradictory language and show characteristics of multiple categories (currently unassociated with a pattern in infancy). See also ATTACHMENT STYLE. [originally developed in 1984 by U.S. developmental psychologists Carol George, Nancy R. Kaplan (1956– ), and Mary Main]

**Adult Children of Alcoholics (ACOA)** a TWELVE-STEP PROGRAM for adults who were raised in a family environment where alcoholism or other family dysfunctions were present. See also SELF-HELP GROUP.

**adult day care** a group program for the nonresidential care and supervision of adults with functional impairments, designed to meet their health, social, and functional needs in a setting other than their homes. See DAY CARE CENTER.

**adult development** biological, psychological, and sociocultural developmental processes that begin in late adolescence and continue through old age.

**adult education** formal schooling, often offered at night, that is specifically appropriate for adults who wish either to improve their work or career performance or to learn about a particular subject area of interest. See also CONTINUING EDUCATION.

**adultery** *n.* a voluntary sexual relationship between a married person and an individual who is not his or her spouse. In most Western countries, this is grounds for divorce; in some other cultures, adulterers may face severe social sanctions or legal penalties, including death. See also INFIDELITY. —**adulterer** *n.* —**adulterous** *adj.*

**adult foster care** the provision of community-based living arrangements to adults who require supervision, personal care, or other services in daily living on a 24-hour basis. Host families open their own homes to, and act as caregivers for, such adults who are unable safely to live independently, which is what distinguishes **adult foster homes** from other RESIDENTIAL CARE facilities.

**adult home** an ASSISTED-LIVING residence that provides shared rooms, common meals, personal care services, activities, and protective oversight to adults who are unable to live independently. Intensive medical or nursing services are generally not available.

**adulthood** *n.* the period of human development in which full physical growth and maturity have been achieved and certain biological, cognitive, social, personality, and other changes associated with the aging process occur. Beginning after adolescence, adulthood is sometimes divided into young adulthood (roughly 20 to 35 years of age); middle adulthood (about 36 to 64 years); and later adulthood (age 65 and beyond). The last is sometimes subdivided into young-old (65 to 74), old-old (75 to 84), and oldest old (85 and beyond). The oldest old group is the fastest growing segment of the population in many developed countries. See also EMERGING ADULTHOOD.

**adultomorphism** *n.* 1. the attribution of adult traits or motives to children. Compare PEDOMORPHISM. 2. more specifically, the tendency to reconstruct developmental phases by extrapolating from adult psychopathology. —**adultomorphic** *adj.*

**adult-onset diabetes** see DIABETES MELLITUS.

**adult progeria** see AGING DISORDER.

**adult sensorineural lesion** see SENSORINEURAL LESION.

**adult stem cell** see STEM CELL.

**advance directive** a legal mechanism for individuals to specify their wishes and instructions about prospective health care in the event they later become unable to make such decisions. This can be achieved by means of a **durable power of attorney**, a legal document designating a **health care proxy** to make health care decisions on another person's behalf. Other advance directives include a **living will**, a legal document clarifying a person's wishes regarding future medical or, increasingly, mental health treatment; and a **do not resuscitate (DNR)** order stating that cardiopulmonary resuscitation (CPR) is not to be performed if the patient's heart or breathing stops. Federal law requires hospitals, nursing homes, and other institutions that receive Medicare or Medicaid funds to provide all patients upon admission with written information regarding advance directives. See also INFORMED CONSENT.

**advanced organizers** verbal or written information

presented to students before a lecture or other teaching session to enhance their attentiveness and information acquisition in the subsequent lecture. The purposes are (a) to promote an initial understanding of the content, (b) to familiarize students with the way in which information is to be presented, and (c) to identify the purposes for learning the subsequent material. Schematic representations, templates, and prior knowledge information processing are ways of enhancing advanced organization.

**advanced placement examinations (AP)** ACHIEVEMENT TESTS that (a) give high school students an opportunity to gain admission to college with advanced standing in one or more subjects (the **College Entrance Examination Board Advanced Placement Program**) or (b) evaluate college-level education acquired through independent study and other nontraditional procedures (see COLLEGE LEVEL EXAMINATION PROGRAM).

**advantage by illness** see SECONDARY GAIN.

**advantage law** see LAW OF ADVANTAGE.

**adventitious** *adj.* appearing or occurring unexpectedly or in an unusual place; accidental. The term is often used specifically to describe a condition or disorder that has occurred as a result of injury or illness following a period of normal function. Compare CONGENITAL.

**adventitious deafness** a loss of hearing that results from injury or illness following a period of normal hearing ability. Compare CONGENITAL DEAFNESS.

**adventitious reinforcement** see ACCIDENTAL REINFORCEMENT.

**adventitious visual impairment** partial or total visual impairment that results from injury or illness following a period of normal visual ability. Onset of the impairment can produce severe grief, mourning reactions, and dependency. As a consequence, any residual visual capacity may not be used effectively, exacerbating psychological and social-adjustment problems. Also called **acquired visual impairment**. Compare CONGENITAL VISUAL IMPAIRMENT.

**adventure-recreation model** a model for those who seek risk in outdoor recreational activities. It establishes the relationship among level of engagement, type and level of risk, social orientation, locus of decision making, frequency of participation, and preferred environment. Also called **risk-recreation model**.

**adversarial system** the type of legal system, as in the United States, in which a dispute between opposing parties is heard before an independent TRIER OF FACT (i.e., a judge or jury). In many European countries, but not the United Kingdom, an **inquisitorial system** is used, in which the judge leads the investigation by interrogating the parties.

**adverse drug reaction (ADR)** any unintended, harmful, and potentially fatal response to a drug. Reactions may be genetically determined (as in the case of HYPERSENSITIVITY), in which case they are highly individual and can be difficult to predict, or they may arise through interactions with other prescribed or nonprescribed drugs or with dietary items (as in the case of MONOAMINE OXIDASE INHIBITORS). This term sometimes is used synonymously with SIDE EFFECT, but an adverse drug reaction more properly denotes an unexpected negative occurrence, whereas side effects may be positive or negative and are usually anticipated. Also called **adverse drug event (ADE)**; **adverse event**; **adverse reaction**.

**adverse event 1.** in health care, an injury or harmful effect resulting from medical intervention or research. **2.** in pharmacology, see ADVERSE DRUG REACTION.

**adverse impact** the deleterious effect that certain hiring procedures or selection criteria may have on the employment chances of those in a PROTECTED CLASS. For example, testing for competence in written English might have an adverse impact on recent immigrants; such testing should therefore be avoided unless this skill is a BONA FIDE OCCUPATIONAL QUALIFICATION. Also called **disparate impact**. See also GRIGGS V. DUKE POWER CO.; UNIFORM GUIDELINES FOR EMPLOYEE SELECTION PROCEDURES.

**adverse witness** an individual who reveals bias against the party that called him or her to give evidence in a court of law. An adverse witness may be a HOSTILE WITNESS; the two terms often are used interchangeably.

**advertisement** *n.* **1.** a public announcement appearing in print, broadcast, or electronic media that is designed to bring individuals' attention to a particular item or service in order to encourage the purchase, consumption, or increased use of that item or service. See also ADVERTISING PSYCHOLOGY; ADVERTISING RESEARCH. **2.** in animal behavior, a signal or display that emphasizes or calls attention to the organism producing it. For example, a male bird defending a territory might use advertisement in the form of bright coloration and conspicuous song both to attract mates and to deter competing males. Compare CAMOUFLAGE.

**advertising psychology** the study of the psychological impact that advertisements in various media have on prospective buyers and of the factors contributing to their effectiveness, including different presentation techniques and physical and technological characteristics.

**advertising research** the study of (a) the selection of effective advertising APPEALS for specific products or brands; (b) the creation of PRODUCT IMAGES, including trade names and package designs; and (c) the development of methods of measuring the effectiveness of advertising campaigns in different media. Advertising research is also used in generic advertising, that is, in the advertising of an industry or product category, such as cigars or coffee, rather than of specific brands.

**advertising response modeling (ARM)** statistical techniques used to assess the ability of advertising messages to reach and influence target audiences. In combination with sales data, these techniques determine optimal levels of advertising.

**advice giving** a COUNSELING technique in which the therapist advises the client on alternatives or options for consideration.

**advocacy** *n.* speaking or acting on behalf of an individual or group to uphold their rights or explain their point of view. An individual engaged in advocacy is called an **advocate**, of which there are two general types: A **case advocate** represents a single individual, and a **class advocate** represents a whole group. An example of a case advocate is a therapist who speaks for a client in court hearings or other situations involving decisions based on the client's mental health or related issues. An example of a class advocate is an individual in health care who represents consumers to protect their rights to effective treatment. See OMBUDSMAN.

**AEA** abbreviation for arachidonoyl ethanolamide. See ENDOGENOUS CANNABINOID.

**AED** abbreviation for ACADEMY FOR EATING DISORDERS.

**AEP** abbreviation for AVERAGE EVOKED POTENTIAL.

**AEq** abbreviation for AGE EQUIVALENT.

**AERA** abbreviation for AMERICAN EDUCATIONAL RESEARCH ASSOCIATION.

**aerial perspective** a monocular cue to DEPTH PERCEPTION consisting of the relative clarity of objects under varying atmospheric conditions. Nearer objects are usually clearer in detail, whereas more distant objects are less distinct and appear bluer.

**aero-** (**aer-**) *combining form* air or gas.

**aerobic activity** see ENDURANCE ACTIVITY.

**aerobic exercise** physical activity, typically prolonged and of moderate intensity (e.g., walking, jogging, cycling), that involves the use of oxygen in the muscles to provide the needed energy. Aerobic exercise strengthens the cardiovascular and respiratory systems and is associated with a variety of health benefits, including increased endurance, reduction of body fat, and decreased depression and anxiety. Compare ANAEROBIC EXERCISE.

**aesthesiometer** *n.* see ESTHESIOMETRY.

**aesthesiometry** *n.* see ESTHESIOMETRY.

**aesthetic appreciation** the extent to which a stimulus is enjoyed because of its beauty or some other factor associated with AESTHETIC PREFERENCE.

**aesthetic emotion** an emotion linked to the experience of natural beauty or art, including abstract visual displays, music, and dance.

**aesthetic evolution** the concept that the arts change in an orderly fashion over time because of intrinsic factors rather than as a response to extra-artistic forces. According to this conception, art has to be novel; this leads to systematic changes in content and styles.

**aesthetic overshadowing** the fact that a single prominent characteristic of a stimulus accounts almost entirely for preference for the stimulus generally, with other characteristics being largely ignored. For example, a person viewing a painting who finds the colors appealing will tend to disregard its size, complexity, and other aspects in determining his or her overall liking for the item.

**aesthetic preference** the extent to which a particular stimulus is preferred to others for reasons of beauty or taste. See also AROUSAL POTENTIAL.

**aesthetics** *n.* the philosophical study of beauty and art, concerned particularly with the articulation of taste and questions regarding the value of aesthetic experience and the making of aesthetic judgments. See also ENVIRONMENTAL AESTHETICS; PSYCHOLOGICAL AESTHETICS. —**aesthetic** *adj.*

**aesthetic taste** an individual's judgment of works of art as being more or less beautiful or otherwise pleasing.

**aesthetic value** the emotional or spiritual value attributed to a work of art or nature because of its beauty or other factors associated with AESTHETIC PREFERENCE.

**affect** *n.* any experience of feeling or emotion, ranging from suffering to elation, from the simplest to the most complex sensations of feeling, and from the most normal to the most pathological emotional reactions. Often described in terms of POSITIVE AFFECT or NEGATIVE AFFECT, both mood

and emotion are considered affective states. Along with COGNITION and CONATION, affect is one of the three traditionally identified components of the mind.

**affect-block** *n.* a condition marked by an inability to adequately express or experience emotions, especially strong ones, because of a dissociation of these emotions from ideas or thoughts. It is characteristically seen in individuals with schizophrenia or obsessive-compulsive disorder.

**affect display** a facial, vocal, or gestural behavior that serves as an indicator of AFFECT. See EMOTIONAL EXPRESSION.

**affect intensity** the strength of experience of emotional states from very low to very high, irrespective of the nature (e.g., positive versus negative) of those states.

**affect inversion** see REVERSAL OF AFFECT.

**affection** *n.* fondness, tenderness, and liking, especially when nonsexual. Feelings of emotional attachment between individuals, particularly human infants and caregivers, are called **affectional bonds**. They are particularly important to ATTACHMENT THEORY, and their presence is evidenced by proximity-seeking behaviors and mutual distress if loss or involuntary separation occurs. —**affectionate** *adj.*

**affective** *adj.* demonstrating, capable of producing, or otherwise pertaining to emotion or feelings. —**affectivity** *n.*

**affective aggression** see AGGRESSION.

**affective ambivalence** see AMBIVALENCE.

**affective assessment** evaluation of an individual's emotional state and degree of emotional intensity.

**affective–cognitive consistency** the degree to which the affective and cognitive BASES OF AN ATTITUDE are evaluatively consistent with one another. For example, if the affective basis is extremely positive and the cognitive basis is extremely negative, affective–cognitive consistency is low. See also AFFECTIVE–EVALUATIVE CONSISTENCY; COGNITIVE–EVALUATIVE CONSISTENCY.

**affective–cognitive structure** the combination of an emotional experience with a thought or image, such as the linking of the emotions of relief and fear reduction to the idea of a parent as a haven of safety.

**affective commitment** that element of an employee's ORGANIZATIONAL COMMITMENT that can be attributed to a feeling of involvement with the organization and an identification with its goals and objectives. Compare CONTINUANCE COMMITMENT.

**affective concordance** see CONCORDANCE.

**affective development** see EMOTIONAL DEVELOPMENT.

**affective discharge** the expression of strong emotions (e.g., sorrow or anger) by clients undergoing therapy in which the therapist uses techniques aimed at facilitating deeper exploration of past experiences. Affective discharge is believed to be a release of psychic energy. Also called **cathectic discharge**.

**affective discordance** see DISCORDANCE.

**affective disorder** see MOOD DISORDER.

**affective domain** see BLOOM'S TAXONOMY.

**affective education** in BLOOM'S TAXONOMY of educational objectives, any program in which learning is focused

on the relation between thoughts, feelings, and behavior. The goals of affective education are twofold: (a) to help children become familiar with a range of feelings (e.g., anger, fear, sadness, and excitement), differentiate among them, and understand the connections of these feelings to thoughts and behaviors; and thus (b) to encourage positive behavior change.

**affective engineering** see KANSEI ENGINEERING.

**affective equilibrium** the idea that a single affective judgment for a set of stimuli (e.g., pleasant or unpleasant) is formed around the median of the judgments made for individual stimuli in the set.

**affective–evaluative consistency** the degree to which the affective basis of an attitude (see BASES OF AN ATTITUDE) and the overall attitude are evaluatively consistent with one another. For example, if the affective basis is extremely positive and the overall attitude is extremely negative, affective–evaluative consistency is low. See also AFFECTIVE–COGNITIVE CONSISTENCY; COGNITIVE–EVALUATIVE CONSISTENCY.

**affective forecasting** predicting one's own future emotional states, especially in connection with some event or outcome that one faces. People often “forecast” more extreme and lasting emotional reactions to events than they actually experience.

**affective hallucination** a hallucination that occurs in the context of AFFECTIVE PSYCHOSIS and has a manic or depressive content.

**affective interaction** **1.** highly emotional interpersonal interactions, as may occur in individual or GROUP THERAPY or in a family. **2.** in robotics and computer design, the process of communicating emotional information to and from the user to improve the user experience.

**affective logic** the hypothesis that emotions have their own independent set of mental operations, distinct from those governing other forms of mental life. [proposed by Théodule RIBOT]

**affectively based persuasion** an active attempt to change an attitude primarily by altering the emotions, feelings, or mood states associated with the ATTITUDE OBJECT. Also called **emotionally based persuasion**. See also BASES OF AN ATTITUDE; FEAR APPEAL. Compare COGNITIVELY BASED PERSUASION.

**affective meaning** the attitude or emotion elicited by a stimulus, such as a musical piece, a drawing, or—especially—a word or phrase. The term is sometimes used interchangeably with **connotative meaning** (see DENOTATIVE MEANING).

**affective memory** see EMOTIONAL MEMORY.

**affective neuroscience** a discipline that addresses the brain mechanisms underlying emotions. In seeking to understand the particular roles of major subcortical and cortical structures in the elicitation, experience, and regulation of emotion, affective neuroscience provides an important framework for understanding the neural processes that underlie psychopathology, particularly the mood and substance-related disorders. Also called **social affective neuroscience**. [term coined by Estonian-born U.S. physiological psychologist Jaak Panksepp (1943– )]

**affective psychosis** a mood disorder accompanied by delusions or hallucinations (i.e., PSYCHOTIC FEATURES). The mood disruption precedes the psychotic symptoms, and the



psychotic symptoms only occur during a MAJOR DEPRESSIVE EPISODE or a MANIC EPISODE.

**affective rigidity** a condition in which emotions or feelings remain unchanged through varying situations in which such changes would normally occur. Affective rigidity is common in obsessive-compulsive disorder and schizophrenia.

**affective theory** a framework underlying certain approaches to psychotherapy that emphasizes the importance of feelings and emotions in therapeutic change.

**affective tone** the mood or feeling associated with a particular experience or stimulus. In psychotherapy, when a client fails to recognize his or her affective tone, the therapist may draw the client's attention to it as a primary element of the therapeutic interaction. Also called **feeling tone**.

**affective well-being** see SUBJECTIVE WELL-BEING.

**affectivity** *n.* the degree of a person's response or susceptibility to pleasure, pain, and other emotional stimuli. Evaluation of affectivity is an important component of a psychological examination; the therapist or clinician may look for evidence of such reactions as BLUNTED AFFECT, INAPPROPRIATE AFFECT, LOSS OF AFFECT, AMBIVALENCE, DEPERSONALIZATION, elation, depression, or anxiety.

**affect misattribution procedure (AMP)** an IMPLICIT ATTITUDE MEASURE in which the target object to be evaluated is first presented and then is immediately followed by presentation of an ambiguous stimulus (e.g., a Chinese pictograph). The respondent is required to evaluate the ambiguous stimulus as pleasant or unpleasant. The procedure is based on the premise that affective responses to the initial target object will be misattributed to, and thus will influence evaluations of, the ambiguous stimulus, thereby providing insight into the evaluation of the target object. [developed by U.S. psychologist B. Keith Payne and his colleagues]

**affect regulation** the attempt to alter or control one's mood or emotional state so as to maximize pleasant experiences and minimize unpleasant ones. Because people cannot usually change their emotions simply by deciding to feel differently, they use many indirect strategies for affect regulation. These include cognitive techniques such as REFRAMING and distraction, behavioral methods such as PROGRESSIVE RELAXATION and meditation, and unconscious processes such as DENIAL and DISSOCIATION.

**affect scale** any of several self-rated measures for quantifying the intensity of moods or emotional states. An example is the POSITIVE AND NEGATIVE AFFECT SCHEDULE.

**affect theory** the idea that feelings and emotions are the primary motives for human behavior, with people desiring to maximize their positive feelings and minimize their negative ones. Within the theory, affects are considered to be innate and universal responses that create consciousness and direct cognition. Eight primary affects are postulated: the positive ones of excitement and enjoyment; the negative ones of distress, fear, shame, disgust, and anger; and the relatively neutral one of interest. Despite their biological nature and triggering mechanisms, primary affects are subject to significant social modification and social causation. See also SCRIPT THEORY. [proposed in 1962 by Silvan S. TOMKINS]

**afferent** *adj.* conducting or conveying from the periphery toward a central point. Compare EFFERENT.

**afferent nerve fiber** a nerve fiber, typically a sensory fiber, that conducts impulses toward the brain or spinal cord or from a lower to a higher center of the central nervous system. Compare EFFERENT NERVE FIBER.

**afferent pathway** a NEURAL PATHWAY that conducts impulses from a sense organ toward the brain or spinal cord or from one brain region to another. Compare EFFERENT PATHWAY.

**afferent sensory neuron** a neuron that conducts impulses from a sense organ to the brain or spinal cord.

**afferent stimulation** stimulation of a sensory system, leading to conduction of neural impulses to the brain or spinal cord.

**affiliation** *n.* a social relationship in which a person joins or seeks out one or more other individuals, usually on the basis of liking or a personal attachment rather than perceived material benefits. Some propose that the seeking of cooperative, friendly association with others who resemble or like one or whom one likes is a fundamental human desire, referring to it variously as the **affiliation motivation**, **affiliative drive**, **affiliative need**, or NEED FOR AFFILIATION. See also BELONGING. —**affiliative** *adj.*

**affinity** *n.* **1.** an inherent attraction to or liking for a particular person, place, or thing, often based on some commonality. See ELECTIVE AFFINITY. **2.** relationship by marriage or adoption rather than blood. Compare CONSANGUINITY. **3.** in pharmacology, see BINDING AFFINITY.

**affirmative** *n.* in linguistics, the form of a sentence used to make a positive assertion about something rather than a NEGATIVE statement or a question (see INTERROGATIVE).

**affirmative action** a policy designed to promote equal educational or employment opportunities by requiring active recruitment or promotion of people from minority groups or another PROTECTED CLASS. The policy is controversial in some of its aspects and has been subject to legal challenges, particularly on the grounds that it constitutes REVERSE DISCRIMINATION.

**affirmative defense** a defense in which the defendant admits committing the act with which he or she is charged but provides evidence that undermines the prosecution's or plaintiff's claim of criminal intent (see MENS REA). THE INSANITY DEFENSE, DIMINISHED RESPONSIBILITY, contributory negligence (the defendant's claim that the plaintiff acted carelessly or with disregard and was partially at fault), and self-defense are examples of affirmative defenses.

**affirmative postmodernism** a perspective in POSTMODERNISM holding that social, cultural, and political progress is possible within a postmodern framework of assumptions. It is associated most closely with French philosopher Jean-François Lyotard (1924–1998). Compare SKEPTICAL POSTMODERNISM.

**affirmative therapy** a socioculturally informed intervention that empowers clients and their communities, particularly in situations in which ethnic, gender, or sexual orientation diversity has been resisted or in which normal conditions (e.g., gay identity) have been pathologized. Emphasizing self- and cultural awareness, this therapy may be practiced as a distinct intervention or within the context of other psychotherapies.

**affixation** *n.* the linguistic process in which **affixes** (PREFIXES, SUFFIXES, and INFIXES) are added to words to create inflected or derived forms (e.g., *un-glue*; *walk-ing*; *material-*

ize). Languages vary in extent of affixation and frequency of types of affixation. See also AGGLUTINATION; AGGLUTINATIVE LANGUAGE. —**affix** *vb*.

**affordance** *n.* **1.** in the theory of ECOLOGICAL PERCEPTION, any property of the physical environment that offers or allows an organism the opportunity for a particular physical action. An example is the location of the handle on a refrigerator. When the handle is on the left-hand side, it affords a left-hand reach-and-grasp movement. **2.** the ease with which the action possibilities of an item or system can be discerned, as in “this remote control has bad affordance.”

**affricate** *n.* a speech sound consisting of a PLOSIVE (e.g., [t]) followed immediately by a FRICATIVE (e.g., [sh]), such as the [ch] sound in *chair*.

**A fiber** a myelinated nerve fiber (axon) of the somatosensory system. A fibers are subdivided by diameter, ranging from largest to smallest: **A-alpha fibers** are 13 to 20  $\mu$ m in diameter and transmit information from proprioceptors of skeletal muscles, **A-beta fibers** are 6 to 12  $\mu$ m and transmit information from mechanoreceptors of the skin, and **A-delta fibers** are 1 to 5  $\mu$ m and transmit temperature and sharp pain information. See also B FIBER; C FIBER.

**AFMET** acronym for Air Force Medical Evaluation Test, the former name for the BIOGRAPHICAL EVALUATION AND SCREENING OF TROOPS program.

**AFP** abbreviation for ALPHA-FETOPROTEIN.

**AFQT** abbreviation for ARMED FORCES QUALIFICATION TEST.

**AFR** abbreviation for ALCOHOL FLUSH REACTION.

**African American** a citizen or resident of the United States whose ancestry, at least in part, can be traced to sub-Saharan Africa. Many are descendants of slaves from West Africa, but immigrants from other parts of Africa, the Caribbean, and South America also identify as part of this group, currently the largest racial minority in the United States.

**African American Vernacular English (AAVE)** see BLACK ENGLISH.

**African trypanosomiasis** see SLEEPING SICKNESS.

**afterbirth** *n.* the third and final stage of birth, involving expulsion of the placenta and other membranes from the uterus. See also DELIVERY; LABOR.

**aftercare** *n.* **1.** a program of outpatient treatment and support services provided for individuals discharged from an institution, such as a hospital or mental health facility, to help maintain improvement, prevent relapse, and aid adjustment of the individual to the community. Aftercare may also refer to inpatient services provided for convalescent patients, such as those who are recovering from surgery. **2.** a form of day care, as in programs designed to care for children after school. See CHILD CARE.

**aftercurrent** *n.* see AFTERPOTENTIAL.

**afterdischarge** *n.* continued production of nerve impulses after the stimulus that caused the activity has been removed.

**aftereffect** *n.* the altered perception of a sensory stimulus that results from prolonged exposure to another stimulus. Aftereffects are often visual and are usually the inverted form of the original stimulus. For example, viewing a pattern of lines tilted to the left will make a pattern of

vertical lines appear to be tilted to the right (the **tilt aftereffect**; **TAE**). There are various other types of aftereffects, including the CONTINGENT AFTEREFFECT and the MOTION AFTEREFFECT.

**afterimage** *n.* the image that remains after a stimulus ends or is removed. A **positive afterimage** occurs rarely, lasts a few seconds, and is caused by a continuation of receptor and neural processes following cessation of the stimulus; it has approximately the color and brightness of the original stimulus. A **negative afterimage** is more common, is often more intense, and lasts longer. It is usually complementary to the original stimulus in color and brightness; for example, if the stimulus was bright yellow, the negative afterimage will be dark blue.

**after-nystagmus** *n.* the element of VESTIBULAR NYSTAGMUS that occurs after rotating the head, consisting of rapid, involuntary movement of the eyes in the direction opposite to that of the rotation.

**afterplay** *n.* affectionate and sensual activity (e.g., hugging, caressing, kissing) that continues after orgasm is achieved in sexual activity.

**afterpotential** *n.* the part of an ACTION POTENTIAL that remains after the electric potential has reached its peak, or spike. Also called **aftercurrent**. See also NEGATIVE AFTERPOTENTIAL; POSITIVE AFTERPOTENTIAL.

**2-AG** abbreviation for 2-arachidonoylglycerol. See ENDOGENOUS CANNABINOID.

**agape** *n.* a complex form of love involving feelings of tenderness; protectiveness; self-denial; and aesthetic preference for the features, gestures, speech, and other traits of a person. The term, which derives from a Greek word meaning “brotherly love,” is sometimes used to denote an unselfish love as taught by such religious figures as Jesus and the Buddha.

**AGCT** abbreviation for Army General Classification Test. See ARMY TESTS.

**age 1.** *n.* the amount of time that has passed since an organism's birth; that is, an individual's CHRONOLOGICAL AGE. Compare GESTATIONAL AGE. **2.** *n.* a measure of physical or mental development (e.g., ANATOMICAL AGE, EDUCATIONAL AGE, or READING AGE). **3.** *n.* a specific period of human life (as in middle age, old age). See DEVELOPMENTAL LEVELS. **4.** *vb.* to grow older. See AGING; SECONDARY AGING.

**age-associated memory impairment (AAMI)** the minor memory deficits often associated with normal aging, for example, forgetting the name of a recently read book. These changes are not associated with dementias, such as Alzheimer's disease, and affect the ability to acquire and recall new information rather than the recall of established memories (e.g., the name of one's hometown). Also called **benign senescence**; **benign senescent forgetfulness**.

**age calibration** a process in which a test score is assigned a value so that the score may be interpreted relative to other test takers in the same age range.

**age cohort** see COHORT.

**age crisis** a theoretical, qualitative change in personality associated with inner conflicts occurring at a particular stage of life. Empirical research has failed to find indications of such radical changes in personality associated with a particular stage of life. See also MIDLIFE CRISIS.

**age dedifferentiation hypothesis** see DIFFERENTIATION—DEDIFFERENTIATION HYPOTHESIS.

**age differentiation hypothesis** see DIFFERENTIATION—DEDIFFERENTIATION HYPOTHESIS.

**age discrimination** differential treatment of individuals on the basis of chronological age. In the United States, federal legislation has been enacted making age discrimination illegal in various contexts. An example is the AGE DISCRIMINATION IN EMPLOYMENT ACT. See AGEISM.

**Age Discrimination in Employment Act (ADEA)** a U.S. federal law, enacted in 1967, that prohibits employment practices that discriminate against those aged 40 or older, unless the employer can demonstrate that youth is a BONA FIDE OCCUPATIONAL QUALIFICATION for the job in question. See also FUNCTIONAL AGE.

**age effect** **1.** in research, any outcome associated with being a certain age. Such effects may be difficult to separate from COHORT EFFECTS and PERIOD EFFECTS. **2.** in the psychology of groups, any of various cognitive and interpersonal consequences that result when group members respond to others on the basis of their age. See also AGEISM.

**age equivalent (AEq)** a measure of development or performance expressed in terms of the average chronological age at which the observed score is obtained. For example, assume a student obtains a score of 95 on a particular test, a value typical of the average performance of students in the eighth grade. Thus, the age equivalent of 95 is 13, the age of most eighth graders. Also called **age-equivalent score**; **test age**.

**age-equivalent scale** a system for expressing test scores in terms of the chronological ages at which the scores are typically obtained.

**age-grade scaling** a method of standardizing a test by establishing norms based on a sample of children who are of the typical chronological age for their grade in school.

**ageism** *n.* the tendency to be prejudiced against older adults, to negatively stereotype them (e.g., as unhealthy, helpless, or incompetent), and to discriminate against them, especially in employment and health care. —**ageist** *adj.* [coined in 1969 by U.S. gerontologist and psychiatrist Robert N. Butler (1927–2010)]

**agency** *n.* the state of being active, usually in the service of a goal, or of having the power and capability to produce an effect or exert influence.

**agency shop** an arrangement between a labor union and an employer in which employees who are not union members pay a representational fee (usually equal to the dues paid by members) as a condition of employment. See also CLOSED SHOP; OPEN SHOP; UNION SHOP.

**agency theory** a theory that describes economic and organizational activity in terms of a series of agreements between principals, who require goods or services, and agents, who supply these goods or services. Central to this theory is the rational economic assumption that both agents and principals will attempt to maximize their respective UTILITIES. An **agency problem** may arise when the interests of principals (e.g., shareholders in a company) and agents (e.g., managers) are not congruent, or when principals have insufficient information about the activities of agents. Agency theory suggests ways in which these problems can be reduced, notably by redesigning contracts or compensation schemes so that agents have an incentive

to act in the best interests of principals (e.g., by some form of GAINSHARING) and by improving monitoring procedures.

**agenesis** *n.* the failure of a body part to develop fully or to develop at all. An example is **corpus callosum agenesis**, in which the nerve tract joining the two cerebral hemispheres (see CORPUS CALLOSUM) fails to develop. —**agenetic** *adj.*

**agenitalism** *n.* **1.** congenital absence of sex organs. **2.** a condition caused by the lack of secretion of sex hormones.

**age norm** the standard score or range of scores that represent the average achievement level of people of a particular chronological age.

**agent** *n.* **1.** a person or entity that acts or has the capacity to act, particularly on behalf of another or of a group. For example, an agent may be a therapist who helps a client gain self-understanding or an individual who initiates a social interaction. **2.** a means by which something is done or caused. For example, an infectious agent is a bacterium or other microorganism that causes a particular disease. **3.** in linguistics, the entity that performs the main action in a clause or sentence. It is prototypically an ANIMATE NOUN and usually, but not always, the grammatical SUBJECT of the clause. The agent is an important category in CASE GRAMMAR. Compare EXPERIENCER; INSTRUMENTAL; PATIENT. **4.** in parapsychology, the person who instigates an alleged occurrence of PSYCHOKINESIS or TELEPATHY. Compare PERCIPIENT. See also SENDER. **5.** in philosophy, an entity that possesses both the power to bring about an event and the power to refrain from bringing it about. In this sense, an agent possesses FREE WILL or some similar power to act or forbear. A person as agent is considered to be partly or wholly the originator of his or her own actions. **6.** a computer program that makes use of DISTRIBUTED COGNITION in problem solving. This type of program is designed for use in such areas as telecommunications and Internet-based tasks. —**agentive** *adj.*

**agentic orientation** an emphasis on achieving, doing, succeeding, and making one's own mark in the world, which may be expressed through such traits as COMPETITIVENESS and SELF-FOCUS.

**agentic state** a psychological condition that occurs when individuals, as subordinates to a higher authority in an organized status hierarchy, feel compelled to obey the orders issued by that authority. See BEHAVIORAL STUDY OF OBEDIENCE; DESTRUCTIVE OBEDIENCE. [described by Stanley MILGRAM]

**age of consent** the age at which an individual is considered legally competent to assent to something, such as consensual sex, marriage, treatment, or participation in research. See also INFORMED CONSENT.

**age of onset** the chronological age at which symptoms of a disease or disorder first appear in an individual. One of the hallmarks of some genetic syndromes is that the age of onset is earlier in individuals with hereditary susceptibility than in other cases.

**age ratio** one indicator of the predictive power of an APITUDE TEST, obtained by dividing the student's chronological age at one administration of a test by his or her age at a later administration of the same test.

**age regression** a hypnotic technique in which the therapist helps the client recall a crucial experience by inducing amnesia for the present, then suggesting that he or she return, year by year, to the earlier date when a particular experience took place. This technique is also used in foren-

sic contexts to help eyewitnesses and victims recall their experiences. The use of age regression in either context is controversial, given the potential for FALSE MEMORIES and the debatable legitimacy of RECOVERED MEMORIES.

**ageusia (agusia)** *n.* loss or absence of the ability to taste. Causes may include a failure of taste receptors to form; a loss of taste receptors due to injury, disease, or advanced age; or damage to the sensory nerves that transport taste sensations to the central nervous system. —**ageusic** *adj.*

**agglutination** *n.* in linguistics, the creation of a word from the combination of several MORPHEMES that remain essentially unchanged in the process. For example, the word *unbeatable* is created by the agglutination of the morphemes *un-*, *beat*, and *-able*. —**agglutinate** *vb.*

**agglutinative language** in LINGUISTIC TYPOLOGY, a language that expresses ideas in complex words formed by the AGLUTINATION of numerous distinct MORPHEMES. Turkish is considered a typical agglutinative language. Compare FUSIONAL LANGUAGE; ISOLATING LANGUAGE.

**aggravated damages** a sum of money a defendant is ordered to pay the plaintiff in a civil lawsuit to provide compensation for emotional harm. Aggravated damages are considered a type of COMPENSATORY DAMAGES and are awarded under circumstances in which the defendant's actions were particularly malevolent and caused the plaintiff significant anguish, distress, embarrassment, grief, humiliation, or other pain and suffering.

**aggravating factor** a fact relating to a crime or to the defendant that makes the offense more serious or supports the argument for a harsher sentence. An example is the use of a deadly weapon in the commission of a crime. Also called **aggravating circumstance**. Compare MITIGATING FACTOR.

**aggregate data** scores or observations that have been re-expressed by a SUMMARY STATISTIC. Calculating the arithmetic average of a set of test scores obtained over time for each individual in a group and then using each person's single average score as representative of his or her test performance would be an example of aggregating data.

**aggregate idea** an idea that is formed by recombination of the elements of a complex stimulus (such as the set of tones of a clanging noise) into a new COMPOUND STIMULUS (such as a musical chord). The new, aggregate idea can be characterized by its elements but is not itself contained in those elements. [defined by Wilhelm WUNDT]

**aggregation** *n.* **1.** a collection of organisms in one location with no obvious SOCIAL STRUCTURE or SOCIAL ORGANIZATION, possessing only a minimum of shared purpose or interdependence. Examples include people in a shopping mall, commuters on a subway platform, or a group of butterflies around a puddle of water. Compare GROUP. **2.** in statistics, a process of combining and summarizing a set of scores into a smaller set of scores that capture an aspect of the original set. Compare DISAGGREGATION. —**aggregate** *vb.* —**aggregate** *adj.*

**aggregation problems** the difficulty of separating individual effects from situational effects when established groups or institutions are used as the unit of analysis in an evaluation. For example, investigators are likely to attribute characteristics of the institution to the individual.

**aggression** *n.* behavior aimed at harming others physically or psychologically. It can be distinguished from anger

in that anger is oriented at overcoming the target but not necessarily through harm or destruction. When such behavior is purposively performed with the primary goal of intentional injury or destruction, it is termed **hostile aggression**. Other types of aggression are less deliberately damaging and may be instrumentally motivated (proactive) or affectively motivated (reactive). **Instrumental aggression** involves an action carried out principally to achieve another goal, such as acquiring a desired resource. **Affective aggression** involves an emotional response that tends to be targeted toward the perceived source of the distress but may be displaced onto other people or objects if the disturbing agent cannot be attacked (see DISPLACED AGGRESSION). In the classical psychoanalytic theory of Sigmund FREUD, the aggressive impulse is innate and derived from the DEATH INSTINCT, but many non-Freudian psychoanalysts and most nonpsychoanalytically oriented psychologists view it as socially learned or as a reaction to frustration (see FRUSTRATION-AGGRESSION HYPOTHESIS). See also PATHOLOGICAL AGGRESSION.

Aggression among nonhuman animals also exists, involving direct physical attack by one on another or the threat of such attack. Over the years, different researchers have identified different types of animal aggression based on such considerations as the members involved (e.g., intraspecific or interspecific), the apparent intent (e.g., offensive or defensive), or the stimuli eliciting them. One of the most influential classification schemes has been that proposed in 1968 by U.S. physiological psychologist Kenneth Evan Moyer (1919–2006). It describes PREDATORY AGGRESSION to obtain food and the converse ANTIPREDATORY AGGRESSION, TERRITORIAL AGGRESSION to repel intruders from an area, INTERMALE AGGRESSION against a competitor, FEAR-INDUCED AGGRESSION, **irritable aggression** in response to pain or deprivation of an item required for survival, SEXUAL AGGRESSION to secure mates, MATERNAL AGGRESSION to protect young offspring, and instrumental aggression. See also DOMINANCE AGGRESSION. —**aggressive** *adj.*

**aggression–frustration hypothesis** see FRUSTRATION-AGGRESSION HYPOTHESIS.

**aggressive character** a personality characterized by a hostile or competitive attitude to others and the pursuit of power, prestige, and material possessions. Karen D. HORNEY defined the development of such a character as one of three basic NEUROTIC TRENDS used as a defense against BASIC ANXIETY. Compare COMPLIANT CHARACTER; DETACHED CHARACTER.

**aggressive cue** a signal or stimulus in a person's environment that is interpreted as aggressive or that is typically associated with aggression.

**aggressive instinct** in psychoanalytic theory, a derivative of the DEATH INSTINCT that directs destructive impulses away from the self and toward the outside world.

**aggressive mimicry** the presence in a predatory species of physical or behavioral traits (or both) that closely resemble those of a nonpredatory species, with the result that potential prey more readily approach the predator. For example, the females of a species of firefly can imitate the sexual flash patterns of a different species, luring males of that species close enough to be eaten.

**aggressiveness** *n.* a tendency toward social dominance, threatening behavior, and hostility. It may occur sporadically or be a characteristic trait of an individual. —**aggressive** *adj.*

**aggressive-rejected child** in sociometric measures of peer acceptance, a child who is prone to hostile and antagonistic behavior toward, and is actively disliked by, his or her peers. Such children show more conduct-disorder psychopathology and delinquency later in adolescence. Compare WITHDRAWN-REJECTED CHILD. See also SOCIOMETRIC STATUS.

**aging** *n.* the biological and psychological changes associated with chronological age. A distinction is often made between changes that are due to normal biological processes (see PRIMARY AGING) and changes that are caused by age-related pathologies (see SECONDARY AGING).

**aging disorder** any disruption of the gradual structural and immune changes that occur with the passage of time, resulting in premature aging and increased probability of early death. An example is **progeria** (or **Hutchinson–Gilford progeria syndrome**), a very rare inherited disorder in which children age extremely rapidly and typically die of a heart attack or stroke between the ages of 10 and 15 years. Another example is **adult progeria** (or **Werner syndrome**), with an onset occurring before the age of 30 and an average life expectancy of 20 years from diagnosis; patients typically die of atherosclerosis or some form of cancer.

**aging in place** the ability of older individuals to live safely, independently, and comfortably in their own homes as they age and as their health-related and other needs change. Factors that influence whether an older individual can successfully age in place—that is, without need for long-term institutionalized care—include environmental characteristics of the “place” itself (e.g., home, neighborhood, community), such as its physical suitability, safety, and access to appropriate support services if needed, and personal characteristics or circumstances that support an individual’s independence, such as economic stability, positive relationships with family and friends, a sense of SELF-EFFICACY, and ability to manage ACTIVITIES OF DAILY LIVING.

**agitated depression** a MAJOR DEPRESSIVE EPISODE in which psychomotor agitation (excessive but purposeless activity), restlessness, and irritability predominate.

**agitation** *n.* a state of increased but typically purposeless and repetitious activity, as in PSYCHOMOTOR AGITATION.

**agitographia** *n.* very rapid writing with nonconscious omissions and distortions of letters, words, or parts of words.

**agitophobia** *n.* very rapid and cluttered speech in which sounds, words, or parts of words are omitted or distorted. Also called **agitolalia**.

**aglossia** *n.* congenital absence of the tongue, a condition rarely occurring in isolation and most often accompanied by other systemic abnormalities, such as cleft palate, malformed limbs, and missing fingers and toes. **Hypoglossia** refers to a short, incompletely developed tongue. Both aglossia and hypoglossia result in difficulty or inability to achieve articulation.

**agnosia** *n.* loss or impairment of the ability to recognize or appreciate the nature of sensory stimuli due to brain damage or disorder. Recognition impairment is profound and specific to a particular sensory modality. AUDITORY AGNOSIA, TACTILE AGNOSIA, and VISUAL AGNOSIA are the most common types, and each has a variety of subtypes.

**agnosic alexia** see ALEXIA.

**agnosticism** *n.* a skeptical position holding that the

truth or falsity of certain metaphysical ideas or propositions cannot be known. The word is most often used in regard to theological doctrines, especially to belief in the existence of God. [coined in 1869 by British biologist Thomas Henry Huxley (1825–1895)] —**agnostic** *adj.*, *n.*

**agnus castus** an herbal preparation derived from the flowers of the chasteberry tree and approved in Germany for use in the management of symptoms associated with the late luteal phase of the menstrual cycle (see PREMENSTRUAL DYSPHORIC DISORDER) and in the alleviation of menstrual cycle abnormalities or irregularities. Although its active components and mechanism of action are unknown, agnus castus has been shown to possess significant estrogenic activity and is thought to act upon the pituitary gland. Agnus castus may also possess dopaminergic activity, and thus its concurrent use with either DOPAMINE-RECEPTOR AGONISTS or DOPAMINE-RECEPTOR ANTAGONISTS is not recommended, given the potential interactions that may occur. Side effects of agnus castus use are rare but may include rashes and itching, nausea and vomiting, dizziness, headache, drowsiness, and confusion. Also called **vitex agnus castus**.

**agonadal** *adj.* denoting or resulting from absence of the primary sex organs (gonads, i.e., testes or ovaries).

**agonist** *n.* **1.** a drug or other chemical agent that binds to a particular receptor and produces a physiological effect, typically one similar to that of the body’s own neurotransmitter at that receptor. There are PARTIAL AGONISTS, which stimulate the receptor only somewhat to produce the same physiological effect as the natural neurotransmitter but to a lesser degree, and **inverse agonists**, which act at the receptor to produce a physiological effect opposite to that produced by another agonist at that same receptor. **2.** a contracting muscle whose action generates force in the intended direction. Compare ANTAGONIST. —**agonism** *n.* —**agonistic** *adj.*

**agonist–antagonist** a substance that simultaneously binds to multiple receptors, mimicking the action of the body’s natural neurotransmitter at one type of receptor and inhibiting that action at another, different type of receptor.

**agonistic behavior** competitive interactions involving components of both fear and aggression. In dominance or territorial encounters, behavioral interactions typically involve fluctuations in fearful and aggressive behavior within both parties, so that neither can be said to be purely aggressive or fearful.

**agoraphobia** *n.* an excessive, irrational fear of being in open or unfamiliar places, resulting in the avoidance of public situations from which escape may be difficult, such as standing in line or being in a crowd. In *DSM–IV–TR*, agoraphobia may accompany PANIC DISORDER (**panic disorder with agoraphobia**), in which an individual experiences unexpected panic attacks, or it may occur in the absence of panic disorder (**agoraphobia without history of panic disorder**), when an individual fears paniclike symptoms or limited symptom attacks but has not experienced full-blown panic attacks. In *DSM–5*, panic disorder and agoraphobia are treated as separate entities with separate criteria; their combined presence is considered two diagnoses. See also ANXIETY DISORDER. —**agoraphobic** *adj.*

**agrammatic comprehension** an inability to understand the meaning of sentences, even though the individual word items are understood correctly. This inability is

most often apparent where sentences depart from standard word order (in English, subject–active verb–object) or are syntactically complex. The impairment is associated with CONDUCTION APHASIA and agrammatism.

**agrammatism** *n.* a manifestation of APHASIA characterized by loss or impairment of the ability to use speech that conforms to grammatical rules, such as those governing word order. Also called **agrammatic aphasia**; **dysgrammatism**. —**agrammatic** *adj.*

**agranular cortex** the portion of the cerebral cortex that lacks GRANULE CELLS. It is found in layers I, III, and V of the cortex (see CORTICAL LAYERS) and refers particularly to the primary motor cortex (Brodmann's area 4), in which layer V (the major projection area) is very thick. Compare GRANULAR CORTEX.

**agranulocytosis** *n.* a decline in the number of certain white blood cells (neutrophils), typically as a result of an immune reaction to a drug or other chemical or the toxic effect of this substance on the bone marrow, causing production of white blood cells to fall. Agranulocytosis is diagnosed when the neutrophil count is below 200/mm<sup>3</sup> or when the total white-blood-cell count is below 500/mm<sup>3</sup>. The condition results in suppression of the immune response, rendering individuals vulnerable to opportunistic infections. Psychotropic drugs, such as CLOZAPINE and PHE-NOTHIAZINE antipsychotics, can induce agranulocytosis.

**agraphia** *n.* loss or impairment of the ability to write as a result of neurological damage or disorder. The specific forms of writing difficulties vary considerably but may include problems with spelling irregular or ambiguous words, writing numbers or particular letters, or performing the motor movements needed for handwriting. Agraphia generally is seen in APHASIA, although there is considerable variability of writing ability within a given aphasia type. Also called **dysgraphia**. —**agraphic** *adj.*

**agreeableness** *n.* the tendency to act in a cooperative, unselfish manner, construed as one end of a dimension of individual differences (agreeableness vs. disagreeableness) in the BIG FIVE PERSONALITY MODEL. It is also a dimension in the FIVE-FACTOR PERSONALITY MODEL. —**agreeable** *adj.*

**agreement** *n.* in linguistics, the correct relation between the different grammatical elements of a sentence, so that, for example, the NUMBER of the verb corresponds to that of its subject, and the number and gender of a pronoun correspond to those of its noun.

**agreement coefficient** see COEFFICIENT OF AGREEMENT.

**agrypnia** *n.* see INSOMNIA.

**agesia** *n.* see AGEUSIA.

**agyria** *n.* see LISSENCEPHALY.

**AH** abbreviation for ALTERNATIVE HYPOTHESIS.

**aha experience** the emotional reaction that typically occurs at a moment of sudden insight into a problem or other puzzling issue. It is the experience one would have upon realizing, for example, how to fix a computer problem, master a dance step, or resolve some other difficulty. In psychotherapy, it is specifically a client's sudden insight into his or her motives for cognitions, affects, or behaviors. Also called **aha moment**; **aha reaction**.

**ahistorical** *adj.* **1.** denoting a perspective that sees behavior in terms of contemporary causative factors, with emphasis on the here and now. Sometimes there is an

implication that historical causes may be represented in current processes that produce their effects contemporaneously. See PRESENTIST. **2.** more generally, not concerned with or not taking into account history, historical factors, or historical perspective.

**ahistoric therapy** a therapeutic approach that focuses on here-and-now situations and behaviors. It is distinguished from approaches that place a strong emphasis on earlier events and circumstances.

**AHP** abbreviation for ALLIED HEALTH PROFESSIONAL.

**ahylognosia** see TACTILE AGNOSIA.

**ahypnia** *n.* see INSOMNIA.

**ahypnosia** *n.* see INSOMNIA.

**AI 1.** abbreviation for ARTIFICIAL INSEMINATION. **2.** abbreviation for ARTIFICIAL INTELLIGENCE.

**AIC** abbreviation for AKAIKE'S INFORMATION CRITERION.

**aided recall** the process of remembering or attempting to remember something where a prompt is given to assist recall. Aided recall is used, for example, to assist an eyewitness or victim of a crime to retrieve memories relevant to the event or to assist consumers in remembering information contained in advertising, as a means of testing the effectiveness of a promotion. It can include the use of **funnel interviews** (in which the researcher starts with general questions and then moves on to specific ones) as well as multiple-choice tests. For example, the interviewer might ask members of the public if they remember seeing a particular advertisement. If they do, the interviewer will ask about specific aspects of the advertisement.

**AIDS** acquired immune deficiency syndrome: a clinical condition in which the immune system is so severely damaged from infection with human immunodeficiency virus (see HIV) as to allow serious opportunistic infections and diseases.

**AIDS counseling** guidance, advice, and information provided to individuals on issues related to HIV infection and AIDS. Such counseling typically covers ways to avoid exposure to HIV infection, provision of HIV antibody testing, and the importance of adhering to medication, as well as dealing with the myriad psychological and social issues associated with AIDS, including stigma and the anxiety over having a life-threatening illness. Also called **HIV/AIDS counseling**.

**AIDS dementia complex (ADC)** neuropsychological dysfunction directly attributable to HIV infection, found most commonly in those who have developed AIDS. It is marked by impairment in four areas: (a) cognition (e.g., memory loss, inability to concentrate); (b) behavior (e.g., inability to perform normal activities of daily living); (c) motor coordination (e.g., unsteady gait, loss of balance, incontinence); and (d) mood (e.g., severe depression, psychosis). Brain scans of affected individuals reveal cortical atrophy. Also called **HIV dementia**.

**aim** *n.* **1.** the symbolic or internal representation of a goal that may motivate and direct behavior toward achieving that goal: an intention or purpose. **2.** a goal toward which an organism directs behavior, effort, or activity: an objective. **3.** in psychoanalytic theory, see AIM OF THE INSTINCT; OBJECT OF INSTINCT.

**AIM** acronym for ACTIVE INTERMODAL MAPPING.

**aiming test** a test of VISUAL–MOTOR COORDINATION, pre-

cision, and speed. The participant either thrusts a stylus into a series of progressively smaller holes momentarily uncovered by a rotating shutter or places dots in small circles as rapidly as possible (see DOTTING TEST).

**aim-inhibited** *adj.* in psychoanalytic theory, describing a behavior—particularly an interpersonal behavior—in which the underlying drives are deflected from their original object and remain largely unconscious. According to the theory, aim inhibition characterizes those situations in which an INSTINCT fails to achieve direct satisfaction of its aim but obtains reduced gratification through activities or relationships similar to the original aim. Sigmund FREUD used this idea to explain affectional relationships within families and platonic friendships as deriving from an aim-inhibited sexual instinct.

**AIM model** a model proposing that various states of consciousness may be defined and differentiated according to their position on three axes of brain activity: (a) Activation—how active is the brain when one is awake, in NREM SLEEP, or in REM SLEEP, as measured by electroencephalography?; (b) Input–output gating—how is information that is processed by the brain during each phase in the sleep–wake cycle generated, via external sensory input (as in external stimuli during waking) or internally (as in dreams)?; and (c) Modulation—which neurochemical modulatory system is predominant during each phase, the aminergic or the cholinergic? The model has been used to investigate ALTERED STATES OF CONSCIOUSNESS and various phenomena associated with dreaming (notably the LUCID DREAM); it has also been proposed more generally as an approach to the MIND–BODY PROBLEM. It was devised by U.S. psychiatrist J. Allan Hobson (1933– ) as an expansion of the earlier ACTIVATION–SYNTHESIS HYPOTHESIS that he developed with U.S. psychiatrist Robert W. McCarley (1937– ).

**aim of the instinct** in psychoanalytic theory, the activity through which an INSTINCT is gratified, resulting in the release of internal tension. For example, kissing may satisfy the oral instinct. Also called **instinctual aim**. See also REVERSAL OF AFFECT.

**AIO** abbreviation for activities, interests, opinions. See PSYCHOGRAPHICS.

**air–bone gap** the difference between the air-conduction and bone-conduction hearing levels at specific frequencies, which indicates the amount of conductive impairment in the ear tested.

**air conduction** the process of conducting sound waves through the ear canal to the eardrum, which vibrates in response to changes in adjacent air pressure.

**air-conduction testing** an audiological procedure that measures a person's threshold for PURE TONES in each ear at individual frequencies.

**Air Force Medical Evaluation Test (AFMET)** the former name for the BIOGRAPHICAL EVALUATION AND SCREENING OF TROOPS program.

**air-pollution adaptation** habituation to local levels of air pollution through desensitization to their effects on health and aesthetic judgments. SIGNAL DETECTION THEORY suggests a shift in RESPONSE BIAS rather than in actual threshold effects.

**air-pressure effects** the adverse mental or physical effects of a significant variation in atmospheric pressure. The effects experienced at high pressures—for example, in diving

more than 10 m (33 ft) beneath the surface of the sea—may include difficulty breathing, nitrogen poisoning marked by light-headedness and mental instability, and oxygen poisoning caused by breathing oxygen under extreme pressure. Exposure to low pressures, as in mountain climbing or air travel without oxygen or air-pressure modification, characteristically causes oxygen starvation, with impaired performance and eventual loss of consciousness and death. See also ACUTE MOUNTAIN SICKNESS; ALTITUDE SICKNESS; DECOMPRESSION SICKNESS; GRAYOUT.

**air sickness** MOTION SICKNESS caused by air travel.

**air traffic control** personnel, equipment, and systems that support the safety and security of aircraft through information, communication, observation, and control of flight trajectories. See AVIATION PSYCHOLOGY.

**AIS** abbreviation for ANDROGEN-INSENSITIVITY SYNDROME.

**Ajzen–Fishbein model** the original framework for what is now known as the THEORY OF REASONED ACTION. [Icek Ajzen (1942– ) and Martin Fishbein (1936–2009), U.S. social psychologists]

**Akaike's information criterion (AIC)** a SUMMARY STATISTIC used in comparing the relative GOODNESS OF FIT of two or more models for a given set of data, while taking into account the number of parameters in each model. The model with the lowest AIC is considered the best among all models specified. [Hirotugu Akaike (1927–2009), Japanese statistician]

**akatamathesia** *n.* see ACATAMATHESIA.

**akataphasia** *n.* see ACATAPHASIA.

**akathisia (acathisia)** *n.* extreme restlessness characterized by an inability to sit or stand still and by fidgety movements or jitteriness, as well as a subjective report of inner restlessness. It occurs as an EXTRAPYRAMIDAL SYMPTOM resulting from exposure to a neuroleptic (antipsychotic) medication or in response to SSRI antidepressant medications. Akathisia is also a feature of some neurological and general medical conditions (e.g., Parkinson's disease and iron-deficiency anemia).

**akinesia** *n.* loss or reduction of voluntary movement. Also called **akinesis**. —**akinetic** *adj.*

**akinesia algera** a condition in which severe pain is experienced with any body movement, a disorder often associated with psychogenic factors.

**akinesesthesia** *n.* loss or impairment of the sense that provides information from muscles, tendons, and joints. Also called **akinesthesia**. —**akinesthetic** or **akines-thetic** *adj.*

**akinetic** *adj.* characterized by loss of voluntary movement not due to paralysis. See AKINESIA.

**akinetic mutism** an absence or gross reduction of voluntary movements and speech, although the individual does follow eye movements. The condition is associated with damage to the CINGULATE CORTEX and SUPPLEMENTARY MOTOR AREA in the mesial part of the FRONTAL LOBES.

**akinetic seizure** see ATONIC SEIZURE.

**Akineton** *n.* a trade name for BIPERIDEN.

**akinetopsia** *n.* inability to see objects in motion as a result of damage to the V5 area of visual cortex. Individuals with akinetopsia perceive moving stimuli as a series of stationary stroboscopic images and see visual trails behind moving

ing objects. Also called **motion agnosia**. —**akinetopsic** *adj.*

**akoria** *n.* see ACORIA.

**AL 1.** abbreviation for absolute limen. See ABSOLUTE THRESHOLD. **2.** abbreviation for ADAPTATION LEVEL.

**alalia** *n.* partial or total inability to speak that is most often associated with neuromuscular paralysis of the vocal chords. The term is occasionally used as a synonym for MUTISM.

**alanine** *n.* a nonessential amino acid found in plasma that has a role in the metabolism of sugar and acid and provides energy for various organs. Its consumption as a supplement in the form of beta-alanine may be associated with improved physical functioning (e.g., in athletes, the elderly) by building muscle mass, and it also may have a role in depression, schizophrenia, and other disorders.

**Al-Anon** *n.* an international self-help organization for people who have been affected by the compulsive use of alcohol by a family member or friend. Founded in the United States in 1951, it uses the TWELVE-STEP PROGRAM adapted from ALCOHOLICS ANONYMOUS and includes **Alateen** for younger individuals. Al-Anon members share their experiences with and offer support to one another in order to promote personal recovery and growth.

**alarm call** a vocalization produced by a nonhuman animal, often in response to detecting a potential predator, that warns other individuals to either escape or join in mutual attack of the predator. Alarm calls appear to be altruistic acts (placing the caller at increased risk) and are often explained through KIN SELECTION or RECIPROCAL ALTRUISM.

**alarm reaction** see GENERAL ADAPTATION SYNDROME.

**alaryngeal** *adj.* without or not involving the LARYNX, the structure at the top of the trachea (windpipe) that contains the vocal cords.

**Alateen** *n.* see AL-ANON.

**albinism** *n.* any of a group of genetic disorders characterized by defective pigmentation of the eyes, hair, and skin due to inadequate production or distribution of melanin pigment in the body. In addition to pigmentation abnormalities, symptoms may include strabismus (abnormal alignment of the eyes), nystagmus (involuntary rapid eye movement), refractive (focusing) errors, reduced visual acuity, and photophobia (extreme sensitivity to light).

**Albright's disease** a disorder caused by dysfunction of the pituitary gland and hypothalamus, characterized by pigment abnormalities, skeletal pseudocysts, and precocious puberty in females. [Fuller **Albright** (1900–1969), U.S. physician]

**Albright's hereditary osteodystrophy** a hereditary condition that resembles hypoparathyroidism but is caused by failure of response to, rather than deficiency of, parathyroid hormone (see PSEUDOHYPOPARATHYROIDISM). It is commonly marked by short stature, obesity, short metacarpals, and ectopic calcification. [Fuller **Albright**]

**alcohol** *n.* ETHANOL (ethyl alcohol) or any other member of the large group of organic compounds to which ethanol belongs. Other members include methanol and isopropanol. Ethanol is the primary psychoactive agent in alcoholic drinks. Other alcohols are generally toxic if ingested.

**alcohol abuse** a pattern of alcohol consumption that persists despite recurrent significant adverse consequences

resulting directly from alcohol use, including neglect of important personal, financial, social, occupational, or recreational activities; absenteeism from work or school; repeated encounters with the police; and the use of alcohol in situations in which drinking is hazardous (e.g., driving while intoxicated). In *DSM–IV–TR*, it is distinct from ALCOHOL DEPENDENCE in that the diagnosis does not require tolerance, withdrawal, or alcohol use–related compulsive behavior. In *DSM–5*, alcohol abuse and alcohol dependence have been subsumed into ALCOHOL USE DISORDER and are no longer considered distinct diagnoses. See also SUBSTANCE ABUSE.

**alcohol-amnestic disorder** see ALCOHOL-INDUCED PERSISTING AMNESTIC DISORDER.

**alcohol dependence** in *DSM–IV–TR*, a pattern of repeated or compulsive use of alcohol despite significant behavioral, physiological, and psychosocial problems; it may also feature cravings, the development of tolerance, and characteristic withdrawal symptoms if use is suspended. The diagnosis is further differentiated from ALCOHOL ABUSE by the preoccupation with obtaining alcohol or recovering from its effects. Alcohol dependence is sometimes considered to be the equivalent of ALCOHOLISM. In *DSM–5*, it and alcohol abuse have been subsumed into ALCOHOL USE DISORDER and are no longer considered distinct diagnoses. See also SUBSTANCE DEPENDENCE.

**alcohol derivative** any drug that utilizes the sedative and hypnotic effects of alcohol for therapeutic purposes. In the 1890s, it was found that compounds derived from methyl alcohol had CNS DEPRESSANT effects. In the 1950s, a new generation of alcohol-based compounds with greater hypnotic activity was introduced. They included ETHCHLORVYNOL and **ethinamate**; the latter is a more potent sleep inducer than ethchlorvynol, but its abuse potential is similar to that of barbiturates. Due to their toxicity, alcohol derivatives are rarely used in modern clinical practice.

**Alcohol, Drug Abuse and Mental Health Administration (ADAMHA)** an agency in the U.S. Department of Health and Human Services that was replaced in 1992 by the SUBSTANCE ABUSE AND MENTAL HEALTH SERVICES ADMINISTRATION (SAMHSA). In this reorganization, the three ADAMHA research institutes, the National Institute on Alcohol Abuse and Alcoholism (NIAAA), the National Institute on Drug Abuse (NIDA), and the NATIONAL INSTITUTE OF MENTAL HEALTH (NIMH), were moved to the National Institutes of Health. The substance abuse and mental health services programs provided by ADAMHA remain the responsibility of SAMHSA.

**alcohol flush reaction (AFR)** reddening of the face, neck, or other parts of the body, sometimes accompanied by reduced blood pressure and increased heart rate, sweating, sleepiness, and nausea, following alcohol consumption. It is caused by the body's inability to metabolize alcohol efficiently due to a genetic variation of the *ALDH2* gene, found in 40% to 50% of people of Asian descent. AFR is associated with an increased risk of cancer due to the carcinogenic properties of unmetabolized alcohol.

**alcohol hallucinosis** see ALCOHOLIC HALLUCINOSIS.

**alcoholic** *n.* a person who is dependent on alcohol, that is, who regularly drinks to the point of intoxication despite negative consequences. See also ALCOHOL DEPENDENCE.

**alcoholic blackout** see BLACKOUT.

**alcoholic brain syndrome** any of several syndromes



associated with the acute or chronic effects of alcohol on brain function, including ALCOHOL INTOXICATION DELIRIUM, ALCOHOL WITHDRAWAL DELIRIUM, ALCOHOL-INDUCED PERSISTING DEMENTIA, ALCOHOL-INDUCED PERSISTING AMNESTIC DISORDER, and ALCOHOL-INDUCED PSYCHOTIC DISORDER.

**alcoholic cerebellar degeneration** degeneration of PURKINJE CELLS in the midline of the CEREBELLUM caused by long-term alcohol abuse, commonly producing gait disturbances.

**alcoholic dementia** see ALCOHOL-INDUCED PERSISTING DEMENTIA.

**alcoholic hallucinosis** alcohol use-related hallucinations, often auditory, that the individual may not realize are hallucinations. The individual remains lucid but may feel persecuted and behave aggressively. Also called **alcohol hallucinosis**. See also ALCOHOL-INDUCED PSYCHOTIC DISORDER.

**alcoholic Korsakoff's syndrome** a form of KORSKOFF'S SYNDROME caused by long-term alcohol abuse. See ALCOHOL-INDUCED PERSISTING AMNESTIC DISORDER.

**alcoholic myopathy** see ACUTE ALCOHOLIC MYOPATHY.

**alcoholic neuropathy** any of various neurological disturbances, including weakness and abnormal skin sensations, such as numbness, tingling, and burning, that are secondary to chronic heavy consumption of alcohol. Specific causative factors are not well understood but appear to include vitamin deficiencies and a directly toxic effect of alcohol on nerves.

**Alcoholics Anonymous (AA)** a worldwide voluntary organization of men and women who, through a TWELVE-STEP PROGRAM, seek to help each other stay sober and learn to live healthy, fulfilling lives. The only requirement for membership is a desire to stop drinking. Two critical components of the AA program are its focus on alcoholics helping alcoholics and its desire to put principles above personalities in conducting its business. Founded in the United States in 1935, AA is the oldest, largest, and best known self-help organization.

**alcohol-induced persisting amnestic disorder** a disturbance in memory caused by the persisting effects of alcohol. The ability to learn new information or to recall previously learned information is impaired severely enough to interfere markedly with social or occupational functioning and to represent a significant decline from a previous level of functioning. Formerly called **alcohol-amnestic disorder**. See also KORSKOFF'S SYNDROME; WERNICKE-KORSKOFF SYNDROME.

**alcohol-induced persisting dementia** a deterioration of mental function resulting from the persisting effects of alcohol abuse. It is characterized by multiple cognitive deficits, especially of memory, but also includes impairment of speech (see APHASIA), movement (see APRAXIA), and sensory capabilities (see AGNOSIA), as well as EXECUTIVE DYSFUNCTION. Also called **alcoholic dementia**. See also SUBSTANCE-INDUCED PERSISTING DEMENTIA.

**alcohol-induced psychotic disorder** hallucinations or delusions due to the direct physiological effects of alcohol. See also ALCOHOLIC HALLUCINOSIS; SUBSTANCE-INDUCED PSYCHOTIC DISORDER.

**alcohol intoxication** in *DSM-IV-TR* and *DSM-5*, a reversible condition that develops soon after the ingestion of alcohol. It comprises behavioral or psychological changes,

such as inappropriate or aggressive behavior, impaired judgment, or impaired social functioning; and physiological changes, such as slurred speech, unsteady gait, and disruption of attention or memory. The effects typically become more marked with increased alcohol intake. Severe intoxication levels can result in respiratory depression and death. See also SUBSTANCE INTOXICATION.

**alcohol intoxication delirium** in *DSM-IV-TR* and *DSM-5*, a reversible syndrome that develops over a short period (usually hours to days) following heavy alcohol consumption. Disturbance of consciousness (e.g., reduced ability to focus, sustain, or shift attention) is accompanied by changes in cognition (e.g., memory deficit, disorientation, or language disturbance) in excess of those usually associated with ALCOHOL INTOXICATION. See also SUBSTANCE INTOXICATION DELIRIUM.

**alcoholism** *n.* a syndrome of compulsive and dependent alcohol use. The term may be used synonymously with ALCOHOL DEPENDENCE or refer to persistent heavy alcohol use without a formal diagnosis.

**alcohol myopia** alcohol-induced impairment of perception and cognition, specifically, a narrowed focus on immediately salient events, desires, or behaviors to the exclusion of less immediate ones. This can lead, for example, to aggressive behavior if an intoxicated individual focuses on (and overinterprets) an immediate threat rather than considering the potential negative ramifications of responding to that threat. [identified by U.S. psychologists Claude M. Steele (1946– ) and Robert A. Josephs (1961– )]

**alcohol rehabilitation** interventions designed to enable the alcohol-dependent person either to achieve and maintain abstinence, which is the generally accepted goal of treatment for alcohol dependence, or to reach and maintain a stable pattern of nonproblem drinking, which is a controversial, less common goal of treatment. Also called **alcoholism treatment; alcohol rehab**.

**alcohol use disorder** a catchall diagnosis encompassing varying degrees of excessive use of alcohol. In *DSM-5*, the term specifically encompasses both abuse of and dependence on alcohol, thus superseding the *DSM-IV-TR*'s distinct diagnoses of ALCOHOL ABUSE and ALCOHOL DEPENDENCE. The disorder is characterized by such symptoms as alcohol craving, recurrent use of alcohol that interferes with the fulfillment of one's daily responsibilities, alcohol-seeking behavior, inability to control one's drinking, drinking despite potential hazards (e.g., drinking while driving), the need for increased amounts of alcohol to achieve its effects (tolerance), and withdrawal symptoms when one stops or reduces alcohol intake (e.g., hand tremors, nausea, agitation, hallucinations). The disorder is distinguished as mild, moderate, or severe depending on the number of these symptoms that an individual may have: Mild cases present with two to three symptoms; moderate cases four to five symptoms; and severe cases six or more symptoms.

**alcohol withdrawal** in *DSM-IV-TR* and *DSM-5*, a group of physical symptoms that arise after cessation of repeated and prolonged heavy alcohol consumption. Withdrawal symptoms include autonomic hyperactivity (sweating, pounding heart, dry mouth, etc.), hand tremor, insomnia, nausea or vomiting, PSYCHOMOTOR AGITATION, anxiety, and in some cases hallucinations or illusions, seizures, and DELIRIUM TREMENS. See also HANGOVER.

**alcohol withdrawal delirium** in *DSM-IV-TR* and *DSM-5*, a reversible syndrome that develops over a short

period of time (usually hours to days) following cessation of prolonged, heavy alcohol consumption. The features are disturbed consciousness (e.g., reduced ability to focus, sustain, or shift attention) and changes in cognition (e.g., memory deficit, disorientation, language disturbance) in excess of those usually associated with ALCOHOL WITHDRAWAL. See also DELIRIUM TREMENS.

**aldolase (ALS)** *n.* an enzyme found in muscle tissue, where it serves to split a complex sugar molecule. Excessive levels of aldolase in the blood may be an early indication of abnormal muscle function and a clue in the diagnosis of MUSCULAR DYSTROPHY.

**Aldomet** *n.* a trade name for METHYLDOPA.

**aldosterone** *n.* the principle MINERALOCORTICOID hormone secreted by the adrenal cortex, the outer layer of the ADRENAL GLAND. It helps to regulate mineral and water metabolism by promoting potassium excretion and sodium retention in the kidneys. Excess secretion of aldosterone results in a pathological condition called **aldosteronism** (or **hyperaldosteronism**), marked by headaches, muscle weakness, fatigue, hypertension, and numbness. Primary aldosteronism is caused by abnormal functioning of the adrenal cortex itself and is called **Conn's syndrome**, whereas secondary aldosteronism is the result of a liver, heart, or kidney disease affecting the adrenal glands.

**alert inactivity** an INEANT STATE OF AROUSAL marked by facial relaxation, calm and even breathing, open, luminous eyes, and considerable visual exploration.

**alerting device** an ASSISTIVE TECHNOLOGY device that alerts individuals with hearing loss to the occurrence of an event that is typically signaled by auditory means, such as the ringing of a doorbell, the buzzing of an alarm clock, or the beeping of a smoke or fire alarm. It might employ a flashing light, vibrations, or other nonauditory stimuli.

**alerting mechanisms** systems within the central nervous system that trigger a response or direct the attention of higher brain centers to possible threats. Most important is the arousal mechanism of the RETICULAR FORMATION in the brainstem.

**alertness** *n.* the state of being awake, aware, attentive, and prepared to act or react. Neurologically, alertness corresponds with high-frequency, low-amplitude brain waves resulting from stimulation of the RETICULAR FORMATION. See also AROUSAL. —**alert** *adj.*

**alexia** *n.* loss or impairment of the ability to comprehend written or printed words as a result of lesions, stroke, or other forms of neurological damage or disorder. It is generally seen in APHASIA but may occur in isolation, in which case it is called **pure alexia** (or **alexia without agraphia** or **agnosic alexia**) and characterized by reading impairment with preserved language production and auditory comprehension. Individuals with pure alexia can also write but are frequently unable to read what they have written (hence it is also called **word blindness**). See also DYSLEXIA.

**alexia with agraphia** a form of acquired DYSLEXIA in which both reading and writing ability are impaired. Often problems producing or comprehending speech are also present. The condition is traditionally associated with lesions of the ANGULAR GYRUS but is now known to involve other regions of the brain as well.

**alexithymia** *n.* an inability to express, describe, or distinguish among one's emotions. It may occur in a variety of disorders, especially psychosomatic and some substance

use disorders, or following repeated exposure to a traumatic stressor. It also may be a disorder in its own right. See also NORMATIVE MALE ALEXITHYMIA.

**Alfenta** *n.* a trade name for alfentanil. See FENTANYL.

**alfentanil** *n.* see FENTANYL.

**algebraic summation** SUMMATION that takes into account the signs of the terms. Thus, when both EXCITATORY POSTSYNAPTIC POTENTIALS and INHIBITORY POSTSYNAPTIC POTENTIALS are induced in a neuron, an ACTION POTENTIAL is evoked only if the excitatory potentials exceed the inhibitory potentials by at least a threshold amount.

**algedonic** *adj.* relating to pain associated with pleasure, or the pleasantness–unpleasantness dimension of experience. **Algedonics** is the study of the mixture of pleasure and pain.

**algedonic aesthetics** the concept that pleasure arises when sensory organs are in a hypernormal state of readiness to respond, and displeasure arises when they are in a hyponormal state of readiness. [formulated in the late 19th century by U.S. philosopher Henry R. Marshall (1852–1927)]

**algnesia** *n.* the ability to experience the sensation of pain. Compare ANALGESIA. —**algesic** *adj.*

**algesimeter** *n.* an instrument used to measure the sensitivity of an individual to pain. It contains a calibrated needle that is pressed against a body surface in order to determine the person's pain threshold. Also called **algesiometer**; **algometer**.

—**algia** *suffix* pain or a painful condition (e.g., NEURALGIA).

**algo-** (**alg-**) *combining form* pain.

**algolagnia** *n.* a sexual disorder in which sexual excitement is achieved by passively experiencing or actively inflicting pain. See SEXUAL MASOCHISM; SEXUAL SADISM.

**algometer** *n.* see ALGESIMETER.

**allogophilia** *n.* liking for the experience or infliction of pain. See also ALGOLAGNIA; MASOCHISM; SADISM.

**algopsychalia** *n.* physical pain recognized by the patient as being of mental rather than physical origin, which sometimes accompanies mental difficulties and illness (e.g., anxiety, depression, schizophrenia). See also PSYCHALGIA; PSYCHIC PAIN.

**algorithm** *n.* a well-defined procedure or set of rules that is used to solve a problem or accomplish a task or that is used for conducting a series of computations. An example is trying all the possible combinations in sequence in order to open a combination lock. Algorithms, which may be represented visually as flow charts, are essential to computer programming and information processing. The word is derived from the name of the 9th-century Arab mathematician al-Khwarizmi. Compare HEURISTIC. See also BRITISH MUSEUM ALGORITHM; BRUTE FORCE; EXHAUSTIVE SEARCH. —**algorithmic** *adj.*

**alien abduction** a claim by individuals that they have been kidnapped by extraterrestrial beings. Although this phenomenon is commonly associated with delusional thinking, posttraumatic stress disorder, and acute stress reactions, many of these individuals have no other clear symptoms of mental disorder. There is no conclusive scientific evidence to support the validity of their claims. Also called **extraterrestrial kidnapping**.

**alienation** *n.* **1.** estrangement from others, resulting in the absence of close or friendly relationships with people in one's social group (e.g., family, workplace, community). **2.** a deep-seated sense of dissatisfaction with one's personal existence and a lack of trust in one's social or physical environment or in oneself. **3.** estrangement from one's own customary or expected ways of functioning. **4.** the experience of being separated from reality or isolated from one's thoughts, feelings, or physical being, as in DEREGALIZATION and DEPERSONALIZATION. —**alienated** *adj.*

**alienation coefficient** see COEFFICIENT OF ALIENATION.

**alien hand syndrome** a phenomenon in which an individual perceives his or her hand to be acting under its own control or to be "foreign." It is a specific kind of alien limb syndrome.

**alien limb syndrome** a neurological disorder characterized by unintended hand, arm, or leg movements, often accompanied by a feeling that one has no control over the limb. The individual may not even recognize the limb as his or her own. The syndrome may be associated with lesions to the SUPPLEMENTARY MOTOR AREA or the motor regions of the CORPUS CALLOSUM.

**ALI Guidelines** abbreviation for American Law Institute Guidelines. See AMERICAN LAW INSTITUTE MODEL PENAL CODE INSANITY TEST.

**alkalosis** *n.* an abnormally high level of alkalinity (bicarbonate ion concentration) in the blood and tissues, which upsets the body's acid-base balance. The condition is often marked by slow, shallow breathing. It has a variety of causes and additional symptoms vary with each, potentially including neurological abnormalities such as muscle twitching, confusion, tremors or spasms, and numbness. Compare ACIDOSIS. —**alkalotic** *adj.*

**all-** *combining form* see ALLO-.

**allachesthesia** *n.* see ALLESTHESIA.

**allele** *n.* an alternate form of a gene that occupies a given position on each of a pair of HOMOLOGOUS chromosomes. Each person typically has two alleles of each gene: One is inherited from the mother and the other from the father. Alleles may be alike (HOMOZYGOUS) or different (HETEROZYGOUS) and are responsible for variation in inherited characteristics, such as hair color or blood type. See also DOMINANT ALLELE; RECESSIVE ALLELE. —**allelic** *adj.*

**allergy** *n.* a condition in which the body produces an abnormal or inappropriate immune response to certain normally harmless substances known as **allergens**, such as dust, pollen, nuts, or animal dander. In an allergic person, the allergens stimulate the release of HISTAMINE and other chemicals, leading to symptoms that can include (but are not limited to) inflammation, sneezing, itching, and vomiting. See also ANAPHYLAXIS. —**allergic** *adj.*

**allesthesia** (**allaesthesia**; **alloesthesia**) *n.* a disturbance of stimulus localization in which individuals experience a given stimulus on the side opposite to the side of stimulation. For example, **visual allesthesia** involves the transposition of images from one position to their opposite in the visual field. Allesthesia is often used synonymously with ALLOCHEIRIA. Also called **allachesthesia**.

**alley maze** a maze consisting of paths formed by walls of opaque material tall enough to prevent an individual within it from jumping out. Alternatively, alley mazes may have shorter walls and be covered by a top. An incorrect

choice within the maze leads to a cul-de-sac. It is one of two primary types of maze, the other being an ELEVATED MAZE.

**alley problem** the conundrum posed by the apparent convergence of two parallel structures that extend from the viewer into the distance. Parallel rows of trees, railroad tracks, or walls of buildings forming an alley are all common stimuli that appear to meet in the distance. See also ILLUSION; LINEAR PERSPECTIVE.

**alliaceous** *adj.* in the ZWAARDEMAKER SMELL SYSTEM, denoting an odor quality smelled in garlic and chlorine.

**alliance** *n.* an association formed between two or more individuals to promote mutual interests. For example, non-human animals form alliances that allow members collectively to control resources that one individual could not control alone. Two male primates of lower rank may act together to control resources that normally only the ALPHA MALE would control. A group of male lions (often related) may form an alliance to take over a pride of females from another male. See also THERAPEUTIC ALLIANCE.

**allied health professional (AHP)** a health care professional with specialized education and training (other than a physician, registered nurse, dentist, or pharmacist) who assists in the delivery of prevention, treatment, and rehabilitation services. Examples include occupational therapists, speech and language pathologists, dental hygienists, and medical technicians.

**allo-** (**all-**) *combining form* difference or otherness.

**allocation decision** **1.** in DECISION THEORY, a choice in which an individual must decide how to distribute a limited resource across entities (e.g., hypothetical factories or hospitals). **2.** in group problem solving, the group's allocation of particular roles or jobs to individual members.

**allocation rule** see CLASSIFICATION RULE.

**allocator** *n.* in bargaining and GAME THEORY, the individual or group making the initial offer to the other party (the **acceptor**).

**allocentric** **1.** *adj.* denoting interest in or focus on other people or objects rather than the self. Compare AUTOCENTRIC. **2.** *n.* an individual who is dispositionally predisposed to put the goals and needs of the group above his or her own. Compare IDIOCENTRIC. See also SOCIOCENTRISM. —**allocentrism** *n.*

**allocheiria** (**allochiria**) *n.* a disorder of sensation in which a person experiences pain or touch sensations on the opposite side of the body from the point actually stimulated. It is considered a DYSCHIEIRIA. It is also often used synonymously with ALLESTHESIA.

**allochthonous** *adj.* stemming from sources or forces external to a particular system: not indigenous or innate. Compare AUTOCHTHONOUS.

**allocortex** *n.* those regions of the cerebral cortex that are phylogenetically older and have fewer than six main layers of cells. The allocortex is involved primarily in olfactory functions and limbic functions related to memory and emotion, and it comprises the three-layered **archicortex** (or **archipallium**), found mostly in the hippocampus, and the four- or five-layered **paleocortex** (or **paleopallium**), found mostly in the pyriform area and parahippocampal gyrus. Compare NEOCORTEX.

**alloeroticism** *n.* the extension of erotic feelings toward

and the derivation of sexual satisfaction from others, as opposed to AUTOEROTICISM. Also called **alloerotism**. —**allocerotic** *adj.*

**alloesthesia** *n.* see ALLESTHESIA.

**allogrooming** *n.* behavior that involves two or more nonhuman animals picking through each other's fur, hair, or feathers. Often thought to have a solely hygienic function (i.e., the removal of dirt and parasites), allogrooming has been shown to have positive social effects as well, through production of ENDOGENOUS OPIOIDS in recipients. It is thus a mechanism that reinforces social relationships.

**allomone** *n.* a chemical signal that is released outside the body by members of one species and affects the behavior of members of another species. Compare PHEROMONE.

**allomorph** *n.* in linguistics, any of several different speech sounds or written forms that are used to represent the same MORPHEME. For example, the [s] sound at the end of *cats* and the [z] sound at the end of *dogs* represent the same noun-plural morpheme and are therefore allomorphs. Similarly, in writing, the *-t* at the end of *burnt* and the *-ed* at the end of *turned* are allomorphs representing the same past-tense morpheme. —**allomorphic** *adj.*

**allonursing** *n.* the provision by a female of nourishment for offspring that are not her own. Although seen in rodents, ungulates, primates, and other mammalian species, allonursing remains poorly understood in light of the fact that LACTATION imposes substantial physiological costs on mothers and thus seemingly should not be directed toward foreign offspring. The various explanations offered for this behavior include the parenting hypothesis, stating that the individual is practicing to improve her maternal skills; the reciprocity hypothesis, stating that the individual helps one who has helped her by sharing responsibility for nourishment; the misdirected parental care hypothesis, stating that the individual is unaware the offspring is not her own; the milk evacuation hypothesis, stating that the individual nourishes others to get rid of surplus milk not consumed by her own offspring; and the kin selection hypothesis, stating that the individual obtains greater INCLUSIVE FITNESS by nourishing offspring to whom she is indirectly related. Additionally, allonursing may have social benefits similar to those of ALLOGROOMING. Also called **communal nursing**; **nonoffspring nursing**.

**alloparenting** *n.* care of infants by individuals who are not their parents. It is seen especially among COOPERATIVE-BREEDING species where **alloparents** (also known as **helpers** or **helpers at the nest**) may provide essential services for offspring survival.

**allopathy** *n.* a system of medicine in which a disease or disorder is treated with agents that produce effects different from or incompatible with those caused by the disease or disorder. Allopathy is often equated with conventional or pharmacological medical practice. Compare HOMEOPATHY. —**allopathic** *adj.*

**allopatric** *adj.* see SYMPATRIC.

**allophasia** *n.* disorganized, incoherent speech.

**allophone** *n.* in linguistics, any of several slightly different speech sounds that are regarded as contextual variants of the same PHONEME. For example, in English the aspirated [p] sound at the beginning of *paid* and the unaspirated [p] sound in *spade* have no contrastive function in the phonological system of the language and are therefore regarded

as allophones of the same phoneme, /p/. —**allophonic** *adj.*

**alloplasty** *n.* **1.** a process of adaptive response that aims to alter the environment, as opposed to altering the self. Also called **alloplastic adaptation**. **2.** surgical repair of diseased or damaged tissue through implantation using synthetic or organic material from outside the patient's body. Compare AUTOPLASTY. —**alloplastic** *adj.*

**allopregnenolone** *n.* a naturally occurring steroid that modulates GABA<sub>A</sub> RECEPTOR activity in a manner similar to that of BENZODIAZEPINE anxiolytics.

**allopsychic delusion** a delusion about others or the world outside of the self. Compare AUTOPSYCHIC DELUSION.

**all-or-none law** the principle that the amplitude of the ACTION POTENTIAL in a neuron is independent of the magnitude of the stimulus. Thus, all stimuli above the neuron's threshold trigger action potentials of identical magnitude (although they may vary in frequency); stimuli below this threshold may produce local GRADED POTENTIALS but no propagated impulses. Also called **all-or-none principle**.

**all-or-none learning** the theory that, in any given learning trial, learning occurs either completely and fully or not at all. This contrasts with a hypothesis of trial-by-trial **incremental learning**.

**allostasis** *n.* stability through change. Allostasis refers particularly to the idea that parameters of most physiological regulatory systems change to accommodate environmental demands. Although allostatic processes are critical for adaptive functioning, chronic or repeated activation of physiological systems in response to life's challenges is hypothesized to exact a toll on such systems.

**allosteric modulation** the binding of a substance (called an **allosteric modulator**) to a certain site on a RECEPTOR in a way that alters the conformation of other sites on the receptor, thereby increasing or decreasing the affinity of the receptor for other molecules. Allosteric modulation has been recognized as an alternative pharmacological approach to gain selectivity in drug action.

**allotriophagy** *n.* a desire to eat inappropriate foods or nonnutritive substances. Also called **allotriophagia**. See also PICA.

**all-payer system** a health care system in which prices for health care services and payment methods are the same regardless of who is paying (e.g., the patient or an insurance company). Also called **multipayer system**.

**Allport's personality trait theory** the theory that an individual's personality traits or PERSONAL DISPOSITIONS are key to understanding the uniqueness and consistency of his or her behavior. Traits are regarded as dynamic forces that interact with each other and the environment to determine the characteristic actions or reactions that define the self (see PROPRIUM). See also COMMON TRAIT. [Gordon W. ALLPORT]

**Allport–Vernon–Lindzey Study of Values (SOV)** a two-part personality test designed to show the relative importance of six basic values in the participant's life: theoretical, economic, aesthetic, social, political, and religious. The categories are based on SPRANGER'S TYPOLOGY and presented in the form of 45 items to which participants respond. Part one consists of 30 statements, each describing a situation with two alternative choices; participants must choose which option they prefer and indicate the strength

of that preference by distributing three points between the two alternatives. Part two consists of 15 questions, each with four alternative answers; participants must rank the answers in order of preference. The SOV was originally published in 1931 as the **Allport-Vernon Study of Values** but in 1951 was revised and renamed. A third edition was published in 1960 and a fourth in 2003, the latter developed by U.S. vocational psychologist Richard E. Kopelman (1943– ) and colleagues. Also called **Study of Values**. [Gordon W. ALLPORT; Philip E. **Vernon** (1905–1987), British psychologist; Gardner LINDZEY]

**all-possible-subsets regression** a method for predicting an outcome variable based on a series of equations formed by all possible subsets of predictors from a finite pool of predictors. The “best” subset is identified using criteria established by the researcher, such as the value of AKAIKE’S INFORMATION CRITERION or of the COEFFICIENT OF MULTIPLE DETERMINATION. Also called **all-possible-subsets multiple regression**; **setwise regression**.

**allusive thinking** a type of thinking marked by inference and suggestion rather than traditional logic and direct communication of ideas. The concepts employed may seem diffuse and indistinct. See also ANALOGICAL THINKING.

**alogia** *n.* inability to speak because of dysfunction in the central nervous system. In a less severe form, it is sometimes referred to as **dyslogia**.

**alpha** (symbol:  $\alpha$ ) *n.* **1.** the likelihood of incorrectly rejecting a statement or hypothesis concerning a characteristic of a population. More specifically, it is the probability of incorrectly rejecting a true NULL HYPOTHESIS (i.e., committing a TYPE I ERROR) in research. Although the value of alpha is chosen by the investigator based on what is deemed acceptable for a particular study, alpha values of .05 and .01 are commonly used. **2.** a measure of RELIABILITY for a set of responses to a test or measure. See CRONBACH’S ALPHA.

**alpha-adrenergic receptor** a receptor that binds NOREPINEPHRINE and causes stimulation of smooth muscle in responses of the SYMPATHETIC NERVOUS SYSTEM, such as pupil dilation and increased vascular resistance (see VASOCONSTRICTION). There are two types,  $\alpha_1$ -adrenoreceptors and  $\alpha_2$ -adrenoreceptors, each of which is divided into subtypes designated by subscript capital letters ( $\alpha_{1A}$ -adrenoreceptor,  $\alpha_{2A}$ -adrenoreceptor, etc.). Also called **alpha adrenoreceptor**; **alpha adrenoreceptor**; **alpha receptor**. Compare BETA-ADRENERGIC RECEPTOR.

**alpha-adrenoreceptor blocking agent** see ADRENERGIC BLOCKING AGENT.

**alpha alcoholism** see JELLINEK’S ALCOHOLISM SPECIES.

**alphabet** *n.* a set of letters or signs, usually listed in a fixed order, that are used to represent the basic speech sounds of a language in writing. In linguistics, the term is restricted to those writing systems in which the symbols represent individual PHONEMES rather than syllables. Compare SYLLABARY. —**alphabetical** *adj.*

**alpha biofeedback** see ALPHA-WAVE TRAINING.

**alpha-block conditioning** the training of humans or other animals to block ALPHA WAVES by reinforcement or biofeedback. See ALPHA BLOCKING.

**alpha blocker** see ADRENERGIC BLOCKING AGENT.

**alpha blocking** the suppression of ALPHA WAVES that is observed in some individuals via electroencephalography

(EEG) when they focus their eyes on an unexpected stimulus or perform an active mental task. It is sometimes taken as an indicator of orienting or attention. The notion of “alpha blocking” is inferential, however; what is actually observed is a drop in visible alpha-band activity in the “raw” scalp EEG. Typically, blocked alpha waves are replaced by faster, low-amplitude, irregular waveforms on the EEG, a phenomenon called DESYNCHRONIZATION.

**alpha coefficient** see CRONBACH’S ALPHA.

**alpha-endorphin** *n.* see ENDORPHIN.

**alpha error** see TYPE I ERROR.

**Alpha examination** see ARMY TESTS.

**alpha female** see ALPHA MALE.

**alpha-fetoprotein ( $\alpha$ -fetoprotein; AFP)** *n.* a protein found in the blood plasma of fetuses and produced by some tumors in adult humans. In human fetuses, unusually high or low levels of this protein suggest fetal abnormality, as analyzed through a prenatal **alpha-fetoprotein test** of blood samples drawn from pregnant women. In adult humans, measurement of alpha-fetoprotein is used to diagnose liver cancer. In rodents, alpha-fetoprotein binds estrogens and prevents them from entering the brain, thus influencing sexual differentiation.

**alpha level** see SIGNIFICANCE LEVEL.

**alpha male** the top-ranked or dominant male within a group, with primary access to resources, including food and mates. In many species, the alpha male prevents other males from mating or from mating during the peak time of female fertility. There are **alpha females** as well, with primary access to resources within their social groups; in some species, they inhibit reproduction among other females.

**alpha-mannosidosis** *n.* a rare and progressive autosomal recessive, lysosomal storage disease involving deficient activity of an enzyme, alpha-D-mannosidase, needed to metabolize the sugar mannose. Mutations in the *MAN2B1* gene cause the disease. Affected individuals have slow motor development; intellectual disability; skeletal abnormalities; and anomalous facial features (e.g., large head, low hairline, flattened bridge of the nose, protruding jaw, large tongue). Early-onset alpha-mannosidosis, the most severe form, can affect the fetus but most often begins in early infancy. It is typically fatal during childhood. Onset of the disorder later in childhood or early adolescence is associated with milder symptoms that progress more slowly and with an increased lifespan into middle age.

**alpha-melanocyte stimulating hormone ( $\alpha$ -MSH; alpha-MSH)** a form of MELANOCYTE-STIMULATING HORMONE that binds the MELANOCORTIN-4 RECEPTOR and is involved in diverse functions, such as regulation of feeding and sexual function.

**alpha-methylparatyrosine (AMPT)** a drug that inhibits the synthesis, from the amino acid tyrosine, of the catecholamine neurotransmitters DOPAMINE, NOREPINEPHRINE, and EPINEPHRINE. It is sometimes used to treat catecholamine-secreting tumors of the adrenal gland (e.g., PHEOCHROMOCYTOMA). **Alpha-methyltyrosine** has a similar action.

**alpha motor neuron** see MOTOR NEURON.

**alpha movement** a form of APPARENT MOVEMENT in which an object appears to expand or contract when in-

creasingly larger or smaller versions of it are presented in rapid succession. Also called **alpha motion**.

**alpha-MSH** ( $\alpha$ -MSH) abbreviation for ALPHA-MELANOCYTE STIMULATING HORMONE.

**alpha neurofeedback** see ALPHA-WAVE TRAINING.

**alpha receptor** see ALPHA-ADRENERGIC RECEPTOR.

**5 alpha-reductase** an enzyme that catalyzes the conversion of the steroid hormone testosterone to dihydrotestosterone in males and females. It is necessary for the process of sexual differentiation and the masculinization of external genitalia in male fetuses.

**alpha rhythm** see ALPHA WAVE.

**alpha state** a state of relaxed wakefulness associated with increased production of ALPHA WAVES in some individuals. It is claimed that alpha states may be induced by ALPHA-WAVE TRAINING, meditation, yoga, hypnotic suggestion, flow experiences, and other calmly focused activities.

**Alpha test** see ARMY TESTS.

**alpha wave** in scalp electroencephalography, a type of low-amplitude BRAIN WAVE (frequency 8–12 Hz) that typically occurs when the eyes are closed or unfocused and no deliberate mental tasks are taking place; it is associated with a wakeful but relaxed state. There is some evidence that the occurrence of alpha waves can be increased, through meditation techniques or ALPHA-WAVE TRAINING for example. Also called **alpha rhythm**; **Berger rhythm**.

**alpha-wave training** a type of NEUROFEEDBACK training that aims to teach individuals how to achieve a state of peaceful wakefulness and relaxation by increasing alpha-band activity (ALPHA WAVES). The technique usually involves **alpha neurofeedback** (formerly called **alpha biofeedback**), the process of providing a feedback stimulus (typically an auditory tone) when alpha waves appear over the occipital cortex on a scalp electroencephalogram. The efficacy of such training is disputed. See also ALPHA STATE.

**Alport syndrome** a familial condition characterized by hematuria (bloody urine), nephropathy (disease of the kidney), and deafness. Hematuria may first appear in infancy, whereas deafness is likely to develop around puberty. The condition also may be accompanied by cataracts and intellectual disability. It is caused by mutation of the genes *COL4A3*, *COL4A4*, *COL4A5*, or *COL4A6*, which specify chains of basement membrane (Type IV) collagen. [described in 1927 by Arthur Cecil **Alport** (1879–1959), British physician]

**alprazolam** *n.* a BENZODIAZEPINE used for the treatment of generalized anxiety disorder and panic disorder. It is rapidly absorbed and has a relatively brief duration of action. Common side effects include drowsiness, light-headedness, headache, and confusion. U.S. trade name: **Xanax**.

**ALS 1.** abbreviation for ALDOLASE. **2.** abbreviation for AMYOTROPHIC LATERAL SCLEROSIS.

**als ob** as if (German). The phrase is associated with the thought of German philosopher Hans Vaihinger (1852–1933), who proposed that certain “fictions,” such as free will, immortality, and objective morality, should be supported and lived as if (*als ob*) they were true, because there is biological advantage in doing so. Vaihinger’s work influenced that of Alfred ADLER.

**Alström–Hallgren syndrome** a familial disorder that is characterized by obesity, deafness, visual disorders, and

diabetes and occasionally associated with mental disorders. [Carl-Henry **Alström** (1907–1993), Swedish physician; Bertil **Hallgren**, 20th-century Swedish geneticist]

**ALT** abbreviation for ALTERNATIVE SCHEDULE OF REINFORCEMENT.

**alteration hypothesis** a theoretical explanation of the MISINFORMATION EFFECT stating that misleading information introduced after a witnessed event replaces, transforms, or impairs the original memory of the event, leading to erroneous reporting of that event. Also called **substitution hypothesis**. Compare COEXISTENCE HYPOTHESIS.

**altercasting** *n.* in ROLE THEORY, the process of imposing identities and social roles on others (“alters”), usually by treating them in ways that are consistent with the imposed identity or role. —**altercast** *vb.*

**altered state of consciousness (ASC)** a state of psychological functioning that is significantly different from that experienced in ordinary states of CONSCIOUSNESS. Reports of the experience of ASCs are highly subjective, but the phenomenon is susceptible to some degree of empirical study. It tends to be characterized by altered levels of self-awareness, affect, reality testing, orientation to time and place, wakefulness, responsiveness to external stimuli, or memorability, or by a sense of ecstasy, boundlessness, or unity with the universe. ASCs may result from changes in neurobiological functioning due to oxygen depletion or psychoactive drug use; from hypnosis, meditation, and sensory deprivation; or from mystical or religious experience. Although classical psychoanalysis has tended to regard ASCs as symptoms of regressive states, other schools of thought, such as Jungian, humanistic, and TRANSPERSONAL PSYCHOLOGY, regard them as higher states of consciousness and, often, as indicative of a more profound level of personal and spiritual evolution.

**alter ego 1.** a second identity or aspect of a person that exists metaphorically as his or her substitute or representative, with different characteristics. For example, an **avatar** is a digital alter ego that provides a virtual representation of a computer or Internet user in games, online discussion boards, or alternate online universes. **2.** an intimate, supportive friend with whom an individual can share all types of problems and experiences, as if he or she were another self. **3.** in psychodrama, a group member, other than the therapist, who assumes the role of a significant figure in the PROTAGONIST’s life (see AUXILIARY EGO) but who also speaks as part of the protagonist in order to give voice to and portray actions felt but not expressed by the protagonist.

**alter-ego transference** see TWINSHIP TRANSFERENCE.

**alternate binaural loudness-balance test** a test for abnormal sensitivity to loud sounds (see RECRUITMENT). The individual hears two tones of the same frequency played alternately into the two ears, but the intensity of the sound at one ear is set to begin at a level 20 dB higher than the other. The intensity of the sound increases in the defective ear until it is perceived to match the sound level in the normal ear.

**alternate form** a set of test items that are developed to be similar to another set of test items, so that the two sets represent different versions of the same test. In order to demonstrate that one test is an alternate form of the other, a researcher usually must show that there is matching content (each test has the same number of each kind of item) and that FACTOR LOADINGS and MEASUREMENT ERRORS

are approximately the same across the two versions. Alternate forms of a test can be used to measure its reliability (see ALTERNATE-FORMS RELIABILITY). Also called **comparable form**; **equivalent form**; **parallel form**.

**alternate-forms reliability** a measure of the consistency and freedom from error of a test, as indicated by a CORRELATION COEFFICIENT obtained from responses to two or more ALTERNATE FORMS of the test. Also called **comparable-forms reliability**; **equivalent-forms reliability**; **parallel-forms reliability**.

**alternate-uses test** a test of DIVERGENT THINKING that requires the participant to cite as many uses as possible for a specified object other than its common use. For example, a newspaper could be used for starting a fire or packing objects in a box.

**alternating personality** a personality with components that appear alternately. See DISSOCIATIVE IDENTITY DISORDER.

**alternating perspective** the abrupt transition from one perspective to another that occurs when an AMBIGUOUS FIGURE is viewed. Only one perspective can be perceived at a given time. See NECKER CUBE; REVERSIBLE FIGURE; RUBIN'S FIGURE.

**alternating treatments design** a type of study in which the experimental condition or treatment assigned to the participant changes from session to session or within sessions. For example, a researcher comparing two methods for eliminating the disruptive classroom behavior of a student might have the teacher use one method throughout the morning and the other method throughout the afternoon and then evaluate the student's behavior with each technique.

**alternation learning** 1. a task in which an individual must learn to alternate responses, never making the same response twice in a row. 2. alternation of reward and non-reward for a single response. In this case, responding is faster for a reward than it is when no reward is available.

**alternation method** a technique used in studies of thinking, language, and problem solving, in which the participant is required to follow an increasingly complex sequence of activities in order to reach a goal or receive a reward. An example is RRR LLL, or triple alternation: turning right three times, then left three times.

**alternative behavior completion** a technique in BEHAVIOR THERAPY for extinguishing unwanted habits by substituting an incompatible behavior for the nondesired behavior (e.g., substituting nail care for nail biting). This technique can be practiced in vivo (see IN VIVO DESENSITIZATION) or imaginably in the therapy session or assigned as homework. It is often used as an alternative to mild AVERSION THERAPY. See also COMPETING RESPONSE TRAINING.

**alternative dispute resolution** the resolving of disputes between parties using neutral third parties, who act as arbitrators or mediators, rather than by engaging in a lawsuit.

**alternative distribution** see SPLIT RECOVERY.

**alternative hypothesis (AH; symbol:  $H_1$ ,  $H_a$ )** a statement that is contrasted with or contradicts the NULL HYPOTHESIS as an explanation for observed data. Generally, it is a scientific prediction of significant results in HYPOTHESIS TESTING; that is, an alternative hypothesis posits meaning-

ful differences or relationships between the variables under investigation.

**alternative hypothesis distribution** a theoretical set of plausible values of a characteristic under certain assumptions that is compared to its corresponding NULL DISTRIBUTION in the process of conducting a POWER ANALYSIS.

**alternative medicine** see COMPLEMENTARY AND ALTERNATIVE MEDICINE.

**alternative psychology** any approach to understanding psychological issues that ignores or rejects accepted academic, scientific, or mainstream views. These approaches may involve unorthodox metaphysical assumptions and focus on spiritualistic and mystical influences. Emphasis may be on aspects of human thought, feeling, and actions that are ignored by mainstream psychology.

**alternative psychotherapy** any treatment approach not considered to be within the mainstream of psychotherapy. For example, the use of PSYCHEDELIC THERAPY in the 1950s and 1960s was considered alternative. PRIMAL THERAPY and REICHIAN ANALYSIS are also considered alternative approaches by most therapists.

**alternative schedule of reinforcement (ALT)** in conditioning, a rule that provides for reinforcement of a response according to either a FIXED-RATIO SCHEDULE or a FIXED-INTERVAL SCHEDULE, whichever is satisfied first.

**alternative school** any school in the traditional or conventional educational system that provides flexible and innovative teaching, curriculum, grading, or degree requirements.

**alternative sentencing** the imposition of sanctions other than traditional imprisonment on those convicted of crimes so as to reduce recidivism and help individuals become successful members of society. Examples include DIVERSION PROGRAMS, electronic monitoring, and community service. Also called **community correction**.

**altitude sickness** illness resulting from the oxygen deficiency experienced at high altitudes (see HYPOXIA). Symptoms include nausea, breathlessness, nosebleed, and impaired mental processes. Also called **Acosta's syndrome**; **D'Acosta's syndrome**; **hypobaropathy**; **mountain-climber's syndrome**; **mountain sickness**. See also ACUTE MOUNTAIN SICKNESS.

**altitude test** a type of assessment or examination intended to calculate an individual's ability in a particular area as indicated by the level of performance that the individual can attain.

**altricial** *adj.* describing animals, such as primates (including humans), that are not fully developed at birth and require considerable and sustained parental care beyond nursing or feeding in order to survive. Compare PRECOCIAL.

**altruism** *n.* an apparently unselfish behavior that provides benefit to others at some cost to the individual. In humans, it covers a wide range of behaviors, including volunteerism and martyrdom, but the degree to which such behaviors are legitimately without egoistic motivation is subject to debate. In animal behavior, it is difficult to understand how altruism could evolve in a species since NATURAL SELECTION operates on individuals. However, organisms displaying altruism can benefit if they help their relatives (see KIN SELECTION) or if an altruistic act is subsequently reciprocated (RECIPROCAL ALTRUISM). —**altruistic** *adj.* —**altruist** *n.*

**altruistic aggression** a form of aggression among nonhuman animals in which the aggressor defends not itself but other group or family members.

**altruistic suicide** one of four types of suicide proposed in 1897 by Émile DURKHEIM, involving the belief that killing oneself will serve a greater societal good by saving others from suffering or otherwise benefiting them. Examples include suicides required by social norms (e.g., the act of Sati in India) and those in which people give their lives to save their friends (e.g., covering an explosion to protect fellow soldiers in combat). Whereas Durkheim considered EGOISTIC SUICIDE a function of deficient integration into social groups, he viewed altruistic suicide as resulting from excessive social integration. Indeed, altruistic suicide is generally committed by members of highly integrated groups: Individuals experience such great loyalty or identification with the rules and values of the group as to view death as an obligation or honorable sacrifice. See also ANOMIC SUICIDE; FATALISTIC SUICIDE.

**alveolar 1.** *adj.* denoting a speech sound made with the tongue touching or near the upper ALVEOLAR RIDGE, for example, [d], [t], [n], or [s]. See also DENTAL; INTERDENTAL. **2.** *n.* an alveolar speech sound.

**alveolar ridge** the bony ridge of either the upper or lower jawbones that contains the sockets of the teeth (i.e., the alveoli).

**Alzheimer's Association** a nonprofit organization that provides information, SUPPORT GROUPS, and other assistance to individuals with Alzheimer's disease and their caregivers and that promotes research in the field to enhance early detection, prevention, and treatment of the disease. Originally known as the **Alzheimer's Disease and Related Disorders Association** upon its founding in 1980, the organization adopted its current name in 1988. It is headquartered in Chicago, Illinois, and has more than 75 local chapters nationwide.

**Alzheimer's disease** a progressive neurodegenerative disease characterized by cortical atrophy, neuronal death, synapse loss, and accumulation of AMYLOID PLAQUES and NEUROFIBRILLARY TANGLES, causing DEMENTIA and a significant decline in functioning. Early features include deficits in memory (e.g., rapid forgetting of new information, impaired recall and recognition), ANOMIA, executive dysfunction, depressive symptoms, and subtle personality changes such as decreased energy, social withdrawal, indifference, and impulsivity. As the disease progresses, there is global deterioration of cognitive capacities with intellectual decline, APHASIA, AGNOSIA, and APRAXIA as well as behavioral features, including apathy, emotional blunting, mood-dependent delusions, decreased sleep and appetite, and increased motor activity (e.g., restlessness, wandering). Major risk factors for Alzheimer's disease include advanced age (it typically occurs after age 70), a family history of the disease, and genetic factors, particularly the presence of the ApoE4 allele (see APOLIPOPROTEIN E) on chromosome 19. In a small minority (<10%) of cases, referred to as having **early-onset Alzheimer's disease**, a diagnosis is made between the ages of 30 and 65 and is usually attributed to genetic causes. [first described in 1907 by Alois **Alzheimer** (1864–1915), German neurologist]

**amacrine cell** any of a diverse class of neurons in the retina that connect RETINAL BIPOLAR CELLS and RETINAL GANGLION CELLS, and other amacrine cells. Amacrine cells contribute to the CENTER–SURROUND ANTAGONISM of retinal

ganglion cell receptive fields. However, they have no axons and do not contribute directly to the output of the retina.

**amae** *n.* an indigenous Japanese concept that describes a behavioral pattern roughly translated as indulgent dependency in which people ask others to perform actions for them that they could actually perform for themselves. Typically found in mother–child relationships, amae is distinguished from true dependency by the inappropriateness of the requests and their presumed acceptance. [first described by Japanese psychologist Takeo Doi (1920–2009)]

**Amalric's syndrome** see DIALLINAS–AMALRIC SYNDROME. [French ophthalmologist Pierre **Amalric** (1923–1999)]

**amantadine** *n.* an ANTIVIRAL DRUG that is also used to treat Parkinson's disease and to ameliorate drug-induced EXTRAPYRAMIDAL SYMPTOMS. U.S. trade name: **Symmetrel**.

**amaurosis** *n.* partial or complete loss of sight without evidence of organic abnormality of the affected eye or eyes. The cause is often damage to the optic nerve or the brain. The condition may be hereditary, as in LEBER'S DISEASE; transient (see AMAUROSIS FUGAX); part of a syndrome, such as TAY–SACHS DISEASE; or the result of complete destruction of the STRIATE CORTEX (**cortical amaurosis**). See also FUNCTIONAL BLINDNESS.

**amaurosis fugax** recurrent episodes of visual loss, which can be caused by, among other things, glaucoma, intoxication, optic neuritis, migraine, or retinal vascular disease. The visual loss is painless and usually lasts 2 to 3 minutes; recovery of vision is more gradual, marked by gray, blurred, or hazy vision. Also called **transient monocular blindness**.

**ambenonium** *n.* an anticholinesterase (see CHOLINERGIC DRUG) that can be taken orally to relieve the symptoms of myasthenia gravis. U.S. trade name: **Mytelase**.

**ambi-** *prefix* both.

**ambidextrous** *adj.* able to use either hand with equal skill.

**Ambien** *n.* a trade name for ZOLPIDEM.

**ambient awareness 1.** awareness of unattended aspects of visual and auditory scenes. A unique stimulus element is processed at some level even when attention is engaged elsewhere. Compare SITUATION AWARENESS; VIGILANCE. **2.** an ongoing awareness of the activities of others (e.g., friends, families, colleagues) that is sustained by constant interaction with them through social networking media such as Facebook and Twitter and other information technologies.

**ambient conditions** the physical variables in a particular environment (e.g., temperature, humidity, air quality, noise level, and intensity of light) that, taken as a whole, create an atmosphere that may evoke a distinct feeling or mood. Ambient conditions can be distinguished from specific elements of the environment.

**ambient optic array** the visual information contained in the reflected light that surrounds a viewer at any point in time. James J. GIBSON proposed that the visual system evolved within this ambient optic array, enabling visual perception of the external environment to emerge directly and without need for mental representations of the environment. Also called **optic array**. See also ECOLOGICAL PERCEPTION.



**ambiguity** *n.* **1.** the property of a behavior, behavior pattern, or situation that might be interpreted in more than one way. **2.** in linguistics, the property of a word, phrase, or sentence that has more than one possible meaning. Ambiguity in a phrase or sentence may be lexical, as in *The students are revolting*, or structural, as in *black cats and dogs*; often there is a combination of both factors. In PSYCHOLINGUISTICS, the main area of interest has been the process used to interpret sentences whose SURFACE STRUCTURE could reflect two quite different DEEP STRUCTURES, as in the instruction *Before opening tin, stand in boiling water for 10 minutes*. In psychoanalytic theory, ambiguous words or phrases are usually interpreted as a reflection of the speaker's conflicted hidden feelings or unconscious wishes about the subject. See also HOMONYM; POLYSEMY; PUN. —**ambiguous** *adj.*

**ambiguity scale** any questionnaire used in evaluating tolerance or intolerance for vagueness, ambiguity, and indefiniteness.

**ambiguity tolerance** the degree to which one is able to accept, and to function without distress or disorientation in, situations having conflicting or multiple interpretations or outcomes.

**ambiguous figure** a visual stimulus that can be interpreted in more than one way, such as an EMBEDDED FIGURE or a REVERSIBLE FIGURE. A well-known example is the young girl–old woman image, in which the black-and-white drawing sometimes appears to be of a young girl and sometimes of an old lady. This phenomenon is not restricted to the visual: An **ambiguous stimulus** is one of any sensory modality that can have multiple interpretations.

**ambiguous genitalia** sex organs that are not fully differentiated between male and female, as in girls born with a clitoris that could be mistaken for a penis. See also HERMAPHRODITISM.

**ambisexual** *adj.* **1.** denoting individuals or characteristics that manifest no sex or gender dominance. Compare ASEXUAL. **2.** an older term for *bisexual* (see BISEXUALITY), now rarely used. —**ambisexuality** *n.*

**ambitendency** *n.* **1.** the tendency to act in opposite ways, based on conflicting behavioral motivations. **2.** a pattern of incomplete motor responses in anticipation of a voluntary action. It occurs in catatonic states as a type of PSYCHOMOTOR RETARDATION in which the individual appears motorically stuck and exhibits hesitant, indecisive motions in the absence of voluntary movement. **3.** in Jungian psychology, the psychic ambivalence that is caused by the existence of opposing tendencies.

**ambivalence** *n.* **1.** the simultaneous existence of contradictory feelings and attitudes, such as pleasantness and unpleasantness or friendliness and hostility, toward the same person, object, event, or situation. Eugen BLEULER, who first defined *ambivalence* in a psychological sense and referred to it as **affective ambivalence**, regarded extreme ambivalence, such as an individual expressing great love for his or her mother while also asking how to kill her, as a major symptom of schizophrenia. **2.** uncertainty or indecisiveness about a course of action. —**ambivalent** *adj.*

**ambivalence of an attitude** the extent to which the evaluative responses associated with an attitude are inconsistent with one another. If the responses are uniformly positive or uniformly negative, ambivalence is low. If both positive and negative responses are associated with the atti-

tude, ambivalence is high. See also AFFECTIVE–COGNITIVE CONSISTENCY; AFFECTIVE–EVALUATIVE CONSISTENCY; COGNITIVE–EVALUATIVE CONSISTENCY; CROSS-DIMENSION ATTITUDE CONSISTENCY; WITHIN-DIMENSION ATTITUDE CONSISTENCY.

**ambivalent attachment** **1.** in the STRANGE SITUATION, a form of INSECURE ATTACHMENT in which infants show a combination of positive and negative responses toward a parent. After separation, for example, infants may simultaneously seek and resist close contact with the returning parent. Also called **resistant attachment**. **2.** an adult interpersonal style characterized by worry that a partner will break off a relationship or by hesitancy in forming deeply committed relationships despite a desire to do so. Also called **anxious–ambivalent attachment style**.

**ambivalent sexism** a type of SEXISM that is characterized by the coexistence of negative and positive attitudes toward one of the two sexes. For example, such attitudes toward women might involve fear and hostility on the one hand and an exaggerated chivalry and protectiveness on the other. [initially described in 1996 by U.S. social psychologists Peter Glick and Susan T. Fiske (1952– )]

**ambiversion** *n.* the tendency to display characteristics of introversion and extraversion in approximately equal degrees. Such a person would be referred to as an **ambivert**.

**ambly-** *combining form* deficient or impaired.

**amblyacousia** *n.* dullness or loss of hearing.

**amblyopia** *n.* poor vision caused by abnormal visual experience in early life and not any physical defect of the eye. Common predisposing conditions include misalignment of the eyes (strabismus) and differing refractive powers of the eyes (anisometropia). Also called (colloquially) **lazy eye**. —**amblyopic** *adj.*

**amblyoscope** *n.* an instrument used to determine the angle of deviation of the eyes (the degree of STRABISMUS), as well as the extent to which the eyes can be used together even though one or both are deviated. Also called **orthoptoscope**.

**ambrosiac** *adj.* in the ZWAARDEMAKER SMELL SYSTEM, denoting an odor quality that is smelled in musk and sandalwood. Also called **ambrosial**.

**ambulation** *n.* the act of walking from place to place. Ambulation training often is necessary in the rehabilitation of individuals who have had a spinal injury, stroke, or other trauma affecting the neuromuscular system and in the physical therapy of individuals with certain genetic or congenital disorders.

**ambulatory care** medical or psychological services provided to individuals on an outpatient, nonemergency basis. Such services may include observation, diagnosis, treatment (referred to as **ambulatory treatment**), and rehabilitation and are often provided at such places as a doctor's office, health center, or hospital outpatient department.

**ambulatory schizophrenia** a condition in which a person who was previously hospitalized with extreme symptoms and then diagnosed as having schizophrenia no longer requires hospitalization but nonetheless behaves eccentrically and cannot function in a manner consistent with social expectations.

**ambulatory services** mental health, counseling, or medical services provided on an outpatient basis, that is, without the recipient of those services needing to be in or

remain in a hospital, clinic, or other health care facility. See also WALK-IN CLINIC.

**ambulatory treatment** see AMBULATORY CARE.

**amelioration** *n.* a change for the better in a condition, especially one involving a disease or disorder. —**ameliorative** *adj.*, *n.*

**amenity move** a type of residence change, often occurring around the time of retirement, that is made to improve the quality of one's life.

**amenorrhea** *n.* the absence of menstruation. When menstruation fails to begin after puberty, the condition is called **primary amenorrhea**. If menstrual periods stop, in the absence of pregnancy or menopause, the condition is known as **secondary amenorrhea**. Changes in physical or mental health can be a causal factor.

**American Academy of Clinical Sexologists, Inc.** (AACS) a private, independent graduate school that offers a doctoral degree in clinical sexology and that is designed for licensed mental health professionals who wish to practice sex therapy independently or in addition to their clinical specialty.

**American Alliance for Health, Physical Education, Recreation and Dance** (AAHPERD) the largest professional organization in the United States to support research in and assist professionals involved with physical education, leisure, fitness, dance, health promotion, and health education.

**American Anorexia/Bulimia Association** see NATIONAL EATING DISORDERS ASSOCIATION.

**American Association for the Advancement of Science** (AAAS) a professional organization, founded in 1848 to represent all scientific disciplines, whose mission is to "advance science, engineering, and innovation throughout the world for the benefit of all people." AAAS promotes education in, public understanding of, and responsible conduct and use of science and technology. The world's largest general scientific society, it publishes the journal *Science*.

**American Association of Applied and Preventive Psychology** (AAAPP) a professional organization whose purpose is to promote the interests of clinical and preventive psychology. It encourages a research orientation toward clinical and preventive work, emphasizing the consumer and public interest above guild or personal interests. Its main publication is the journal *Applied and Preventive Psychology: Current Scientific Perspectives*.

**American Association of Applied Psychology** (AAPA) a professional organization founded in 1937 by a group of consulting, clinical, educational, and industrial psychologists who broke from the AMERICAN PSYCHOLOGICAL ASSOCIATION in order to represent the applied interests of U.S. psychologists more effectively. Their main publication was the *Journal of Consulting Psychology*. In 1944, the group rejoined the American Psychological Association.

**American Association of Clinical Psychologists** (AACP) a professional organization founded in 1917 when clinical psychologists broke from the AMERICAN PSYCHOLOGICAL ASSOCIATION in order to promote training and certification standards for the practice of clinical psychology. The AACP returned to the American Psychological Association in 1919 as its first special-interest group, the Section of Clinical Psychology.

**American Association of Mental Retardation** (AAMR) the former name for the AMERICAN ASSOCIATION ON INTELLECTUAL AND DEVELOPMENTAL DISABILITIES.

**American Association of Sexuality Educators, Counselors and Therapists** (AASECT) a nonprofit, interdisciplinary, professional accrediting organization founded in 1967 whose mission is to provide professional education and certification of sexuality educators, counselors, and therapists and to promote understanding of human sexuality and healthy sexual behavior.

**American Association on Intellectual and Developmental Disabilities** (AAIDD) a professional organization, founded in 1876, whose mission is to promote progressive policies, sound research, effective practices, and universal human rights for people with intellectual and developmental disabilities. The oldest and largest interdisciplinary organization in this field. It was formerly called the **American Association of Mental Retardation** (AAMR).

**American Birth Control League** (ABCL) the former name of the PLANNED PARENTHOOD FEDERATION OF AMERICA.

**American Board of Medical Specialties** (ABMS) the umbrella organization for 24 approved medical specialty boards in the United States. Established in 1933, its mission is to maintain and improve the quality of medical care in the United States by assisting the member boards in their efforts to develop and utilize professional and educational standards for the evaluation and certification of physician specialists.

**American Board of Professional Psychology** (ABPP) the umbrella organization for 14 psychological specialty boards in the United States. Established in 1947, its purpose is to establish, implement, and maintain standards and set examinations for specialty areas in the practice of psychology. A *specialty* is defined as a focused area in which special competency has been acquired through an organized sequence of education, training, and practical experience.

**American Board of Psychological Hypnosis** (ABPH) a professional organization, recognized by the American Psychological Association (APA), that certifies psychologists in clinical and experimental hypnosis. Applicants must have a doctoral degree, membership or eligibility for membership in the APA, and a minimum of 5 years of acceptable experience with hypnosis, among other requirements. Individuals seeking the Diplomate in Clinical Hypnosis must also be licensed or certified and possess or be eligible for the American Board of Professional Psychology Diplomate in a clinical or counseling area.

**American Coaching Effectiveness Program** (ACEP) see AMERICAN SPORT EDUCATION PROGRAM.

**American College of Sports Medicine** (ACSM) a multidisciplinary, international organization of exercise physiologists, sport medicine physicians, athletic trainers, and health and fitness educators that strives to provide the most current information on health and fitness. The organization, whose membership comes from over 90 countries, provides certification in the areas of health and fitness.

**American College Testing Program** (ACTP) see ACT ASSESSMENT.

**American Counseling Association** (ACA) a professional and educational organization dedicated to promoting the development of the counseling profession. It is the

world's largest association of professional counselors and has been instrumental in setting professional and ethical standards. Founded in 1952 as the American Personnel and Guidance Association (APGA), it changed its name to the American Association of Counseling and Development (AACD) in 1983 and adopted its present name in 1992.

**American Educational Research Association (AERA)** a professional organization founded in 1916 to improve the educational process by encouraging scholarly inquiry related to education and by promoting the dissemination and practical application of research results.

**American Indian** see NATIVE AMERICAN.

**American Law Institute Model Penal Code insanity test** a legal standard for establishing CRIMINAL RESPONSIBILITY, adopted in 1962, that combines elements of the M'NAGHTEN RULE and the IRRESISTIBLE IMPULSE RULE. According to this standard, individuals are not responsible for criminal conduct if mental illness or defect rendered them either unable to understand at the time that what they were doing was against the law or unable to control their behavior enough to keep from breaking the law. Also called **American Law Institute Guidelines (ALI Guidelines)**; **Brawner decision**; **Brawner rule**. See also INSANITY DEFENSE REFORM ACT.

**American Manual Alphabet** see FINGERSPELLING.

**American optical H-R-R plates** see HARDY-RAND-RITTLER PSEUDOISCHROMATIC PLATES.

**American Orthopsychiatric Association** an interdisciplinary professional organization engaged in preventive, treatment, and advocacy approaches to mental health. The prefix *ortho-* (from the Greek *orthos*, "straight") emphasizes the need for preventive approaches. The *American Journal of Orthopsychiatry* is its major publication. [founded in 1924 by U.S. physician Karl Menninger (1893–1990)]

**American Pain Society (APS)** a multidisciplinary professional organization whose mission is to advance pain-related research, education, treatment, and professional practice. It was founded in 1977 as the U.S. chapter of the International Association for the Study of Pain (IASP).

**American Parkinson Disease Association, Inc. (APDA)** an organization that provides support groups, information, and referrals for individuals with Parkinson's disease and their families.

**American Philosophical Society (APS)** the oldest scholarly organization in the United States, founded in 1743 under the impetus of Benjamin Franklin in Philadelphia, Pennsylvania, where it is still headquartered. Members are elected on the basis of extraordinary accomplishments in the sciences and humanities. Publications include the society's *Transactions*, first published in 1771; *Memoirs*; *Proceedings*; and a *Yearbook*. The society supports excellence in scholarly research through special prizes and grants.

**American Psychiatric Association (APA)** a national medical and professional organization whose physician members specialize in the diagnosis, treatment, and prevention of mental disorders. It was founded in 1844 as the Association of Medical Superintendents of American Institutes for the Insane and renamed the American Medico-Psychological Association in 1892. The current name was adopted in 1922. Its objectives include the improvement of care for people with mental illnesses, the promo-

tion of research and professional education in psychiatry, and the dissemination of psychological knowledge through nationwide public information, education, and awareness programs and materials. Its extensive publications include the *Diagnostic and Statistical Manual of Mental Disorders* (see DSM–IV–TR; DSM–5).

**American Psychoanalytic Association (APsA)** a professional organization for psychoanalysts that focuses on education, research, and membership development. Founded in 1911, it is the oldest national psychoanalytic organization, with 30 accredited training institutes and 39 affiliate psychoanalytic societies. It is the U.S. chapter of the International Psychoanalytic Association and is an affiliate of the American Association for the Advancement of Science. Its major publication is the *Journal of the American Psychoanalytic Association*.

**American Psychological Association (APA)** a scientific and professional organization founded in 1892 that represents psychology in the United States and is the largest association of psychologists worldwide. Its mission is to advance the creation, communication, and application of psychological knowledge to benefit society and improve people's lives. Some of its specific goals are to encourage the development and application of psychology in the broadest manner; to promote research in psychology, the improvement of research methods and conditions, and the application of research findings; to improve the qualifications and usefulness of psychologists by establishing high standards of ethics, conduct, education, and achievement; and to increase and disseminate psychological knowledge through meetings and a wide variety of scholarly material available through print and electronic media. Its major avenues of communication include some 70 scholarly journals, the *APA Publication Manual*, some 50 to 60 books and videotapes per year, and 7 electronic databases.

**American Psychological Association of Graduate Students (APAGS)** the largest organized group of psychology graduate students worldwide, established in 1988 as a constituency group of the AMERICAN PSYCHOLOGICAL ASSOCIATION. It develops and disseminates information about relevant education and training issues and supports students through scholarships and awards, association advocacy work, and professional development opportunities.

**American Psychological Foundation (APF)** a non-profit, philanthropic organization, founded in 1953, that provides financial support for innovative research, scholarships, and programs in psychology. APF focuses on helping talented graduate students and early career psychologists to launch their careers and on seeding the knowledge base to promote a better understanding of human behavior and to benefit human welfare.

**American Psychological Society (APS)** the former name for the ASSOCIATION FOR PSYCHOLOGICAL SCIENCE.

**American Psychosomatic Society (APS)** an interdisciplinary professional organization founded in 1942 whose mission is to promote a scientific understanding of the interrelationships among biological, psychological, social, and behavioral factors in human health and disease. Its main publication is *Psychosomatic Medicine*.

**American Sign Language (ASL)** see SIGN LANGUAGE.

**American Society for Psychical Research (ASPR)** a scholarly society devoted to the scientific investigation of

parapsychological and paranormal phenomena. Initially founded in 1885 by a group including William JAMES, it became a branch of the British SOCIETY FOR PSYCHICAL RESEARCH before becoming independent once more in 1906. It publishes the *Journal of the American Society for Psychical Research* (established 1907).

**American Sport Education Program (ASEP)** a series of educational courses for parents, coaches, officials, and administrators of volunteer youth sport that has an athlete-centered philosophy. It was formerly known as the **American Coaching Effectiveness Program (ACEP)**.

**Americans With Disabilities Act (ADA)** a U.S. federal law that prohibits hiring and other employment practices that discriminate on the basis of physical or mental impairments, unless it can be shown that these would prevent the individual from performing the essential or primary functions of the job. Impairments are defined as limitations that detract from one or more major life activities. The ADA also prohibits discrimination in other areas, such as access to programs, services, and activities provided by a public agency (e.g., health care, social services, courts, community meetings); access to public accommodations (e.g., restaurants, hotels, schools and colleges, recreational facilities); and access to telecommunications (e.g., telephone, computers). See also BONA FIDE OCCUPATIONAL QUALIFICATION.

**Ameslan** *n.* a contraction of American SIGN LANGUAGE.

**Ames room** an irregularly shaped but apparently rectangular room in which cues for DEPTH PERCEPTION are used experimentally to distort the viewer's perception of the relative size of objects within the room. Also called **Ames distorted room**. [Adelbert Ames Jr. (1880–1955), U.S. psychologist, inventor, and artist]

**amethystic** *n.* see ANTI-INTOXICANT.

**ametropia** *n.* any refractive abnormality of the eye, including MYOPIA (nearsightedness), HYPEROPIA (farsightedness), and ASTIGMATISM. The inability of the eye to bend (refract) light into perfect focus on the retina reduces visual acuity and causes blurriness.

**AMH** abbreviation for anti-Müllerian hormone. See MÜLLERIAN-INHIBITING HORMONE.

**AMI 1**, abbreviation for ATHLETIC MOTIVATION INVENTORY.  
**2**, abbreviation for AUTOBIOGRAPHICAL MEMORY INTERVIEW.

**amicus curiae** a third party (Latin, “friend of the court”), such as a psychologist, who is invited or volunteers to educate the court on a matter that has relevance to the dispute before it. See EXPERT WITNESS.

**amiloride** *n.* a heterocyclic carboxy-guanidinium compound used clinically as a diuretic to prevent sodium reabsorption in the kidneys and so lower blood pressure by blocking sodium channels. Amiloride is also used by taste researchers to block sodium channels on the tongue to study the perception of saltiness.

**amimia** *n.* **1**, a language or communication disorder characterized by an inability to convey meaning through appropriate gestures (**motor** or **expressive amimia**) or to interpret the gestures of others (**sensory** or **receptive amimia**). **2**, loss of memory.

**amine** *n.* a chemical compound that contains one or more amino groups ( $-\text{NH}_2$ ). Several neurotransmitters are amines, including ACETYLCHOLINE, NOREPINEPHRINE, and

SEROTONIN. See also AMINE HORMONE; AMINO ACID; BIOGENIC AMINE.

**amine hormone** any of a class of chemical compounds that contain a single AMINO ACID that has been modified into a hormone, such as MELATONIN or NOREPINEPHRINE. Also called **monoamine hormone**.

**amino acid** an organic compound that contains an amino group ( $-\text{NH}_2$ ) and a carboxyl group ( $-\text{COOH}$ ). Twenty amino acids are constituents of proteins; nine of these are **essential amino acids**, that is, they cannot be synthesized by the body and must be obtained from foods. Other amino acids (e.g., GLUTAMIC ACID, GLYCINE) are neurotransmitters or precursors to neurotransmitters.

**amino acid imbalance** a bodily condition characterized by a deficiency of certain essential amino acids in relation to others. It may result from an INBORN ERROR OF METABOLISM, such as phenylketonuria or homocystinuria, or be precipitated by improper diet. An amino acid imbalance may affect metabolic, neurological, and developmental processes.

**aminoketone** *n.* the chemical classification of the antidepressant agent BUPROPION, whose structure and mechanism of action differ from other marketed antidepressants. Although the specific method of action is unknown, it is presumed to involve NORADRENERGIC or DOPAMINERGIC mechanisms.

**aminopterin** *n.* a drug similar to methotrexate that is used in the treatment of leukemia. During the 1950s and 1960s, it was also sometimes used in nonclinical settings to induce abortions. Surviving infants showed teratogenic effects (see TERATOGEN), such as HYDROCEPHALUS, craniosynostosis (premature skull ossification) with skull defects, and mild to moderate intellectual disability.

**aminotransferase** *n.* any of a class of TRANSFERASE enzymes that catalyze the transfer of an amino group ( $-\text{NH}_2$ ) from a donor molecule to a recipient molecule. Two of the better known aminotransferases are ASPARTATE AMINOTRANSFERASE and alanine aminotransferase, which are normally found in the liver and heart, respectively, and are released into the bloodstream as a result of damage to those organs. Hence, they are used as indicators in liver and heart function tests.

**amitriptyline** *n.* a TRICYCLIC ANTIDEPRESSANT introduced into clinical use in 1961; with IMIPRAMINE, it was the first widely used antidepressant agent. Its tertiary amine structure makes it a more potent inhibitor of SEROTONIN and NOREPINEPHRINE reuptake than secondary amines (thereby increasing the availability of serotonin for neurotransmission). It is actually more pronoradrenergic than serotonergic, and it also has significant antihistamine, anticholinergic, and adrenoceptor-blocking activity (producing adverse side effects). It is an effective antidepressant, but its side effects and toxicity in overdose have led to a decline in its use in favor of the SSRIs and other agents. Although still used as an antidepressant, amitriptyline is no longer considered FIRST-LINE MEDICATION and is more likely to be employed in low doses for chronic pain management or the prevention of migraine. It is also sold in combination with a benzodiazepine ANXIOLYTIC (as **Limbitrol** in the United States) or an antipsychotic (as **Etrafon** or **Triavil** in the United States). U.S. trade name: **Elavil**.

**Ammon's horn** see HIPPOCAMPUS.

**amnesia** *n.* partial or complete loss of memory. Either

temporary or permanent, it may be due to physiological factors such as injury or disease (**organic amnesia**), to substance use (**drug-induced amnesia**), or to psychological factors such as a traumatic experience (see DISSOCIATIVE AMNESIA). A disturbance in memory marked by inability to learn new information is called **anterograde amnesia**, and one marked by inability to recall previously learned information or past events is called **retrograde amnesia**. When severe enough to interfere markedly with social or occupational functioning or to represent a significant decline from a previous level of functioning, the memory loss is known as AMNESTIC DISORDER. —**amnesiac** *adj.*, *n.* —**amnesic** or **amnesitic** *adj.*

**amnesic syndrome** see AMNESTIC DISORDER.

**amnesitic aphasia** see ANOMIC APHASIA.

**amnesitic apraxia** an inability to remember and therefore carry out a command, although there is no loss of ability to perform the task. Also called **amnesic apraxia**.

**amnesitic disorder** in *DSM-IV-TR*, a disturbance in memory marked by inability to learn new information (anterograde amnesia) or to recall previously learned information or past events (retrograde amnesia) that is severe enough to interfere markedly with social or occupational functioning or represents a significant decline from a previous level of functioning. A distinction is made between **amnesitic disorder due to a general medical condition**, SUBSTANCE-INDUCED PERSISTING AMNESTIC DISORDER, and **amnesitic disorder not otherwise specified**. The first of these can be caused by a variety of conditions, such as head injury, ANOXIA, HERPES-SIMPLEX ENCEPHALITIS, and posterior cerebral artery stroke, resulting in lesions in specific brain regions, including the MEDIAL TEMPORAL LOBE and the DIENCEPHALON, and their connections with various cortical areas. It may be transient, lasting from several hours to no more than a month (see also TRANSIENT GLOBAL AMNESIA), or chronic (lasting more than 1 month). In *DSM-5*, amnesitic disorder, along with DEMENTIA, has been subsumed into the category **major neurocognitive disorder** and is no longer considered a distinct entity. Formally called **amnesic** (or **amnesitic**) **syndrome**.

**amniocentesis** *n.* a method of examining fetal chromosomes for any abnormality or for determination of sex. A hollow needle is inserted through the mother's abdominal wall into the uterus, enabling collection of amniotic fluid, which contains fetal cells. Compare CHORIONIC VILLUS SAMPLING; PERCUTANEOUS UMBILICAL CORD BLOOD SAMPLING.

**amniotic sac** the fluid-filled membrane that encases and protects the embryo of a bird, reptile, or mammal.

**amobarbital** *n.* an intermediate-acting, rapidly excreted BARBITURATE that was formerly used as a sedative and hypnotic. Like other barbiturates, its toxicity has led to its clinical eclipse by safer agents, such as the BENZODIAZEPINES. Amobarbital abuse can result in addiction, stupor, and death. It was occasionally used to conduct interviews (**Amytal interviews**) designed to elicit unconscious material from patients, as well as information that was consciously withheld. Such interviews were also used in attempting to distinguish between patients who were malingering and those who had a bona fide conversion disorder. Due to numerous legal and ethical issues surrounding amobarbital interviews, in addition to the medical risks associated with administration of barbiturates, such techniques are no longer acceptable in modern clinical practice. U.S. trade name: **Amytal**.

**amok (amuck)** *n.* a CULTURE-BOUND SYNDROME observed among males in Malaysia, the Philippines, and other parts of southeast Asia. The individual experiences a period of social withdrawal and apathy, before making a violent, unprovoked attack on nearby individuals. The aggressor eventually collapses from exhaustion and afterward has no memory of the event. Also called **mata elap**. See also MAL DE PELEA.

**amorphagnosia (amorphognosia)** *n.* see TACTILE AGNOSIA.

**amorphosynthesis** *n.* a disturbance in the ability to synthesize multiple sensory inputs from a particular side of the body, with the right side most commonly affected. The condition is usually a sign of a lesion in the left parietal lobe of the brain.

**amotivational syndrome** a behavior pattern characterized by loss of drive and initiative. It is commonly seen in schizophrenia. The pattern is also believed to be associated with CANNABIS ABUSE, based on anecdotal observations of the lifestyles of chronic cannabis users in various cultures around the world. There is, however, little empirical support for this association. See ANHEDONIA.

**amount of masking** see AUDITORY MASKING.

**amoxapine** *n.* an antidepressant, one of the secondary amine TRICYCLIC ANTIDEPRESSANTS (TCAs), that inhibits the reuptake of norepinephrine and serotonin. It may also have ANTIPSYCHOTIC activity. Amoxapine may cause EXTRAPYRAMIDAL SYMPTOMS and TARDIVE DYSKINESIA but is less associated with anticholinergic side effects than are other TCAs. U.S. trade name: **Asendin**.

**AMP** abbreviation for AFFECT MISATtribution PROCEDURE.

**AMPA** abbreviation for alpha-amino-3-hydroxy-5-methyl-4-isoxazole-propionic acid; an AGONIST that binds to AMPA receptors.

**AMPA receptor** a type of GLUTAMATE RECEPTOR that binds AMPA as well as glutamate. AMPA receptors are coupled to LIGAND-GATED ION CHANNELS and are responsible for most of the activity at synapses where glutamate is the neurotransmitter. Compare NMDA RECEPTOR.

**amphetamine** *n.* a CNS STIMULANT, closely related in structure and activity to ephedrine (see EPHEDRA), that is the prototype of the group of drugs known as the AMPHETAMINES. Amphetamine is a chiral molecule, composed of two stereoisomers (mirror images): levoamphetamine and DEXTROAMPHETAMINE. Specific amphetamines may be racemic mixtures of both stereoisomers. U.S. trade name: **Benzedrine**.

**amphetamine abuse** in *DSM-IV-TR*, a pattern of use of amphetamines or amphetamine-like substances that is marked by recurrent significant adverse consequences related to the repeated ingestion of these substances. This diagnosis is preempted by the diagnosis of AMPHETAMINE DEPENDENCE: If the criteria for amphetamine abuse and amphetamine dependence are both met, only the latter diagnosis is given. In *DSM-5*, however, both have been combined into one category, STIMULANT USE DISORDER, and are no longer considered distinct diagnoses. See also SUBSTANCE ABUSE.

**amphetamine dependence** in *DSM-IV-TR*, repeated or continued use of an amphetamine or amphetamine-like substance despite significant substance-related behavioral, physiological, and psychosocial problems, with or without

tolerance or characteristic symptoms if use is suspended (see AMPHETAMINE WITHDRAWAL). In *DSM-5*, amphetamine dependence has been combined with AMPHETAMINE ABUSE into a single disorder, and neither is considered a distinct diagnosis any longer (see STIMULANT USE DISORDER). See also SUBSTANCE DEPENDENCE.

**amphetamine-induced psychotic disorder** a condition marked by paranoid delusions due to the direct physiological effects of an amphetamine or amphetamine-like substance. The delusions can continue as long as the use of these substances continues and might persist for weeks or months after withdrawal from the substances has been completed. Also called **amphetamine psychosis**.

**amphetamine intoxication** a reversible syndrome caused by the recent ingestion of amphetamines or amphetamine-like substances. It is characterized by behavioral or psychological changes (e.g., aggressive behavior, impaired judgment, suspiciousness, paranoia), as well as one or more signs of physiological involvement (e.g., unsteady gait, impairment in attention or memory). The equivalent term in *DSM-5* is **stimulant intoxication**. See also SUBSTANCE INTOXICATION.

**amphetamine intoxication delirium** in *DSM-IV-TR* and *DSM-5*, a reversible syndrome that develops over a short period of time (usually hours to days) following the heavy ingestion of amphetamines or amphetamine-like substances. The features include disturbed consciousness (e.g., reduced ability to focus, sustain, or shift attention) and changes in cognition (e.g., memory deficit, disorientation, or language disturbance) in excess of those usually associated with AMPHETAMINE INTOXICATION. See also SUBSTANCE INTOXICATION DELIRIUM.

**amphetamine psychosis** see AMPHETAMINE-INDUCED PSYCHOTIC DISORDER.

**amphetamines** *pl. n.* a group of synthetic drugs (substituted PHENYLETHYLAMINES) that stimulate the RETICULAR FORMATION in the brain and cause a release of stored norepinephrine. The effect is a prolonged state of arousal and relief from feelings of fatigue (see CNS STIMULANT). Amphetamines were introduced in 1932 for a variety of clinical uses. During World War II, they were widely dispensed to combat soldiers to enable them to remain alert for periods of up to 60 hours. TOLERANCE develops progressively with continued use until the individual reaches a point of exhaustion and sleeps continuously for several days. AMPHETAMINE ABUSE can result in dependence and a well-defined state of psychosis (see AMPHETAMINE DEPENDENCE; AMPHETAMINE-INDUCED PSYCHOTIC DISORDER). Although widely used in the past for weight loss, relief of depression, and other indications, modern use of amphetamines is more circumscribed because of their adverse effects. They are now used mainly in short- and long-acting preparations to manage symptoms of attention deficit/hyperactivity disorder and to treat certain cases of severe depression or narcolepsy, and they still maintain a military use in the management of fatigue. Amphetamines include AMPHETAMINE itself (the prototype), DEXTROAMPHETAMINE, and METHAMPHETAMINE. Related drugs, with a similar mode of action but different molecular structure, include METHYLPHENIDATE. In addition, some forms and derivatives (including DOM, MDA, and MDMA) have been manufactured as recreational hallucinogenic drugs.

**amphetamine withdrawal** in *DSM-IV-TR*, a characteristic withdrawal syndrome that develops after cessation

of (or reduction in) prolonged, heavy consumption of an amphetamine or amphetamine-like substance. The essential characteristic is depressed mood, sometimes severe, and there may also be fatigue, disturbed sleep, increased appetite, vivid and unpleasant dreams, or PSYCHOMOTOR RETARDATION or agitation, or all of these features. Marked withdrawal symptoms (see CRASH) often follow an episode of intense, high-dose use. The equivalent term in *DSM-5* is **stimulant withdrawal**. See also SUBSTANCE WITHDRAWAL.

**amphi-** *prefix* **1.** uncertain or unclear. **2.** on both sides or of both kinds.

**amplification effect** see DILUTION EFFECT.

**amplitude** *n.* magnitude or extent (e.g., of a stimulus) or peak value (e.g., of a sinusoid wave).

**amplitude distortion** a hearing disorder in which loud sounds are distorted or misjudged.

**amplitude modulation** see MODULATION.

**amplitude of light wave** the maximum deviation of a wave of light from its median intensity. The greater the amplitude of a light wave, the brighter it appears.

**amplitude spectrum** see SOUND SPECTRUM.

**AMPT** abbreviation for ALPHA-METHYLPARATYROSINE.

**ampulla** *n. (pl. ampullae)* any saclike enlargement of a duct or passageway. Ampullae located at each end of the SEMICIRCULAR CANALS of the inner ear contain HAIR CELLS that help maintain balance.

**amputation** *n.* the surgical or traumatic removal of a limb or other appendage from the body. Surgical amputation generally is performed as a life-saving measure following an injury, to prevent the spread of a malignant tumor or gangrene, or to remove a body part that no longer has adequate blood circulation (e.g., as a result of diabetes or severe frostbite).

**amputation fetish** see ACROTOMOPHILIA.

**amputee identity disorder** see BODY INTEGRITY IDENTITY DISORDER.

**Amsterdam criteria** the classic criteria for identifying a family with hereditary nonpolyposis colorectal cancer (HNPCC), also known as Lynch syndrome. The criteria are characterized by a 3-2-1 paradigm: To meet the criteria of HNPCC, a family must have at least 3 patients with colon cancer, one of whom is a first-degree relative of the other, in at least 2 generations, with an age of onset before age 50 in at least 1 patient. See also MLH1; MSH2.

**Amsterdam dwarf disease** see CORNELIA DE LANGE SYNDROME.

**amuck** *n.* see AMOK.

**amurakh** *n.* a CULTURE-BOUND SYNDROME observed among Siberian women and characterized by compulsive mimicking of other people's words or behaviors. See also LATAH.

**amusia** *n.* loss of musical ability, usually associated with lesions in one or both of the TEMPORAL LOBES. The inability to reproduce melodies is called **motor** (or **expressive**) **amusia**, and the inability to recognize and appreciate various characteristics of musical tones and sequences is called **sensory** (or **receptive**) **amusia**. The latter is also considered a type of AUDITORY AGNOSIA.

**amygdala** *n.* an almond-shaped structure in the TEMPO-

**RAL LOBE** that is a component of the LIMBIC SYSTEM and considered part of the BASAL GANGLIA. It comprises two main groups of nuclei—the CORTICOMEDIAL GROUP and the BASOLATERAL GROUP—and through widespread connections with other brain areas has numerous viscerosensory and autonomic functions as well as an important role in memory, emotion, perception of threat, and fear learning. Also called **amygdaloid body**; **amygdaloid complex**; **amygdaloid nuclei**. —**amygdaloid** *adj.*

**amygdaloid stimulation** electrical activation of the amygdala, which induces changes in emotional, behavioral, and motivational responses.

**amyl nitrite** an organic nitrite, administered by nasal inhalation, that dilates (widens) arteries by relaxing smooth muscles in arterial walls. The main effects are to dilate the coronary arteries supplying the heart and to reduce blood pressure. Amyl nitrite has been used therapeutically in the treatment of angina pectoris and as an antidote to cyanide poisoning. It is now best known as a recreational drug that is reputed to enhance orgasm and other aspects of the sexual experience; adverse effects can include anxiety, nausea, dizziness, faintness associated with a drop in blood pressure, and impaired oxygen-carrying capacity of the blood.

**amyloid** *n.* a chemically diverse protein that accumulates abnormally between neural and other bodily cells, negatively affecting their functioning. There are various types, each associated with different pathological conditions. For example, BETA-AMYLOID has received considerable attention for its detrimental influence upon memory and cognition in Alzheimer's disease. —**amyloid** *adj.*

**amyloidosis** *n.* a disorder marked by the accumulation of amyloid in the tissues. The cause is believed to be an immune-deficiency disease. Amyloidosis is eventually destructive because it interferes with the normal function of tissues, forming tumors in the respiratory tract, liver, kidney, and other organs. **Primary amyloidosis** occurs in association with multiple myeloma or in the absence of other diseases, whereas **secondary amyloidosis** is associated with a chronic disease, such as tuberculosis.

**amyloid plaque** a clump of BETA-AMYLOID protein surrounded by degenerated dendrites that is particularly associated with symptoms of Alzheimer's disease. Increased concentration of such plaques in the cerebral cortex of the brain is correlated with the severity of dementia. Also called **neuritic plaque**; **senile plaque**.

**amyloid precursor protein (APP)** see BETA-AMYLOID.

**amyotrophic lateral sclerosis (ALS)** a rapidly progressive adult-onset disease involving degeneration of both lower MOTOR NEURONS, responsible for muscle contraction, and upper motor neurons, responsible for MUSCLE SPINDLE sensitivity, and leading to death within 5 years of diagnosis. Symptoms include muscular atrophy and weakness, partial and complete paralysis, speech impairment, and difficulties swallowing or breathing. Amyotrophic lateral sclerosis is often used interchangeably with MOTOR NEURON DISEASE, especially in the United States. Also called **Lou Gehrig's disease**.

**Amytal** *n.* a trade name for AMOBARBITAL.

**Amytal interview** see AMOBARBITAL.

**an-** *prefix* see A-.

**ana-** *prefix* **1.** up (e.g., anabolism). **2.** back (e.g., ANACLISTIC). **3.** again (e.g., ANALOGY).

**anabolic-androgenic steroid** any synthetic form of testosterone used both legally (to treat delayed puberty and loss of lean muscle mass) and illegally (as a PERFORMANCE ENHANCING DRUG). The misuse of anabolic-androgenic steroids is associated with mood swings, violence, paranoia, impaired judgment, liver damage, hypertension, acne, and changes in genitalia (e.g., testicular shrinkage). Also called **anabolic steroid**.

**anabolism** *n.* see METABOLISM. —**anabolic** *adj.*

**anaclisis** *n.* **1.** an extreme dependence on another person for emotional or physical support or both, just as an infant is dependent on the parents for the satisfaction of his or her basic needs. See ANACLISTIC OBJECT CHOICE. **2.** in the classical psychoanalytic theory of Sigmund FREUD, the attachment of the sex drive to the satisfaction of another instinct, such as hunger or defecation. —**anaclitic** *adj.*

**anaclitic depression** depression involving interpersonal dependency. It is characterized by intense fears of abandonment and feelings of helplessness and weakness. See SOCIOTROPY. Compare INTROJECTIVE DEPRESSION.

**anaclitic identification** in the classical psychoanalytic theory of Sigmund FREUD, the first phase of the IDENTIFICATION process, which is rooted in the child's initial dependence on the mother (as well as others) for basic biological and emotional needs. The child acquires the mother's characteristics in the service of becoming his or her own source of reinforcement and comfort. The child also incorporates the mother into his or her superego (see EGO-IDEAL). A weaker version of this is seen with other significant figures in the child's life (e.g., teachers). Compare DEFENSIVE IDENTIFICATION.

**anaclitic object choice** in psychoanalytic theory, the selection of a mate or other LOVE OBJECT who will provide the same type of assistance, comfort, and support that the individual received from the parents during infancy and early childhood: A woman chooses a man resembling her father and a man chooses a woman like his mother. Sigmund FREUD contrasted this with NARCISSISTIC OBJECT CHOICE, which involves selecting a mate who is similar to oneself. According to Freud, these are the only two possible types of object choice. Also called **anaclitic love**. See also ANACLISTIS.

**anaclitic personality** according to some psychoanalytic theories, a line of personality development that is focused on feelings of powerlessness and fear of abandonment with regard to interpersonal relationships and—if the personality fails to develop properly—may result in psychopathological dependency. Compare INTROJECTIVE PERSONALITY.

**anacusis (anakusis)** *n.* total deafness. Also called **anacusia**; **anacusia**.

**anaerobic exercise** strength-based physical activity, such as weight training and sprinting, that occurs in short, intense bursts with limited oxygen intake. The **anaerobic threshold** is the point at which energy use by the body is so great as to require the muscles to begin producing energy in the absence of adequate oxygen. Compare AEROBIC EXERCISE.

**anaesthesia** *n.* see ANESTHESIA.

**Anafranil** *n.* a trade name for CLOMIPRAMINE.

**anaglyph** *n.* a single picture made from two copies of the same image that differ in color and are slightly displaced

from one another in the horizontal plane. When viewed through identically colored glasses, the image appears three dimensional as a result of STEREOPSIS.

**anaglyphoscope** *n.* a device that reverses the areas of light and shadow on an object, altering the perception of depth. Shadow is a powerful DEPTH CUE. Also called **anaglyphoscope**. See DEPTH FROM SHADING.

**anagogic interpretation** the interpretation of dreams and other unconscious material as expressions of ideals or spiritual forces, in contrast to the instinct-based interpretations of classical psychoanalysis. [introduced by Carl JUNG and developed by Austrian psychoanalyst Herbert Silberer (1882–1923)]

**anagram** *n.* a word puzzle with scrambled letters. In studies of problem solving and IMPLICIT MEMORY, a common task involves asking participants to determine the word that corresponds to an anagram (e.g., *rlmoebp*–*problem*).

**anal-aggressive personality** in the classical psychoanalytic theory of Sigmund FREUD, a personality type characterized by obstinacy, obstructionism, defiance, and passive resistance. Such traits are held to stem from the ANAL STAGE, in which the child asserted himself or herself by withholding feces. Also called **anal-aggressive character**. See also ANAL PERSONALITY; ANAL SADISM; ANAL-SADISTIC PHASE.

**anal character** see ANAL PERSONALITY.

**analeptic** *n.* any stimulant other than amphetamines that produces subjective effects similar to those caused by amphetamine use. These effects may include alertness, elevated mood, increased energy, decreased appetite, irritability, and insomnia. The group includes DIETHYLPROPION, METHYLPHENIDATE, and PEMOLINE. See also APPETITE SUPPRESSANT.

**anal eroticism** in psychoanalytic theory, pleasurable sensations associated with expulsion, retention, or observation of the feces or through stimulation of the anus. These sensations first arise in the ANAL STAGE of psychosexual development, between the ages of 1 and 3. Also called **anal erotism**. See also ANAL PERSONALITY; COPROPHILIA.

**anal-expulsive phase** in the classical psychoanalytic theory of Sigmund FREUD, a phase of the ANAL STAGE in which pleasure is obtained by expelling feces and the sadistic instinct is linked to destruction of the OBJECT. According to the theory, fixation at this phase results in an adult ANAL PERSONALITY. See also ANAL-SADISTIC PHASE. Compare ANAL-RETENTIVE PHASE.

**analgesia** *n.* absence of or reduction in the sensation of pain. Compare ALGESIA. —**analgesic** *adj.*

**analgesic** *n.* a drug or other agent that alleviates pain. Analgesic drugs usually are classed as opioid (narcotic) or nonopioid (nonnarcotic), depending on their chemical composition and potential for physical dependence. OPIOID ANALGESICS are generally the most effective in relieving pain. The most widely used of the less potent nonopioid analgesics are the NSAIDS (nonsteroidal anti-inflammatory drugs)—most notably ASPIRIN—and ACETAMINOPHEN.

**anal intercourse** a form of sexual activity in which pleasure is achieved through the insertion of the penis into the anus. Also called **coitus analis**; **coitus in ano**. See also SODOMY.

**anal masturbation** a form of anal eroticism in which

sexual excitement is achieved through manual or mechanical self-stimulation of the anus.

**analog** *adj.* relating to the representation of information by means of a continuously varying physical quantity, such as voltage, rather than by means of discrete digits. Compare DIGITAL.

**analog computer** a computer that solves problems, usually mathematical, by using a physical analog of the mathematical relationships expressed in the computer's program. These analogs of computational variables are usually an electrical voltage or the rotation of a shaft. See DIGITAL COMPUTER.

**analogical thinking** thinking characterized by extrapolations from the familiar to the unfamiliar, rather than by the use of formal logic or consecutive reasoning. It is particularly important in problem solving and learning, in which known similarities between aspects of certain entities are used to make assumptions about other aspects or entities. Also called **analogical reasoning**.

**analogies test** a test of the participant's ability to comprehend the relationship between two items and then extend that relationship to a different situation: For example, paintbrush is to paint as pen is to \_\_\_\_.

**analogue** *n.* **1.** something that is like, or similar in some respect to, something else. **2.** an organ of one species that has a similar function to an organ of another species, although they have different structures and PHYLOGENY. The wings of bats and flies are examples. See ANALOGY.

**analogue observation** a response recorded from a participant in an ANALOGUE STUDY designed to induce a particular behavior in a controlled environment, such as a laboratory or clinic. Compare NATURALISTIC OBSERVATION; SELF-MONITORING OBSERVATION.

**analogue study** an EXPERIMENTAL DESIGN in which the procedures or participants used are similar but not identical to the situation of interest. For example, if researchers are interested in the effects of therapist gender on client perceptions of therapist trustworthiness, they may use undergraduate students who are not clients and provide simulated counseling dialogues that are typed and identified as offered by a male or female therapist. The results of such studies are assumed to offer a high degree of experimental control. Also called **analogue model**.

**analogy** *n.* **1.** a similarity between two entities in certain limited respects. In biology, it refers to similarity of function in structures with different evolutionary origins, such as wings in bats and butterflies. See also HOMOLOGY; HOMOPLASY. **2.** a method of argument that relies on an inference that a similarity between two or more entities in some attributes justifies a probable assumption that they will be similar in other attributes (see FALSE ANALOGY). Analogy is often used in arguments about the existence of God and of other minds. **3.** in linguistics, the process by which the regular patterns of INFLECTION, word formation, and the like in a language are extended to novel or anomalous instances. This can be observed in historical language change as well as in LANGUAGE ACQUISITION. A notable form of analogy occurs when children regularize irregular grammatical forms, such as applying the *-ed* past-tense ending to irregular verbs, creating novel forms such as *goed*. —**analogical** *adj.* —**analogous** *adj.*

**analogy of the cave** a metaphor used by PLATO to illustrate his contention that humans are only dimly aware of



the true nature of things. Plato likened human life to the state of being imprisoned in a cave, with the world outside casting shadows on the cave walls: He contended that these shadows are all one actually experiences of the real world, which is timeless and ideal. See PLATONIC IDEALISM; THEORY OF FORMS. See also TRANSCENDENTALISM.

**anal personality** in classical psychoanalytic theory, a pattern of personality traits believed to stem from the ANAL STAGE of psychosexual development, when defecation is a primary source of pleasure. Special satisfaction from retention of the feces will result in an adult **anal-retentive personality**, marked by frugality, obstinacy, and orderliness, whereas fixation on expelling feces will produce an aggressive and disorderly **anal-expulsive personality**. Also called **anal character**. See also ANAL-AGGRESSIVE PERSONALITY; HOARDING ORIENTATION.

**anal phase** see ANAL STAGE.

**anal-retentive phase** in the classical psychoanalytic theory of Sigmund FREUD, a phase of the ANAL STAGE in which pleasure is obtained by retaining feces, thereby defying the parent, and in which the sadistic instinct is linked to possession and control of the OBJECT. Fixation at this phase results in an adult ANAL PERSONALITY. See also ANAL-SADISTIC PHASE. Compare ANAL-EXPULSIVE PHASE.

**anal sadism** in the classical psychoanalytic theory of Sigmund FREUD, the expression of aggressive impulses in the ANAL STAGE of psychosexual development, involving both the destruction of the OBJECT and its possession and control. It is manifested in the adult in the form of an ANAL-AGGRESSIVE PERSONALITY.

**anal-sadistic phase** in the classical psychoanalytic theory of Sigmund FREUD, a phase of the ANAL STAGE in which the child manifests aggressive and destructive tendencies. One expression of these tendencies is withholding the feces in defiance of parental urging. See ANAL-AGGRESSIVE PERSONALITY. See also ANAL-EXPULSIVE PHASE; ANAL-RETENTIVE PHASE.

**anal stage** in the classical psychoanalytic theory of Sigmund FREUD, the second stage of PSYCHOSEXUAL DEVELOPMENT, typically occurring during the 2nd year of life, in which the child's interest and sexual pleasure are focused on the expulsion and retention of feces and the sadistic instinct is linked to the desire to both possess and destroy the OBJECT. Fixation during this stage results in an ANAL PERSONALITY. Also called **anal phase**. See also ANAL-EXPULSIVE PHASE; ANAL-RETENTIVE PHASE; ANAL-SADISTIC PHASE.

**analysand** *n.* in psychoanalysis, a patient who is undergoing analysis.

**analysis** *n.* 1. the division of any entity into its component parts, typically for the purpose of investigation or study. 2. see PSYCHOANALYSIS. —**analytic** or **analytical** *adj.*

**analysis by synthesis** any theory of information processing stating that both BOTTOM-UP PROCESSES and TOP-DOWN PROCESSES interact in the recognition and interpretation of sensory input. According to theories of this type, which are associated particularly with speech perception and language processing, the person initially assesses (analyzes) the physical attributes and constituent elements of a stimulus (data-driven processing) and then, guided by contextual information and knowledge acquired from previous experience or learning (conceptually driven processing), determines the significant information from

this preliminary analysis of the stimulus and assembles (synthesizes) it into an internal representation or interpretation of what the stimulus might be. This internal representation is compared to the stimulus input: If the two match, then the stimulus is recognized; if not, alternative representations are assembled for comparison until a match is found. In other words, one analyzes the original stimulus input, hypothesizes what it is, determines what the input would be like if the hypothesis were correct, and then assesses whether the input is actually like that.

**analysis of covariance (ANCOVA)** an extension of the ANALYSIS OF VARIANCE that adjusts for the influence of a COVARIATE in testing whether there is a significant difference between means of two or more groups on one or more INDEPENDENT VARIABLES. In other words, it is a statistical method of studying the responses of different groups to a DEPENDENT VARIABLE that adjusts for the influence of a variable that is not being investigated but nonetheless is related to the dependent variable and thus may influence the study results. For example, suppose a researcher analyzes whether there is a difference in learning among three types of instruction—in-class lecture, online lecture, and textbook only. He or she divides a random selection of adult students into three groups, implements the different instruction types, and administers the same test to all participants to determine how much they learned. If the researcher knows each participant's educational background, he or she could use an analysis of covariance to adjust the treatment effect (test score) according to educational level, which would reduce the observed variation between the three groups caused by variation in education levels rather than by the instruction itself.

**analysis of resistance** a basic procedure in psychoanalysis in which the patient's tendency to maintain the REPRESSION of unconscious impulses and experiences that interfere with FREE ASSOCIATION is subjected to analytic scrutiny. The process of explaining RESISTANCES is believed to be a major contribution to insight and positive change.

**analysis of transference** in psychoanalysis, the interpretation of a patient's early relationships and experiences as they are reflected and expressed in his or her present relationship to the analyst. Also called **transference analysis**. See TRANSFERENCE.

**analysis of variance (ANOVA)** a statistical method of studying the variation in responses of two or more groups on a DEPENDENT VARIABLE. ANOVAs test for significant differences among the mean response values of the groups and can be used to isolate both the joint INTERACTION EFFECTS and the separate MAIN EFFECTS of INDEPENDENT VARIABLES upon the dependent variable.

**analysis unit** see UNIT OF ANALYSIS.

**analyst** *n.* generally, one who practices psychoanalysis. This is usually a PSYCHOANALYST in the tradition of Sigmund FREUD; however, the term is also applied to therapists adhering to the methods of various neoanalytic theorists.

**analytical intelligence** in the TRIARCHIC THEORY OF INTELLIGENCE, the skills measured by conventional tests of intelligence, such as analysis, comparison, evaluation, critique, and judgment. Compare CREATIVE INTELLIGENCE; PRACTICAL INTELLIGENCE.

**analytical psychotherapy 1.** a method of psychotherapy using psychoanalytic principles but with less depth of analysis, more active intervention on the part of the thera-

pist, and less frequent sessions than are required for a true psychoanalysis. See PSYCHODYNAMIC PSYCHOTHERAPY. **2.** historically, an alternative method to psychoanalysis proposed by Viennese psychoanalyst Wilhelm Stekel (1868–1940).

**analytic approach** any method based on breaking down a complex process into its parts so as to better understand the whole. For example, a researcher studying cognition in preschool children might identify such component skills as problem solving, reasoning, judgment, imagination, and memory; examine each item in turn; and then determine how they interact. Compare SYNTHETIC APPROACH.

**analytic couch** see COUCH.

**analytic group psychotherapy** one of two main types of GROUP THERAPY defined by Russian-born U.S. psychotherapist Samuel Richard Slavson (1890–1981), the other being ACTIVITY GROUP THERAPY. Based on TRANSFERENCE, INTERPRETATION, and other core principles of psychoanalytic theory—notably catharsis, insight, reality testing, and sublimation—analytic group psychotherapy was formally defined in 1950. It is divided into three subtypes: (a) PLAY GROUP PSYCHOTHERAPY for preschool children; (b) ACTIVITY-INTERVIEW GROUP PSYCHOTHERAPY for schoolchildren 6 to 12 years old; and (c) INTERVIEW GROUP PSYCHOTHERAPY for adolescents and adults. Slavson believed group therapy to be fundamentally similar to individual treatment and a useful tool for producing personality changes without radically changing a person's intrapsychic structure.

**analytic induction** a QUALITATIVE RESEARCH strategy for developing and testing a theory in which the researcher tentatively defines a phenomenon, creates a hypothesis to explain it, and examines a single specific occurrence of the phenomenon in order to confirm or refute the hypothesis. If the hypothesis is confirmed, additional cases are examined to confirm the results until a sufficient degree of certainty about the correctness of the hypothesis is obtained and the study may be concluded. If the hypothesis is not confirmed, the phenomenon is redefined or the hypothesis revised so as to accommodate the findings.

**analytic philosophy** an approach to philosophy developed by Austrian philosopher Ludwig Wittgenstein (1889–1951) and British philosopher Bertrand Russell (1872–1970) at the beginning of the 20th century. According to this view, the truth or falsity of complex statements could be determined by analyzing them into simple, elemental, logical propositions. The main task of philosophy is therefore the clarification of thought and language rather than the creation of speculative systems or theories. This approach influenced LOGICAL POSITIVISM and remained dominant in Britain and the United States during the 20th century. Compare CONTINENTAL PHILOSOPHY.

**analytic psychology** the system of psychoanalysis proposed by Carl JUNG, in which the psyche is interpreted primarily in terms of philosophical values, primordial images and symbols, and a drive for self-fulfillment. Jung's basic concepts are (a) the EGO, which maintains a balance between conscious and unconscious activities and gradually develops a unique self through INDIVIDUATION; (b) the PERSONAL UNCONSCIOUS, made up of memories, thoughts, and feelings based on personal experience; (c) the COLLECTIVE UNCONSCIOUS, made up of ancestral images, or ARCHE-TYPES, that constitute the inherited foundation of an indi-

vidual's intellectual life and personality; and (d) dynamic polarities, or tension systems, which derive their psychic energy from the LIBIDO and influence the development and expression of the ego: conscious versus unconscious values, introversion versus extraversion, sublimation versus repression, rational versus irrational. The object of Jungian therapy is to achieve a creative balance among all these forces. Also called **analytical psychology**.

**analytic rules** the three rules laid down by Sigmund FREUD for conducting psychoanalytic therapy: the BASIC RULE of free association, which is the instruction to say everything that comes to mind and is assumed to give free reign to the unconscious to bring repressed impulses and experiences to the surface; the RULE OF ABSTINENCE, which discourages gratifications that might drain energy that could be utilized in the therapeutic process; and the rule against ACTING OUT feelings and events instead of talking them out.

**analytic third** in OBJECT RELATIONS THEORY, the intersubjective field that an analyst and patient jointly create with each other to develop a new, shared reality that includes the thoughts, fantasies, and emotions of both people. [proposed in 1994 by U.S. psychoanalyst Thomas Ogden]

**analyzer** *n.* a theoretical part or function of the central nervous system responsible for making evaluations of stimuli within particular senses. Each sense (e.g., vision) has a series of analyzers, and each analyzer is responsive to a particular stimulus dimension (e.g., color, length, orientation, or brightness). The concept was introduced by Ivan PAVLOV.

**anamnesis** *n.* a patient's account of his or her developmental, family, and medical history prior to the onset of a mental or physical disorder. Compare CATAMNESIS. [first suggested by Adolf MEYER as an aid to diagnosis and exploration of possible causes of a patient's disorder]

**anancastic personality (anankastic personality)** an older name for OBSESSIVE-COMPULSIVE PERSONALITY DISORDER.

**anandamide** *n.* see ENDOGENOUS CANNABINOID.

**anandria** *n.* the absence of masculinity in a male.

**anaphia** *n.* the absence or loss of ability to perceive tactile sensations or stimuli. Also called **anhaphia**.

**anaphora** *n.* in linguistics, the use of a word (often a PRONOUN) to refer back to a word used earlier, usually to avoid repetition. In *You take the high road, I'll take the low one*, the use of *one* to mean *road* is an example of anaphora. Ability to form and process such constructions has been a major preoccupation of GENERATIVE GRAMMAR and PSYCHOLINGUISTICS. See also ANTECEDENT. —**anaphoric** *adj.*

**anaphrodisiac** *n.* a drug or other agent that functions as a sexual sedative to reduce or repress sexual desire. Among substances claimed to have this effect are potassium bromide, heroin, and camphor. Anaphrodisiacs also may be a cause of SEXUAL ANESTHESIA. See also CHEMICAL CASTRATION.

**anaphylaxis** *n.* hypersensitivity to the introduction of a substance (e.g., a food item such as peanuts or a drug such as penicillin) into body tissues, resulting from previous exposure to it. Symptoms, such as breathing difficulties and wheezing, are sudden, and **anaphylactic shock**—pulmo-

nary edema, heart arrhythmia, shock, loss of consciousness, and potential respiratory or cardiac arrest—may occur if untreated. —**anaphylactic** *adj.*

**anaplastic astrocytoma** see GLIOMA.

**anarthria** *n.* a MOTOR SPEECH DISORDER characterized by an inability to speak because of damage to or disruption of the central nervous system. Individuals with anarthria cannot control the LARYNX and other muscles involved in producing speech sounds; other language functions generally are unaffected. The condition is distinct from DYSARTHRIA, which is a difficulty in speaking coherently. —**anarthric** *adj.*

**anastomosis** *n.* (*pl.* **anastomoses**) **1.** the surgical connection of two normally separate structures. **2.** an alternate pathway formed by branching of a main circuit, as found in nerves, blood vessels, and lymphatic vessels. The brain is served by arterial anastomoses that help ensure a continuing blood flow in the event of one pathway being blocked by a blood clot or rupture of a blood vessel.

**anatomical age** a measure of the stage of physical development of an individual, based on the condition of certain skeletal features as compared with the normal state of the bones for a specified CHRONOLOGICAL AGE. Also called **physical age**. See also MENTAL AGE.

**anatomically detailed doll** a doll with anatomically correct genitalia that is used as an assessment tool in the diagnosis of sexual abuse in children. There are currently no uniform standards or normative data for conducting interviews with such dolls, and their clinical reliability with very young children is questionable. Also called **anatomically correct doll**.

**ancestor worship** a practice found in various cultures, especially in Asia and Africa, that involves the veneration of departed kin and the summoning of ancestral spirits through rituals and prayer.

**ancestral trait** an evolutionary trait that is homologous within groups of organisms (see HOMOLOGY) that are all descended from a common ancestor in which the trait first evolved. Because an ancestral trait may occur across many species—for example, opposable thumbs in marmosets, ring-tailed lemurs, and gorillas—it cannot be used to further elucidate their genetic relationships.

**anchor** *n.* a reference used when making a series of subjective judgments. For example, in an experiment in which participants gauge distances between objects, the experimenter introduces an anchor by informing the participants that the distance between two of the stimulus objects is a given value. That value then functions as a reference point for participants in their subsequent judgments. Similarly, the options listed for a multiple-choice test item provide an anchor for the test taker to use when answering.

**anchoring** *n.* **1.** in ADAPTATION LEVEL theory, the assignment of set points (ANCHORS) for judgment scales. According to this theory, all judgments are relative to an implicit scale of comparison; for example, poverty is evaluated differently when people are given specific examples of either extreme or moderate poverty. **2.** the process in which one or more items in a list being learned serve as anchors with which the other items are associated. For instance, the first and last items in a list of words may serve as anchors, cuing the words in between.

**anchoring bias** the tendency, in forming perceptions or making quantitative judgments under conditions of uncer-

tainty, to give excessive weight to the starting value (or ANCHOR), based on the first received information or one's initial judgment, and not to modify this anchor sufficiently in light of later information. For example, estimates of the product of  $9 \times 8 \times 7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1$  tend to be higher than estimates of the product of  $1 \times 2 \times 3 \times 4 \times 5 \times 6 \times 7 \times 8 \times 9$ . Also called **anchoring-and-adjustment heuristic**; **anchoring effect**. See also ATMOSPHERE EFFECT.

**anchor test** a set of test items used as a reference point in comparing ALTERNATE FORMS of a test. One alternate form is administered to one group of participants, another is administered to a different group, and the items comprising the anchor test are administered to both groups. Scores on each alternate form are then compared with scores on the anchor test.

**ancillary** *adj.* supporting or supplemental but not necessarily critical to some function or event.

**ANCOVA** acronym for ANALYSIS OF COVARIANCE.

**Andersen's disease** a familial disorder marked by cirrhosis of the liver with involvement of the heart, kidneys, muscles, and nervous system. The disease is due to a deficit of an enzyme needed to convert glucose carried from the digestive tract into glycogen for storage by the liver. [Dorothy Hansine Andersen (1901–1963), U.S. pediatrician]

**Andersen's syndrome** a disorder consisting of three pathological conditions: cystic fibrosis of the pancreas, celiac disease, and vitamin A deficiency. The syndrome may be marked by symptoms of depression, muscle wasting, and hypotonia (weak, floppy muscles). Children may have difficulty in walking or standing. Also called **Andersen's triad**. [Dorothy Hansine Andersen]

**Andrade's syndrome** a form of AMYLOIDOSIS characterized by flaccid paralysis, sensory disorders, impotence, and premature menopause. Also called **Corino de Andrade's paramyloidosis**; **familial Portuguese polyneuropathic amyloidosis**; **Wohlwill–Corino Andrade syndrome**. [Corino de Andrade, Portuguese physician; Joachim Friedrich Wohlwill (1881–1958), German physician]

**andro-** (**andr-**) *combining form* male.

**androcentric** *adj.* denoting a male perspective, sometimes one that marginalizes or excludes women and their experience. See also PHALLOCENTRIC. —**androcentrism** *n.*

**androgen** *n.* any of a class of steroid hormones that act as the principal male SEX HORMONES, the major one being TESTOSTERONE. Androgens are produced mainly by the testes and influence the development of masculine SEX CHARACTERISTICS. They are also secreted in small quantities by the cortex of the ADRENAL GLAND and can be produced synthetically. —**androgenic** *adj.*

**androgen antagonist** *n.* see ANTIANDROGEN.

**androgen-insensitivity syndrome (AIS)** an inherited X-linked (see SEX-LINKED) recessive condition affecting genital development and caused by varying degrees of insensitivity to ANDROGENS. There are three forms: **complete AIS**, in which the insensitivity is total, resulting in external genitalia that are female; **partial AIS**, in which some sensitivity to the hormones results in external genitalia that fall anywhere within the range of male to female; and **mild AIS**, in which the external sex characteristics are male but there may be some breast growth at puberty. In all three

forms, the internal organs are male (i.e., testes). Also called **feminizing testes syndrome**; **male pseudohermaphroditism**; **testicular feminization syndrome**. See also INTERSEX; PSEUDOHERMAPHRODITISM.

**androgenization** *n.* the masculinizing effect of androgens, especially TESTOSTERONE, on body tissues and organs sensitive to them, as in the development of male sex characteristics.

**androgynophilia** *n.* **1.** sexual attraction to both males and females. See BISEXUALITY. **2.** sexual attraction to someone who is androgynous in appearance.

**androgynous personality** a personality style in which an individual displays both stereotypical masculine and stereotypical feminine psychological characteristics (e.g., both assertiveness and sensitivity).

**androgyny** *n.* **1.** the presence of male and female characteristics in one individual. **2.** the state of being neither masculine nor feminine in appearance, as in dress. See also GYNANDROMORPH; HERMAPHRODITISM. —**androgynous** *n.* —**androgynous** *adj.*

**android** **1.** *adj.* possessing human features. **2.** *n.* an automaton resembling a human being. The term was popularized by science fiction writers in the mid- and late 20th century. Also called **humanoid**.

**andropause** *n.* see MALE CLIMACTERIC.

**androstenedione** *n.* a steroid hormone secreted by the adrenal cortex (the outer layer of the ADRENAL GLAND) and the gonads as a precursor of the male and female sex hormones, particularly testosterone and estrone.

**androsterone** *n.* a steroid hormone, secreted by the adrenal cortex and testis, with weak androgenic effects.

**and rule** see MULTIPLICATION RULE.

**anecdotal method** an investigational technique in which informal verbal reports of incidents casually observed are accepted as useful information. The anecdotal method is scientifically inadequate but can offer clues as to areas of investigation that warrant more systematic, controlled research.

**anecdotal record** in education, a factual, written record containing spontaneous, succinct, cumulative descriptions of a student's behavior. Such observations are usually considered significant because they highlight a given aspect of the student's personality and may prove useful in future evaluations.

**anechoic chamber** an enclosure designed to eliminate sound reverberations and echoes. This enclosure is usually located within or combined with a SOUND-ATTENUATING CHAMBER.

**Anectine** *n.* a trade name for SUCCINYLCHOLINE.

**anencephaly** *n.* congenital absence of the cranial vault (the bones forming the rear of the skull), with cerebral hemispheres completely missing or reduced to small masses. Infants born with anencephaly are usually blind, deaf, unconscious, and unable to feel pain. Anencephaly is an example of a NEURAL TUBE defect. —**anencephalic** *adj.*

**anergia** *n.* **1.** absence of energy. **2.** a state of passivity. Also called **anergy**. —**anergic** *adj.*

**anesthesia** (**anaesthesia**) *n.* the loss of sensitivity to stimuli, either in a particular area (local) or throughout the body and accompanied by loss of consciousness (gen-

eral). It may be produced intentionally, for example, via the administration of drugs (called **anesthetics**) or the use of techniques such as ACUPUNCTURE or hypnotic suggestion, or it may occur spontaneously as a result of injury or disease. —**anesthetic** *adj.*

**anethopath** *n.* a person lacking ethical or moral inhibitions. See also ANTISOCIAL PERSONALITY DISORDER. —**anethopathy** *n.*

**aneuploidy** *n.* the condition in which a cell or organism has fewer or more than the normal number of chromosomes, for example (in humans), 45 or 49 instead of the normal 46. Aneuploidy is often associated with neurological or cognitive defects. See AUTOSOME. —**aneuploid** *adj.*, *n.*

**aneurysm** (**aneurism**) *n.* an enlargement (swelling) at some point in an artery caused by the pressure of blood on weakened tissues, often at junctions where arteries split off from one another. Aneurysms can rupture (burst) or dissect (split) the artery wall, causing internal bleeding that is often fatal. They are a common cause of HEMORRHAGIC STROKE. —**aneurysmal** *adj.*

**angakok** *n.* an Inuit name for a SHAMAN or spiritual guide. The angakok is a central figure of Inuit spiritual life; present at major ceremonies, he foretells weather and the movement of game animals, cures illness, retrieves lost or stolen souls, and converses with other spiritual beings.

**angel dust** a street name for crystals of PCP (phencyclidine). The crystals are sometimes sprinkled onto oregano, parsley, or alfalfa and sold as marijuana.

**Angelman syndrome** a congenital disorder caused by a genetic abnormality on chromosome 15 and characterized by abnormalities or impairments in neurological, motor, and cognitive functioning, including severe learning disabilities, absence of speech, and a stiff, jerky gait and movements (see ATAXIA). Individuals with Angelman syndrome have happy dispositions and a propensity for paroxysms of inappropriate laughter. Craniofacial abnormalities, including a small or unusually flattened head, a large mouth, and a protruding jaw, are also common. The condition was formerly called **happy-puppet syndrome**. [Harry Angelman (1915–1996), British pediatrician]

**anger** *n.* an emotion characterized by tension and hostility arising from frustration, real or imagined injury by another, or perceived injustice. It can manifest itself in behaviors designed to remove the object of the anger (e.g., determined action) or behaviors designed merely to express the emotion (e.g., swearing). Anger is distinct from, but a significant activator of, AGGRESSION, which is behavior intended to harm someone or something. Despite their mutually influential relationship, anger is neither necessary nor sufficient for aggression to occur.

**anger control therapy** a treatment that makes use of therapist-guided progressive exposure to anger-provoking cues in conjunction with therapist modeling, client rehearsal, assertiveness training, and other forms of coping skills training. Practiced in both individual and group settings, the intervention is used with clients who have general difficulty with anger (e.g., intensity, frequency, or mode of expression) or with clients who have specific disorders.

**anger management** techniques used by individuals—sometimes in counseling or therapy—to control their inappropriate reactions to anger-provoking stimuli and to express their feelings of anger in appropriate ways that are respectful of others. Such techniques include using re-

laxation methods (breathing deeply, repeating a word or phrase, visualizing a relaxing experience) to reduce physiological responses to anger, replacing exaggerated or overly dramatic thoughts with more rational ones (see COGNITIVE RESTRUCTURING), communicating more calmly and thoughtfully about one's anger, and removing oneself from situations or circumstances that provoke anger or avoiding them altogether.

**anger stage** the second of the five STAGES OF GRIEF described by Elisabeth KÜBLER-ROSS. It is characterized by anger, resentment, or even rage at one's own (or at an important other's) impending or actual death, other great loss, or trauma.

**angio-** (**angi-**) *combining form* blood vessels or lymph vessels.

**angioedema** *n.* a disorder marked by recurrent episodes of noninflammatory swelling of certain body tissues, particularly the skin, mucous membranes, viscera, and central nervous system. The disorder may begin suddenly and last for hours or days, sometimes causing death. Attacks may be triggered by food or drug allergies, insect stings or bites, or viral infection, but in most cases the cause is never known. A hereditary form may be associated with emotional stress. Also called **angioneurotic edema**; **Quincke's disease**; **Quincke's edema**.

**angiography** *n.* the visualization of blood vessels by radiological techniques, used as an aid in diagnosing abnormalities or discovering blockages in areas of the circulatory system. For example, it can identify blood clots, tumors, aneurysms, and the degree of narrowing of the coronary arteries, which supply the heart. A dye opaque to X-rays is injected into a vessel and any disruption of blood flow is revealed as a contrasting pattern. When the imaging is of arteries, it is also called **arteriography**. The image produced is called an **angiogram** (or **arteriogram**). See also CEREBRAL ANGIOGRAPHY; DIGITAL SUBTRACTION ANGIOGRAPHY.

**angioma** *n.* a tumor of the vascular system: an abnormal mass of blood vessels or lymph vessels.

**angioscotoma** *n.* a type of VISUAL FIELD DEFECT caused by shadows of blood vessels on the retina.

**angiotensin** *n.* one of a family of peptides, including angiotensins I, II, and III, that are produced by the enzymatic action of RENIN on a precursor protein (**angiotensinogen**) in the bloodstream. Their effects include narrowing of blood vessels (VASOCONSTRICTION), increased blood pressure, thirst, and stimulation of ALDOSTERONE release from the adrenal glands. See also RENIN-ANGIOTENSIN SYSTEM.

**angst** *n.* **1.** fear or anxiety (German). **2.** in EXISTENTIALISM, a state of anguish or despair in which a person recognizes the fundamental uncertainty of existence and understands the significance of conscious choice and personal responsibility.

**angular gyrus** a ridge along the lower surface of the PARIETAL LOBE of the brain, formed by a junction of the superior and middle temporal gyri. This region has been proposed as the key area of reading and writing function. Lesions are associated with ALEXIA and AGRAPHIA, and structural abnormalities with DYSLEXIA.

**angular transformation** see ARC SINE TRANSFORMATION.

**anhaphia** *n.* see ANAPHIA.

**anhedonia** *n.* the inability to enjoy experiences or activi-

ties that normally would be pleasurable. It is one of two defining symptoms of a MAJOR DEPRESSIVE EPISODE (the other being a persistent depressed mood), but it is also seen in other disorders, including schizophrenia. [first defined in 1897 by Théodule RIBOT] —**anhedonic** *adj.*

**anhypnia** *n.* see INSOMNIA.

**aniconia** *n.* an absence of mental imagery.

**anilide** *n.* any of a group of aniline derivatives developed as analgesics and antipyretics. The parent compound, **acetanilide**, was originally introduced in 1886 as an antipyretic, but its toxicity led to its disuse and the development of a number of derivatives, of which ACETAMINOPHEN is the only member in current use.

**anilingus** *n.* the practice of stimulating the anus with the mouth or tongue as a form of sexual activity.

**anima** *n.* **1.** in the earlier writings of Carl JUNG, a person's innermost being, which is in closest contact with the UNCONSCIOUS and is contrasted with the PERSONA, or the externally directed part of a person. **2.** in Jung's later writings, (a) an ARCHETYPE that represents universal feminine characteristics or (b) the unconscious feminine aspect of the male psyche. Compare ANIMUS.

**animal** **1.** *n.* a living organism generally distinguished from plants by having motility and mechanisms for rapid response to outside events. **2.** *n.* any such organism other than humans. **3.** *adj.* beastlike, or characteristic of lower animals: lacking human faculties and sensitivities.

**animal aggression** see AGGRESSION.

**animal-assisted therapy** the therapeutic use of pets to enhance individuals' physical, social, emotional, or cognitive functioning. Animal-assisted therapy may be used, for example, to help people receive and give affection, especially in developing communication and social skills. It may be most effective for people who have suffered losses or separation from loved ones. Also called **pet-assisted therapy**; **pet therapy**.

**animal behavior** the scientific study of the behavior of animals, typically nonhuman animals. It includes the fields of ETHOLOGY, COMPARATIVE PSYCHOLOGY, and BEHAVIORAL ECOLOGY. Areas of study include AGGRESSION, COURTSHIP, GROOMING, MATE SELECTION, PLAY, FORAGING, and PARENTAL BEHAVIOR, among others.

**animal care and use** the treatment of nonhuman animals used in research and experimentation. Various regulations, standards, and principles have been developed to protect the well-being of such animals and ensure that they are treated in a humane and ethical manner. In the United States, examples include the Animal Welfare Act, passed by the U.S. Congress in 1966 and subsequently amended several times, most recently in 2008; and the American Psychological Association's "Guidelines for Ethical Conduct in the Care and Use of Nonhuman Animals in Research," developed in 1968 by the Committee on Animal Research and Ethics (CARE) and revised in 2012. See INSTITUTIONAL ANIMAL CARE AND USE COMMITTEE.

**animal cognition** the processes that are believed to be used by nonhuman animals in solving environmental and social problems but that cannot be observed directly. They include problem-solving abilities that appear not to depend on rote memory or trial-and-error learning, suggesting that some animals may be able to reason about potential solutions and therefore to solve problems with apparent

spontaneity. See also ANIMAL INTELLIGENCE; COMPARATIVE COGNITION; SOCIAL COGNITION; THEORY OF MIND.

**animal communication** the study of how nonhuman animals communicate with each other either to provide HONEST SIGNALS or to manage or manipulate the behavior of others. Assessment of individuals based on their behavior or signals may be a major function of animal communication.

**animal cooperation** behavior in which two or more nonhuman animals act together in a way that leads to mutual benefit. Examples include the cooperative nest building, food finding, and care of young in SOCIAL INSECTS, the MOBBING behavior of some animals toward a predator, and the production of specific signals to indicate sources of food or shelter to others. It is not known whether cases of animal cooperation require that the animals understand the need to cooperate (see COOPERATION).

**animal courtship** see COURTSHIP.

**animal defensive behavior** behavior used by a nonhuman animal to avoid being harmed by another. This might involve **defensive aggression** against a potential predator or against a member of its own species, from its own group or an outside group, or ANIMAL ESCAPE BEHAVIOR to avoid the source of harm. It might also involve strategies to become inconspicuous, through CAMOUFLAGE or inactivity, or highly conspicuous, as in the noise that a rattlesnake makes to indicate potential danger if provoked or attacked.

**animal dominance** the relationship between nonhuman animals that allows some individuals to have greater access to resources (e.g., food, shelter, mates) than others in the group. Dominance ranks are thought to be linear in some cases, with a clear ordering from most to least dominant (see PECKING ORDER), but may also be dependent (i.e., based on kin or age relationships) or governed by COALITIONS in which subordinate individuals acting together can outrank dominant ones. Although dominance is usually thought to be based on aggression, stable dominance relationships may be maintained through the use of ANIMAL VOCALIZATIONS or VISUAL COMMUNICATION, with minimal aggression.

**animal emotionality** emotional reactions in nonhuman animals, often measured by EXPLORATORY BEHAVIOR in an open field or by physiological correlates, such as heart rate or defecation rate. Individuals showing less exploratory behavior or greater physiological arousal are said to exhibit higher emotional reactivity.

**animal escape behavior** the attempt of a nonhuman animal to escape an AVERSIVE STIMULUS, such as pain, a distasteful food, a predator, or an attacking or threatening member of the same species. This is one form of ANIMAL DEFENSIVE BEHAVIOR. See also ESCAPE BEHAVIOR.

**animal-human comparison** the use of information about nonhuman ANIMAL BEHAVIOR to make generalizations about human behavior. Studies of animals are often specifically designed to provide explicit models for some aspect of human behavior, but studies of the diversity of behavior across different animal species can also be used to understand the origins of certain types of human behavior and to suggest alternative solutions to human problems. See COMPARATIVE PSYCHOLOGY.

**animal hypnosis** a state of motor nonresponsiveness in nonhuman animals, produced by stroking, salient stimuli,

or physical restraint. It is called “hypnosis” because of a claimed resemblance to human hypnosis and trance.

**animal intelligence** the various abilities of nonhuman animals to solve problems in their environment through mechanisms of learning and ANIMAL COGNITION. Psychologists formerly thought that animal intelligence was best measured relative to human skills, with a linear progression of intelligence from simple to complex organisms. Research has revealed, however, that intelligence can take many forms and is best understood in the context of the particular problems that each species faces. For example, **swarm intelligence** is the cumulative problem-solving ability of a group of animals of one species, such as an ant colony or a flock of birds. See also COMPARATIVE COGNITION.

**animal learning** a field of psychology that studies the learning ability of nonhuman animals.

**animal magnetism** a hypothetical physical force that allegedly can have a curative effect when focused on ailing parts of the body, often through the use of a magnetized wand, magnetized rods, or a magnetized bath (see BAQUET). This method was proposed in 1779 and popularized by Franz Anton MESMER, who claimed some treatment success with it. In the 1840s, James BRAID investigated the curative effects of animal magnetism, concluding that it worked not through the application of magnets to ailing parts of the body but through the practitioner's induction of a sleeplike state in patients and through the interplay of patient belief and healer suggestion to elicit a positive result. Braid revised the treatment under the term *hypnotism* (see HYPNOSIS). Both hypnosis and its forerunner, animal magnetism, are also sometimes called MESMERISM.

**animal model** an animal whose characteristics or conditions are similar to those of humans, thus making it suitable for studying human behavior, processes, disorders or diseases, and so forth.

**animal open-field behavior** the activity of an animal measured in the form of exploratory behavior, movement, and number of defecations when it is exposed to an enclosed but otherwise relatively unrestricted laboratory environment, such as the OPEN-FIELD CHAMBER.

**animal phobia** a persistent and irrational fear of a particular type of animal, such as snakes, cats, dogs, insects, mice, birds, or spiders. The focus of fear is often anticipated harm or danger. The emotion of disgust may also play a role in the maintenance of certain animal phobias (e.g., insects, mice, spiders). Situations in which the feared animal may be encountered are often avoided or else endured with intense anxiety or distress. Animal phobias typically start in childhood. The DSM-IV-TR and DSM-5 designation is SPECIFIC PHOBIA, animal type.

**animal psychology** see COMPARATIVE PSYCHOLOGY.

**animal rights** the rights of nonhuman animals to be treated with respect and to be free from exploitation and abuse by humans. Proponents of animal rights believe that it is morally wrong to harm, kill, or exploit animals for any human uses, including any type of research, and many advocate that all sentient creatures are in some ways the moral equals of humans. Proponents of **animal welfare**, however, typically make a moral distinction between humans and nonhuman animals and believe that, whereas individuals have an obligation to treat animals humanely, certain research involving animals is medically and scientifically necessary. See also ANIMAL CARE AND USE.

**animal social behavior** the aggregate of interactions between members of a nonhuman animal group or family, including AGGRESSION, ANIMAL COMMUNICATION, ANIMAL COOPERATION, COURTSHIP, ANIMAL DOMINANCE, PLAY, and PARENTAL BEHAVIOR. Social organization and social structure can be inferred from a detailed knowledge of animal social behavior.

**animal spirits** in the system of GALEN, a vaguely defined force or substance that is pictured as flowing through hollow tubes from the brain to all parts of the body; as such, it is a precursor of the modern concept of the nerve impulse. Like other aspects of Galen's system, the concept of animal spirits remained current well into the 17th century. In the mechanistic physiology of René DESCARTES, for example, the animal spirits are retained to provide a link between body and mind. Descartes, however, anticipated the modern concept of the peripheral nervous system by maintaining that nerves conduct in either direction between the muscles and sense organs. Also called **vital spirits**. See also HYDRAULIC MODEL.

**animal starch** see GLYCOGEN.

**animal vocalization** any call or sound produced by a nonhuman animal that can be said to communicate, that is, that can provide information about internal state or likelihood of subsequent action or can be used to assess or manage the behavior of others. Vocalizations are typically produced through vibration of an organ, such as the larynx in some mammals, the two syrinxes in birds, or the blowholes in whales. Frequently sounds are amplified through special organs, such as throat sacs in amphibians. See also VOCAL COMMUNICATION.

**animal welfare** see ANIMAL RIGHTS.

**animate noun** a noun denoting a living entity capable of being the AGENT of an action; an **inanimate noun** is one denoting any other entity. The distinction affects the form of the noun in some languages and can be significant in CASE GRAMMAR.

**animatism** *n.* the belief that within all entities, living and nonliving, there exist supernatural forces or powers.

**animism** *n.* the belief that natural phenomena or inanimate objects are alive or possess lifelike characteristics, such as intentions, desires, and feelings. A well-known and often cited phenomenon in PRECAUSAL THINKING, animism was considered by Jean PIAGET to be characteristic of the thought of children in the PREOPERATIONAL STAGE, later fading out and being replaced by the strong belief in the universal nature of physical causality. —**animistic** *adj.*

**animus** *n.* in ANALYTIC PSYCHOLOGY, (a) an ARCHETYPE that represents universal masculine characteristics or (b) the unconscious masculine component of the female psyche. Compare ANIMA. [sense originated by Carl JUNG]

**anion** *n.* a negatively charged ION, such as a chloride ion. Compare CATION. —**anionic** *adj.*

**aniridia** *n.* a rare congenital disorder characterized by partial or almost complete absence of the iris, with abnormal development of the MACULA LUTEA and optic nerve. Glaucoma and cataract almost inevitably develop as a consequence of aniridia.

**aniridia, cerebellar ataxia, and mental deficiency** an extremely rare genetic disorder characterized by intellectual disability, lack of normal muscle control, and speech difficulty. Lenses and corneas may be normal,

but the eyes lack or have only partial irises. It is thought to be caused by heterozygous mutation in the *PAX6* gene on chromosome 11p13. Also called **Gillespie syndrome**. [first described in 1965 by U.S. ophthalmologist Frederick D. Gillespie (1927– )]

**aniseikonia** *n.* a condition in which the two eyes perceive images of unequal size or shape when these are viewed through each eye separately. It may be an unintended consequence of clinical alterations made to the cornea or lens.

**aniso-** (**anis-**) *combining form* unequal or dissimilar.

**anisocoria** *n.* inequality in the size of the pupils. Roughly one quarter of the population has a clinically visible amount of pupillary inequality; this figure increases with age: One third of people over age 60 exhibit anisocoria.

**anisometropia** *n.* a condition in which the eyes have differing powers of REFRACTION.

**anisometropic amblyopia** see DEVELOPMENTAL AMBLYOPIA.

**anisotropy** *n.* the state of being different, especially with respect to direction or orientation, lack of symmetry of form, or lack of uniformity of responses in different parts of something. Anisotropy in vision can refer to differences between the right and left eyes (e.g., ANISOMETROPIA). Also called **anisotropia**. Compare ISOTROPY. —**anisotropic** *adj.*

**ankylo-** (**ankyl-**) *combining form* bent or crooked.

**ankyloglossia** *n.* restricted movement of the tongue due to abnormal shortness of the lingual frenum. Normal speech production may be affected. Also called **tongue tie**.

**ankylosis** *n.* an immobility and consolidation of a joint, usually due to the destruction of membranes lining the joint or to a defect in bone structure. It may occur naturally, as in rheumatoid arthritis, or by surgical fusion (arthrodesis).

**Anna O.** the pseudonym of Austrian social worker and feminist Bertha Pappenheim (1859–1936), who was a patient of Josef BREUER, a colleague of Sigmund FREUD. Breuer's treatment of her hysteria was written up in an early case study that was an important precursor to psychoanalysis and to Freud's concept of TRANSFERENCE. See also TALKING CURE.

**annihilation** *n.* complete destruction. In psychoanalytic theory, annihilation is destruction of the self. In OBJECT RELATIONS THEORY, fear of annihilation (**annihilation anxiety**) is viewed as the earliest form of anxiety. Melanie KLEIN attributed it to the experience of the DEATH INSTINCT; British psychoanalyst Donald Winnicott (1896–1971) saw it as the anxiety that accompanies IMPINGEMENTS from the environment. —**annihilate** *vb.*

**anniversary reaction** a strong emotional response on the anniversary of a significant event. It most commonly involves depressive symptoms around the same time of the year that the death of a loved one, a severe disappointment, or other adverse event occurred.

**annual cycle** a pattern of behavior that recurs over the course of a year. Hibernating animals eat more food and gain weight in the months before winter, migratory animals experience periods of activity twice a year coincident with migration, and seasonally breeding animals undergo annual changes in reproductive physiology and related be-

havior (such as territory defense and SONG). Some annual cycles occur even in the absence of external seasonal cues.

**annulment** *n.* **1.** in psychoanalytic theory, a process in which disagreeable ideas or events are neutralized or made ineffective by converting them into daydreams and fantasies. Compare REPRESSION. **2.** a formal pronouncement that a marriage or judicial proceeding is invalid.

**annulospiral ending** a type of nerve fiber ending in MUSCLE SPINDLES in which the nerve fiber is wrapped around the muscle fiber near the center of the spindle. Annulospiral endings show a maximal discharge early in the stretch of a muscle and then adapt to a lower discharge rate. Also called **primary sensory ending**. Compare FLOWER-SPRAY ENDING.

**annunciator** *n.* in ergonomics, an early-warning system that uses sensors to monitor specific system attributes and some form of alert to warn the operator when deviation from the normal limits occurs. Action can then be taken to return the system attribute to its normal state. Compare CHECK READING. —**annunciate** *vb.*

**anodal polarization** a condition in which the flow of electrical current is toward the positive pole. In a typical nerve cell, the positive pole would be in extracellular fluid, and the current flow would be from the inside toward the outside of the cell membrane.

**anodyne** *n.* any agent or procedure that relieves pain, including analgesics (e.g., aspirin), anesthetics, or acupuncture.

**anoetic** *adj.* **1.** not involving or subject to intellectual or cognitive processes. Emotions are sometimes considered anoetic. **2.** describing a state of knowledge or memory in which there is no consciousness of knowing or remembering. **Anoetic consciousness** is a corresponding kind of “unknowing knowing” in which one is aware of external stimuli but not of interpreting them. [defined by Endel TULVING] **3.** lacking the capacity for understanding or concentrated thought. This meaning, originally applied to intellectual disability, is no longer common. Compare AUTONOETIC; NOETIC. —**anoesis** *n.*

**anogenital** *adj.* relating to the anatomical region in which the anus and genitalia are located.

**anomalopia** *n.* see ANOMALOUS TRICHROMATISM.

**anomalous dichromatism** partial color blindness in which only two colors (usually blue and yellow) can be seen. Also called **anomalous dichromasy**. See DICHROMATISM.

**anomalous experience** any of a variety of experiences that appear to be inconsistent with the usually accepted explanations of reality. Examples include OUT-OF-BODY EXPERIENCES, mystical experiences, lucid dreaming, and SYNESTHESIA. See also ALTERED STATE OF CONSCIOUSNESS.

**anomalous stimulus** a stimulus that is unexpected in relation to an organism's recent experience, which gives rise to unique neural events different from those caused by expected stimuli.

**anomalous trichromatism** a form of COLOR BLINDNESS or color weakness in which affected individuals have three types of retinal cone but one of these has a color sensitivity that is different from that of the corresponding normal cones. It is usually marked by a diminished capacity to

respond to the red–green color system. The ability to distinguish these colors increases in proportion to their intensity; that is, less brilliant shades are less easily identified. Also called **anomalopia**; **anomalous trichromasy**.

**anomaly** *n.* **1.** anything that is irregular or deviates from the norm, often referring to a congenital or developmental defect. **2.** in the analysis of SCIENTIFIC REVOLUTIONS by U.S. philosopher of science Thomas Kuhn (1922–1996), an empirical fact that should be but cannot be explained or predicted by a particular theoretical system. —**anomalous** *adj.*

**anomia** *n.* **1.** loss or impairment of the ability to name objects. All individuals with APHASIA exhibit anomia, and the extent of naming difficulty is a good general measure of aphasia severity. **2.** an obsolete term for a defective moral sense. [defined by U.S. physician Benjamin Rush (1745–1813)] —**anomic** *adj.*

**anomic aphasia** one of eight classically identified types of APHASIA, characterized by impairment in object naming (anomia) and word recognition in the absence of other significant language deficits. Conversational speech is fluent, with normal utterance length and grammatically well-formed sentences. Auditory comprehension is good for everyday conversation, but there may be some difficulty with complex syntax. Also called **amnesic** (or **amnesic**) **aphasia**; **nominal aphasia**.

**anomic suicide** one of four types of suicide proposed in 1897 by Émile DURKHEIM, involving the perception that one's relationship to society has changed so radically that its values and norms are no longer personally relevant. Feeling bereft of the societal standards upon which he or she had relied, the individual becomes frustrated, disillusioned, and disappointed. Anomic suicides often are associated with periods of social revolution or other significant widespread change. See also ALTRUISTIC SUICIDE; EGOISTIC SUICIDE; FATALISTIC SUICIDE.

**anomie** *n.* a sense of alienation and hopelessness in a society or group that is often a response to social upheaval. It also may be accompanied by changes in personal and social values. —**anomic** *adj.*

**anonymity** *n.* a principle of research ethics stating that the identity of a study participant should remain unknown. Relatedly, CONFIDENTIALITY applies to situations in which a participant's identity is known but should not be disclosed by the researcher.

**anopia** (**anopsia**) *n.* blindness in one or both halves of the visual field as a result of a defect in the peripheral or central visual system. See HEMIANOPIA; QUADRANTANOPIA.

**anorchism** *n.* congenital absence of one or both testes. The etiology is unknown but genetic factors may be involved. Also called **anorchia**.

**anorectant** *n.* see APPETITE SUPPRESSANT. Also called **anorexiant**.

**anorexia** *n.* absence or loss of appetite for food or, less commonly, for other desires (e.g., sex), especially when chronic. It may be primarily a psychological disorder, as in ANOREXIA NERVOSA, or it may have physiological causes, such as hypopituitarism. —**anorectic** or **anorexic** *adj.*, *n.*

**anorexia nervosa** an eating disorder, occurring most frequently in adolescent girls, that involves persistent refusal of food, excessive fear of weight gain, refusal to maintain minimally normal body weight, disturbed perception



of body image, and amenorrhea (absence of at least three menstrual periods).

**anorgasmia** *n.* the inability to achieve orgasm. See also FEMALE ORGASMIC DISORDER; MALE ORGASMIC DISORDER. —**anorgasmic** *adj.*

**anorthopia** *n.* asymmetrical or distorted vision, sometimes associated with STRABISMUS.

**anorthoscope** *n.* a device consisting of two disks, one in front of the other, that rotate in opposite directions. The front disk is opaque with four slits through which a highly distorted image on the back disk is viewed. Although the image on the rear disk is both rotating and distorted, it will appear normal and stationary when viewed through the front disk if both disks are rotated at the appropriate speed. [first constructed by Belgian physicist Joseph Antoine Ferdinand Plateau (1801–1883)]

**anorthoscopic perception** the holistically perceived form of an object revealed over time through a narrow slit aperture. It is distinct from ordinary object perception in that the perceived object arises from the temporal integration of visual information derived from the same retinotopic area (i.e., there is no spatially extended retinotopic image). Also called **slit viewing**. See ANORTHOSCOPE. [first reported in 1862 by German astrophysicist Johann Karl Friedrich Zöllner (1834–1882)]

**anosmia** *n.* absence or loss of the ability to smell, which may be general or limited to certain odors. General or total anosmia implies inability to smell all odorants on both sides of the nose, whereas partial anosmia implies an inability to smell certain odorants. —**anosmic** *adj.*

**anosognosia (anosagnosia)** *n.* a neurologically based failure to recognize the existence of a deficit or disorder, such as cognitive impairment, hearing loss, poor vision, or paralysis. ANTON'S SYNDROME is an example of anosognosia for blindness.

**A-not-B task** see OBJECT PERMANENCE.

**ANOVA** acronym for ANALYSIS OF VARIANCE.

**anovulatory menstrual cycle** a menstrual cycle that occurs without ovulation. It results from an imbalance between hormone production of the pituitary gland and the ovaries and is marked by irregular menstruation. An anovulatory menstrual cycle is most likely to be associated with menarche or menopause.

**anoxemia** *n.* the severe reduction or absence of oxygen in the arterial blood. This condition can result in loss of consciousness and brain damage. See also HYPOXEMIA. —**anoxemic** *adj.*

**anoxia** *n.* a decrease in the level of oxygen in the body tissues, including the brain. Consequences depend on the severity of the anoxia and the specific areas of the brain that are affected but can include generalized cognitive deficits or more focal deficits in memory, perception, or EXECUTIVE FUNCTION. Anoxia sometimes is used as a synonym of HYPOXIA. —**anoxic** *adj.*

**ANP** abbreviation for ACTIVE NOISE PROTECTION.

**ANR** abbreviation for ACTIVE NOISE REDUCTION.

**ANS** abbreviation for AUTONOMIC NERVOUS SYSTEM.

**Anschaung** *n.* intuition (German, in which it can also mean “view” or “perception”). In the thought of Immanuel KANT, *Anschaung* is that means of knowing in which

knowledge is immediate and not based on concepts. According to Kant, one's knowledge of sensible objects is of this kind.

**ANT** abbreviation for ATTENTION NETWORK TEST.

**ant-** *prefix* see ANTE-; ANTI-.

**Antabuse** *n.* a trade name for DISULFIRAM.

**antagonist** *n.* **1.** a drug or other chemical agent that inhibits the action of another substance. For example, an antagonist may combine with the substance to alter and thus inactivate it (**chemical antagonism**); an antagonist may reduce the effects of the substance by binding to the same receptor without stimulating it, which decreases the number of available receptors (**pharmacological antagonism**); or an antagonist may bind to a different receptor and produce a physiological effect opposite to that of the substance (**physiological antagonism**). **2.** a contracting muscle whose action generates force opposing the intended direction of movement. This force may serve to slow the movement rapidly as it approaches the target or it may help to define the movement end point. Compare AGONIST. —**antagonism** *n.* —**antagonistic** *adj.*

**antagonistic colors** colors at opposite sides of the COLOR CIRCLE, such as red and green or blue and yellow. Also called **complementary colors**.

**antagonistic muscles** pairs of muscles (or muscle groups) that oppose each other in function. For example, the biceps flexes the arm at the elbow, whereas the opposing triceps straightens the arm.

**ante- (ant-)** *prefix* before or in front of.

**antecedent** *n.* **1.** an event or stimulus that precedes some other event or stimulus and often elicits, signals, or sets the occasion for a particular behavior or response. See also CONTINGENCY. **2.** in linguistics, the noun or noun phrase to which a PRONOUN (especially a relative pronoun, such as *who*, *that*, or *which*) refers back. For example, in the train that I caught yesterday, the antecedent of *that* is *train*. See ANAPHORA. **3.** see CONSEQUENT.

**antecedent-focused emotion regulation** in the PROCESS MODEL OF EMOTION REGULATION, a form of emotion regulation in which one faced with a potentially emotional situation attempts to reappraise it in a way that decreases its emotional relevance. For example, reappraising an upcoming task as a challenge rather than as a threat, or thinking of an upcoming medical procedure as beneficial rather than painful, can reduce one's subjective emotional experience of the actual event. Thus, reappraisal as antecedent to the event can, if effective, preempt full-blown emotional responses to it. Compare RESPONSE-FOCUSED EMOTION REGULATION. [proposed in 1998 by U.S. clinical psychologist James J. Gross]

**antecedent variable** any variable that precedes a response variable. For example, in REGRESSION ANALYSIS it is the INDEPENDENT VARIABLE, and in PATH ANALYSIS it is the variable beginning a chain of causal links. Compare CONSEQUENT VARIABLE.

**antergic** *adj.* exerting force in opposition. For example, antergic pairs of muscles or muscle groups oppose each other in flexing or extending a joint. Compare SYNERGY.

**anterior** *adj.* in front of or toward the front. In reference to two-legged upright animals, this term is sometimes used interchangeably with VENTRAL to mean toward the front surface of the body. Compare POSTERIOR. —**anteriorly** *adv.*

**anterior cerebral artery** a branch of the INTERNAL CAROTID ARTERY that forms part of the CIRCLE OF WILLIS. The anterior cerebral artery passes above the OPTIC CHIASM and extends forward into the LONGITUDINAL FISSURE, where it curves around the horn of the CORPUS CALLOSUM before arching back along the upper surface of the corpus callosum. It supplies blood to portions of the FRONTAL LOBE, which is involved in motor functions and higher level cognitive processes, and portions of the PARIETAL LOBE, which is involved in sensory functions. Specific structures served include the corpus callosum itself, the CINGULATE CORTEX, parts of the BASAL GANGLIA, and the SEPTAL AREA.

**anterior chamber** see EYE.

**anterior choroidal artery** a relatively narrow artery that is a posterior branch of the MIDDLE CEREBRAL ARTERY. It passes across the optic tract toward the temporal horn of the lateral ventricle and into the choroid plexus, hippocampus, thalamus, amygdala, and related deep structures.

**anterior cingulate cortex (ACC)** the front, more curved part of the CINGULATE CORTEX, a structure in the forebrain that forms a collar around the CORPUS CALLOSUM. It is divided into two distinct areas believed to have essential roles in numerous activities. The **dorsal anterior cingulate cortex (dACC)**, often considered the “cognition” division, is implicated in a range of EXECUTIVE FUNCTIONS, such as attention allocation, error and novelty detection, WORKING MEMORY modulation, COGNITIVE CONTROL, RESPONSE CONFLICT, and RESPONSE SELECTION. The **ventral anterior cingulate cortex (vACC)**, often considered the “emotion” division, is thought to be involved in mediating anxiety, fear, aggression, anger, empathy, and sadness; in perceiving both physical and psychological pain; and in regulating autonomic functions (e.g., blood pressure, heart rate, respiration). Although the precise mechanisms by which these processes occur in the ACC remain unknown, researchers have theorized that a reciprocal relationship between the dACC and the vACC helps maintain a balance between cognitive and emotional processing so as to enable SELF-REGULATION. Additionally, ACC abnormalities may contribute to the etiology of various mental disorders, such as major depressive disorder, bipolar disorder, and attention-deficit/hyperactivity disorder. See also POSTERIOR CINGULATE CORTEX.

**anterior commissure** see COMMISSURE.

**anterior communicating artery (ACoA; AComA)** a short blood vessel that connects the left and right sides of the ANTERIOR CEREBRAL ARTERY. Part of the CIRCLE OF WILLIS, the anterior communicating artery passes in front of the OPTIC CHIASM and stretches across the beginning of the LONGITUDINAL FISSURE. Although its anatomy varies widely across individuals, the ACoA typically gives off two or three fine branches that supply oxygenated blood to the anterior COMMISSURE, CAUDATE NUCLEUS, CINGULATE CORTEX, CORPUS CALLOSUM, FORNIX, optic chiasm, SEPTUM PELLUCIDUM, and other structures within the BASAL FOREBRAIN and FRONTAL LOBES. The ACoA is one of the most common sites in the brain for the formation and subsequent rupture of ANEURYSMS, the well-documented effects of which have been termed **anterior communicating artery syndrome**. These effects generally include problems with reasoning, abstraction, and other higher level cognitive processes (i.e., EXECUTIVE DYSFUNCTION), memory impairments, personality changes, and deficits in perceptual abilities and motor control.

**anterior corticospinal tract** see CORTICOSPINAL TRACT.

**anterior cranial fossa** see FOSSA.

**anterior horn 1.** the frontmost division of each LATERAL VENTRICLE in the brain. **2.** see VENTRAL HORN.

**anterior pituitary** the anterior lobe of the PITUITARY GLAND. It manufactures and releases hormones such as PROLACTIN, GROWTH HORMONE, and TROPIC HORMONES. Also called **adenohypophysis**.

**anterior–posterior axis** a line or plane running from the front to the back of the body.

**anterior–posterior development gradient** the more rapid growth of the head region compared with posterior areas of the body during fetal development. In the early embryonic stages, the head and brain make up half of the body mass, and at birth the head represents one quarter of the infant’s total height. See CEPHALOCAUDAL.

**anterior rhizotomy** see RHIZOTOMY.

**anterior root** see VENTRAL ROOT.

**anterior spinothalamic tract** see SPINOTHALAMIC TRACT.

**anterior white commissure** see WHITE COMMISSURE.

**anterograde** *adj.* moving or extending forward in time or in space.

**anterograde amnesia** see AMNESIA.

**anterograde degeneration** a pattern of neuron destruction following axonal injury that spreads forward along the axon, away from the nerve cell body. Also called **Wallerian degeneration**. Compare RETROGRADE DEGENERATION.

**anterograde memory** the ability to retain events, experiences, and other information following a particular point in time. When this ability is impaired (i.e., by injury or disease), it becomes very difficult or even impossible to recall what happened from that moment forward, a condition known as anterograde AMNESIA. For example, an individual with deficits of anterograde memory resulting from a stroke might not remember the name of a new person introduced to him or her but would remember the name of a close childhood friend. Compare RETROGRADE MEMORY.

**anterograde transport** see AXONAL TRANSPORT.

**anterolateral system** a major SOMATOSENSORY SYSTEM consisting of nerve fibers that originate mostly from DORSAL HORN cells and ascend in the white matter of the spinal cord, conveying information about pain, temperature, and touch to higher centers. It includes the SPINOTHALAMIC TRACT; the **spinoreticular tract**, traveling through the spinal cord to the reticular formation of the brainstem; and the **spinomesencephalic tract**, traveling through the spinal cord to the mesencephalon (midbrain).

**anthropo-** *combining form* human.

**anthropocentrism** *n.* the explicit or implicit assumption that human experience is the central reality and, by extension, the idea that all phenomena can be evaluated in the light of their relationship to humans. —**anthropocentric** *adj.*

**anthropogenesis** *n.* the scientific study of the origins and development of humans. Also called **anthropogeny**. —**anthropogenetic** or **anthropogenic** *adj.*

**anthropoid** *adj.* resembling a human being. The term is usually applied to apes: specifically, gorillas, orangutans, chimpanzees, bonobos, and gibbons.

**anthropological linguistics** the branch of linguistics that draws connections between the characteristics of a particular language and the cultural practices, social structures, and worldview of the society in which it is spoken (see LINGUISTIC DETERMINISM; LINGUISTIC RELATIVITY). The field developed primarily from an interest in describing languages indigenous to North America, such as Navajo and Hopi.

**anthropology** *n.* the study of human beings. This typically involves the description and explanation of similarities and differences among human groups in their languages, aesthetic expressions, belief systems, and social structures over the range of human geography and chronology. **Physical anthropology** focuses on the origin, evolution, and environmental adaptation of human groups, whereas **sociocultural anthropology** is concerned with the development and functioning of customs, beliefs, and institutions. Outside of the United States, this latter subdivision is often called ETHNOLOGY. —**anthropological** *adj.* —**anthropologist** *n.*

**anthropometry** *n.* **1.** the scientific study of how the size and proportions of the human body are affected by such variables as age, sex, and ethnicity. **2.** the taking of measurements of the human body for purposes of comparison and study. —**anthropometric** *adj.* —**anthropometrist** *n.*

**anthropomorphism** *n.* **1.** the attribution of human characteristics to nonhuman entities such as deities, spirits, animals, plants, or inanimate objects. It is a fundamental tendency of the human imagination as reflected in language, religion, and art. **2.** in COMPARATIVE PSYCHOLOGY, the tendency to interpret the behavior and mental processes of nonhuman animals in terms of human abilities. A variation is ANTHROPOCENTRISM, which uses human experience as the standard by which the behavior or mental processes of nonhuman animals, for example, ANIMAL INTELLIGENCE, is evaluated. See also LLOYD MORGAN'S CANON. Compare ZOOMORPHISM. —**anthropomorphic** *adj.*

**anthroponomy** *n.* the science of human development as it relates to the development of other organisms and to the environment. —**anthroponomical** *adj.*

**anthroposcopy** *n.* the practice of judging the body build of an individual by inspection, rather than by the use of anthropometric techniques of body measurement. —**anthroposcopic** *adj.*

**anti-** (**ant-**) *prefix* **1.** opposing or against (e.g., ANTICONFORMITY). **2.** opposite to (e.g., ANTIMETROPIA). **3.** counteracting or inhibiting (e.g., ANTIDEPRESSANT).

**antiaging remedy** any intervention that is hypothesized to slow down or reverse the effects of aging. Typically these interventions are pharmacological (e.g., antioxidants, vitamin C, growth hormones), but they also can be lifestyle changes (e.g., exercise).

**antiandrogen** *n.* a substance that reduces or blocks the physiological effects of androgens, the male sex hormones, on tissues normally responsive to these hormones. Examples include **bicalutamide** (U.S. trade name: Casodex), **finasteride** (U.S. trade names: Propecia; Proscar), **flutamide** (U.S. trade name: Eulexin), and **nilutamide** (U.S. trade name: Nilandron). They correct the effects of excessive levels of

male sex hormones and may be used to control hair loss and prostate cancer in males and to reverse masculine traits (e.g., excessive facial hair) in females. More controversially, antiandrogens have been used in the treatment of repeat sex offenders (see CHEMICAL CASTRATION). Also called **androgen antagonist**.

**anxiety medication** see ANXIOLYTIC.

**antibiotic** *n.* a drug used to destroy pathogenic or otherwise harmful microorganisms, especially bacteria. Antibiotics can be produced by or obtained from living cells (e.g., molds, yeasts, bacteria) or manufactured as synthetic chemicals with effects similar to natural antibiotics. Some work by interfering with bacterial reproduction, whereas others may disrupt the normal life functions of the pathogen. Antibiotics are ineffective against viruses. Overuse and inappropriate use of these agents are contributing to the development of bacterial resistance to many commonly used antibiotics.

**antibody** *n.* a modified protein molecule, produced by B LYMPHOCYTES, that interacts with an ANTIGEN and renders it harmless (see IMMUNE RESPONSE). Each type of antibody is designed to interact with a specific antigen and can be mass-produced by the body following exposure to an identical antigen. See ANTIGEN-ANTIBODY REACTION; IMMUNITY.

**anticathexis** *n.* in psychoanalytic theory, a process in which the EGO withdraws PSYCHIC ENERGY from certain unconscious wishes and ideas and uses it to strengthen other wishes and ideas capable of blocking the decathected material's entrance into consciousness. The anticathected material may be similar to the original or opposite but related to it: For example, philanthropy may neutralize an unconscious wish to hoard. Also called **countercathexis**. See also CATHEXIS. —**anticathected** *adj.*

**anticholinergic drug** any pharmacological agent that blocks or otherwise interferes with the release of the neurotransmitter acetylcholine and thus disrupts the transmission of impulses along parasympathetic routes. Anticholinergic drugs act at acetylcholine receptors, with the majority of such drugs acting at MUSCARINIC RECEPTORS and known as **antimuscarinic drugs**; the others act at NICOTINIC RECEPTORS and are known as **antinicotinic drugs**. In large doses, anticholinergic drugs may also interfere with actions of histamine, serotonin, and norepinephrine. Natural anticholinergic drugs include ATROPINE and SCOPOLAMINE. A variety of synthetic anticholinergic drugs are used to treat neurological disorders, many as ANTIPARKINSONIAN DRUGS. They include BENZTROPINE, BIPERIDEN, PROCYCLIDINE, and TRIHEXYPHENIDYL, which are administered primarily to relieve the symptoms of muscular rigidity. Anticholinergic drugs are often used in combinations to control specific symptoms. TRICYCLIC ANTIDEPRESSANTS and some conventional ANTIPSYCHOTICS also have anticholinergic activity. Also called **parasympatholytic drug**.

**anticholinergic effects** side effects that are characteristic of anticholinergic drugs and are also associated with other agents (e.g., TRICYCLIC ANTIDEPRESSANTS, MONOAMINE OXIDASE INHIBITORS) that exert antagonist effects at MUSCARINIC RECEPTORS. They include dry mouth, blurred vision, urinary hesitancy or retention, and constipation. Similar antagonistic effects may occur at NICOTINIC RECEPTORS as well. Depending on the specific receptors involved, these effects may also be called **antimuscarinic effects** or **antinicotinic effects**.

**anticholinergic syndrome** a disorder produced by

anticholinergic drugs and due to their antagonistic effects at ACETYLCHOLINE RECEPTORS, marked by symptoms involving both the peripheral and central nervous systems. The former include dry mucous membranes, dry mouth, and flushed skin and face, whereas the latter include ataxia (unsteady gait), drowsiness, slurred speech, confusion and disorientation, hallucinations, and deficits of short-term memory. Tricyclic antidepressants, aliphatic phenothiazines, antiparkinsonian agents, and scopolamine are examples of drugs that can cause anticholinergic syndrome. This syndrome is often observed in patients receiving combinations of such drugs.

**anticholinesterase** *n.* see CHOLINESTERASE.

**anticipation** *n.* **1.** looking forward to a future event or state, sometimes with an affective component (e.g., pleasure, anxiety). **2.** the onset of a hereditary disease at earlier and earlier ages in successive generations.

**anticipation learning method** see SERIAL ANTICIPATION METHOD.

**anticipatory anxiety** worry or apprehension about an upcoming event or situation because of the possibility of a negative outcome, such as danger, misfortune, or adverse judgment by others. The worry or apprehension is often accompanied by somatic symptoms of tension. Anticipatory anxiety is a common feature of PANIC DISORDER, in which the concern is over the possibility of experiencing future panic attacks.

**anticipatory attitude change** an alteration in one's attitude toward something that occurs when one is told to expect a persuasive message on the subject (the direction is unknown). When the topic of the anticipated message is very important, attitudes polarize in the direction of the initial attitude. When the topic is of little importance, attitudes become more moderate.

**anticipatory coping** a stress-management strategy in which one seeks to avoid or minimize problems associated with a critical event occurring in the near future that involves potential risk. Examples of such events include a scheduled public speech, a job interview, an exam, or a promotion. Anticipatory coping thus can be understood as the management of known risks, involving efforts to solve the actual problems (e.g., by increasing effort, by enlisting help, by investing other resources) or to feel good in spite of the risks (e.g., by redefining the situation as less threatening, by distraction, by gaining reassurance from others). It is assumed to increase with middle and old age and is one of four types of coping proposed by German psychologists Ralf Schwarzer (1943– ) and Nina Knoll, the others being PREVENTIVE COPING, PROACTIVE COPING, and REACTIVE COPING.

**anticipatory error** **1.** the error of making a response before it should be made. **2.** an error in which an item is recalled as having been earlier in a list than it actually was.

**anticipatory grief** sorrow and anxiety experienced by someone who expects a loved one to die within a short period. The period of anticipatory grief can be regarded as having both stressful and constructive possibilities: It might cushion the emotional impact when the death actually occurs, but it could have the unfortunate consequence of leading a person to withdraw from the relationship, treating the other person as though he or she were already dead. See also COMPLICATED GRIEF; TRAUMATIC GRIEF. [introduced as a concept in 1944 by U.S. psychiatrist Erich Lindemann (1900–1974)]

**anticipatory guidance** counseling and educational services provided to individuals or families before they reach a turning point or significant developmental change in their lives. Examples include parental guidance before a child enters school and counseling of employees soon to reach retirement age.

**anticipatory image** a mental image that allows one to envision transformations of that image, even if one has never experienced such transformations in the past. According to PIAGETIAN THEORY, anticipatory images are not produced until the CONCRETE OPERATIONAL STAGE. Compare REPRODUCTIVE IMAGE.

**anticipatory movement** a movement that is based on (a) expected changes in the environment (e.g., predictive smooth eye or hand movements to track a moving stimulus); (b) expected postural necessity (e.g., to maintain balance when shifting a limb); or (c) preparation for an upcoming action (e.g., prepositioning movements, such as lip rounding in speech).

**anticipatory nausea** nausea that occurs prior to chemotherapy (typically during the day before administration). Nausea and vomiting can also occur after an individual has received a few treatments, usually in response to triggers in the environment (e.g., odors and sights of the hospital room) that have been associated with the physical side effects of chemotherapy.

**anticipatory pleasure** enjoyment that is related to reward motivation and to activities targeting desired outcomes; that is, pleasure from knowing that one will soon be rewarded in goal-directed behavior. It contrasts with **consummatory pleasure**, which results from the satiation of a desire.

**anticipatory regret** a sense of the potential negative consequences of a decision that influences the choice made. For example, an individual may decide not to make an investment because of the feelings associated with an imagined loss. See PROSPECT THEORY.

**anticipatory response** a response that occurs before the evoking stimulus is presented.

**anticipatory schema** in the PERCEPTUAL CYCLE HYPOTHESIS, a structured pattern of knowledge (a "preunderstanding") that influences an organism's expectations in a given situation, thus guiding the organism's perception of that situation (i.e., by preparing it to receive certain kinds of information or to perceive particular aspects of the situation) and ultimately directing its exploration and action. For example, a student entering an unfamiliar classroom for the first time may invoke a general classroom schema, which likely contains information about the general characteristics of such a room (the presence of a floor, a ceiling, four walls, a blackboard, desks, etc.) and leads the person to expect to encounter these things within this novel classroom. Since the general classroom schema does not contain information suggesting the presence of, say, a washing machine, the student would not spend time looking for this unanticipated item. Anticipatory schemas are dynamic rather than static; although based on previous experience, they are continuously being revised as a result of new experiences. [defined in 1976 by Ulric NEISSER]

**anticonfirmationism** *n.* the position that it is not possible to confirm the truth of general propositions, including scientific hypotheses, either by accruing positive instances or by probability estimates. See FALSIFICATIONISM.

**anticonformity** *n.* a deliberate, self-conscious refusal to comply with accepted social standards, often accompanied by the expression of ideas, beliefs, or judgments that challenge those standards. Anticonformity is motivated by rebelliousness or obstinacy rather than the need to express oneself sincerely. Also called **counterconformity**. Compare CONFORMITY; NONCONFORMITY.

**anticonvulsant** *n.* any drug used to reduce the frequency or severity of epileptic seizures or to terminate a seizure already underway. Until the advent of the HYDANTOINS in the 1930s, anticonvulsants consisted mainly of BROMIDES and BARBITURATES: PHENOBARBITAL was first used in the treatment of epilepsy in 1912 and remained the mainstay of treatment until the introduction of the hydantoin PHENYTOIN. Drugs now used to treat partial or tonic-clonic seizures include phenytoin, CARBAMAZEPINE, VALPROIC ACID, phenobarbital, and newer anticonvulsants, such as LAMOTRIGINE, GABAPENTIN, tiagabine, TOPIRAMATE, vigabatrin, and zonisamide. Ethosuximide and other SUCINIMIDES may be used in managing absence seizures. The BENZODIAZEPINES are also effective antiseizure medications. Also called **antiepileptic**.

**antidepressant** *n.* any drug administered in the treatment of depression. Most antidepressants work by increasing the availability of monoamine neurotransmitters such as norepinephrine, serotonin, or dopamine, although they do so by different routes. The MONOAMINE OXIDASE INHIBITORS (MAOIs) work by inhibiting monoamine oxidase, one of the principal enzymes that metabolize these neurotransmitters. Most of the other antidepressants, including the TRICYCLIC ANTIDEPRESSANTS (TCAs) and the selective serotonin reuptake inhibitors (see SSRI), inhibit the reuptake of serotonin or norepinephrine (and to a much lesser degree dopamine) into the presynaptic neuron. Either process leaves more of the neurotransmitter free to bind with postsynaptic receptors, initiating a series of events in the postsynaptic neuron that is thought to produce the actual therapeutic effect. In 2007, a BOXED WARNING was added to the labeling of all antidepressants, stating that the risk of suicidal thinking and actual suicide increased in children, adolescents, and young adults taking antidepressants versus those taking placebo in short-term studies of MAJOR DEPRESSIVE DISORDER and that, since depression itself is associated with an increased suicide risk, all patients newly on antidepressant medications should be monitored appropriately.

**antidiuretic hormone (ADH)** see VASOPRESSIN.

**antidromic conduction** the conduction of a nerve impulse in a reversed direction (i.e., from axon to cell body), produced for experimental purposes. Also called **antidromic activation**; **antidromic phenomenon**.

**antiepileptic** *n.* see ANTICONVULSANT.

**antiestrogen** *n.* a substance that reduces or blocks the physiological effects of estrogens, the female sex hormones, on tissues normally responsive to these hormones. Examples include **tamoxifen** (U.S. trade name: Nolvadex), **toremifene** (U.S. trade name: Fareston), **fulvestrant** (U.S. trade name: Faslodex), and **selective estrogen receptor modulators** (SERMs), such as **raloxifene** (U.S. trade name: Evista), which have both inhibitory and facilitative effects upon different pathways mediated by estrogen receptors. Antiestrogens are used in the treatment or prevention of breast cancer and some estrogenically mediated effects of

menopause, as well as in the treatment of some types of female infertility. Also called **estrogen antagonist**.

**antigen** *n.* any substance that is treated by the immune system as foreign and is therefore capable of inducing an IMMUNE RESPONSE, particularly the production of ANTIBODIES that render it harmless. The antigen may be a virus, a bacterium, a toxin (e.g., bee venom), or tissue (e.g., blood) of another individual with different genetic characteristics. —**antigenic** *adj.*

**antigen–antibody reaction** the binding of an ANTIBODY to its particular ANTIGEN as part of the body's natural defense against the introduction of a foreign substance. The bound antibody renders the foreign substance more susceptible to degradation by immune cells, for example, engulfment by phagocytic cells. Once the individual's IMMUNE SYSTEM has developed antibodies to fight a certain type of antigen, the antibodies can be mobilized quickly to destroy any repeated invasion by the antigen; thus, the first antigen attack induces IMMUNITY to future attacks. See also IMMUNE RESPONSE.

**antigonadal action** the blocking of gonadal function by an agent or process, such as a lesion in the pituitary gland or amygdala.

**antiharassment policies** policies and procedures adopted by an organization or institution to prevent and counter harassment due to gender, race, or sexual orientation. They typically include alerting people that antiharassment policies are in place, conducting awareness training designed to educate people about harassment, implementing disciplinary measures when necessary, and having formal grievance procedures.

**antihistamine** *n.* any drug or agent that inhibits the effects of HISTAMINE at central or peripheral histamine receptors, especially H<sub>1</sub> receptors. They may have sedative effects and are a common component of over-the-counter sleeping aids. Some are used in the treatment of allergic reactions or motion sickness (see DIPHENHYDRAMINE; DIMENHYDRINATE). The so-called **non sedating antihistamines** have less ability to cross the BLOOD–BRAIN BARRIER and are used solely in the management of allergic responses. Also called **histamine antagonist**.

**anti-intoxicant** *n.* a theoretical drug that would have the effect of countering the intoxicating effects of alcohol. Also called **amethystic**.

**antilibidinal ego** in the OBJECT RELATIONS THEORY of British psychoanalyst W. Ronald D. Fairbairn (1889–1964), the portion of the EGO STRUCTURE that is similar to Sigmund FREUD's SUPEREGO. The antilibidinal ego constitutes a nonpleasure-gratifying, self-deprecatory, or even hostile self-image; it is posited to develop out of the unitary ego present at birth when the infantile libidinal ego (similar to the ID) experiences deprivation at the hands of the parent and the infant suppresses his or her frustrated needs. Also called **internal saboteur**. See FAIRBAIRNIAN THEORY.

**Antilirium** *n.* a trade name for PHYSOSTIGMINE.

**antimanic drug** see MOOD STABILIZER.

**antimetabolite** *n.* a substance that has a molecular structure so similar to that of another substance required for a normal physiological function that it may be accepted as the required molecule, thereby disrupting a normal metabolic process. For example, the anticoagulant bishydroxycoumarin functions as an antimetabolite by interfering

with vitamin K in producing the blood-clotting agent prothrombin.

**antimetropia** *n.* a condition in which one eye is myopic (nearsighted) and the other is hyperopic (farsighted).

**anti-Müllerian hormone (AMH)** see MÜLLERIAN-INHIBITING HORMONE.

**antimuscarinic drug** see ANTICHOLINERGIC DRUG.

**antinicotinic drug** see ANTICHOLINERGIC DRUG.

**antinociceptive** *adj.* describing or relating to any factor that increases tolerance for, or reduces sensitivity to, harmful stimuli, usually stimuli that cause pain. See also PAIN PERCEPTION.

**antinodal behavior** see NODAL BEHAVIOR.

**antinomy** *n.* **1.** in common usage, a state of opposition or contradiction between two things. **2.** in the thought of Immanuel KANT, a contradiction between two A PRIORI propositions in metaphysics, each of which can be supported by equally valid proofs. Kant cited a series of such antinomies as part of his argument against speculative metaphysics and in favor of his own position that the only world one can have knowledge of is the world of PHENOMENA.

**antioxidant** *n.* a substance, such as beta-carotene, lutein, lycopene, selenium, and vitamins A, C, and E, that may protect cells against the effects of FREE RADICALS by inhibiting or removing oxidation.

**antiparkinsonian drug** any pharmacological agent that reduces the severity of symptoms of Parkinson's disease or drug-induced parkinsonism (common with the use of conventional ANTIPSYCHOTICS), including tremors, movement and gait abnormalities, and muscle rigidity. Such agents include antihistamines (e.g., DIPHENHYDRAMINE), anticholinergic drugs (e.g., BENZTROPINE, TRIHEXYPHENIDYL), DOPAMINE-RECEPTOR AGONISTS (e.g., carbidopa, levodopa), and specific enzyme inhibitors of CATECHOL-*o*-METHYLTRANSFERASE (COMT) and of MAO-B (see MONOAMINE OXIDASE).

**antipathy** *n.* strong aversion or deep-seated dislike. See also PREJUDICE. —**antipathetic** *adj.*

**antipredator behavior** all forms of action by an organism that function to avoid being captured, wounded, or killed by another organism, including ANTIPREDATORY AGGRESSION, DEFENSIVE BEHAVIOR, and MOBBING as well as VIGILANCE, IMMOBILITY, the CONFUSION EFFECT, the DILUTION EFFECT, and flight or other evasive action. To respond adaptively to predation threats and increase their chances of survival, prey animals have to be able to recognize their potential predators. Even though a few studies have demonstrated innate predator recognition, the vast majority of animals have to rely on learning to acquire this information.

**antipredator defense** any means by which nonhuman animals avoid predation. It can take the form of CAMOUFLAGE, BATESIAN MIMICRY, MÜLLERIAN MIMICRY, WARNING COLORATION, or various forms of ANTIPREDATOR BEHAVIOR.

**antipredatory aggression** attack behavior directed toward a potential predator as a form of defense. See AGGRESSION; DEFENSIVE BEHAVIOR.

**antipsychiatry** *n.* an international movement that emerged in the 1960s under the leadership of British psychiatrist R. D. Laing (1927–1989), South African psychia-

trist David Cooper (1931–1986), Italian psychiatrist Franco Basaglia (1924–1980), and U.S. psychiatrist Thomas S. Szasz (1920–2012). Antipsychiatrists contested the scientific and practical validity of psychiatry and radically opposed what they understood as a hospital-centered medical specialty legally empowered to treat and institutionalize individuals with mental disorders. Indeed, many antipsychiatrists argued against the very existence of mental disorders themselves, advancing the notion that they are not illnesses at all but rather alternative ways of behaving that alarm people. They viewed psychiatry as a form of social repression and a means to control deviance, and treatment as a disguised form of punishment. —**antipsychiatrist** *n.*

**antipsychotic** *n.* any pharmacological agent used to control the symptoms of schizophrenia and other disorders characterized by impaired reality testing, as evidenced by severely disorganized thought, speech, and behavior. Formerly called **major tranquilizers** and later **neuroleptics**, antipsychotics are commonly divided into two major classes: **conventional** or **typical (first-generation) antipsychotics**, which were developed in the 1950s and include the PHENOTHIAZINES and BUTYROPHENONES, and the newer **atypical (novel or second-generation) antipsychotics**, of which CLOZAPINE is the prototype, first marketed in the United States in 1990. The latter class has fewer adverse side effects than the former, particularly the neurologically based EXTRAPYRAMIDAL SYMPTOMS but also the less serious yet unpleasant autonomic effects, such as dry mouth and blurred vision. However, the newer drugs have been associated with some serious metabolic and other effects (e.g., hyperglycemia, agranulocytosis).

**antipyretic** *n.* a drug that helps control fever or other forms of hyperthermia (raised body temperature) by acting on the thermoregulatory center in the hypothalamus. Antipyretics may also help the body to dissipate heat faster by dilating peripheral arteries. Aspirin and other nonopioid analgesics function as antipyretics.

**Anti-Semitism Scale (A-S Scale)** a personality test that measures five aspects of anti-Semitism, including perceptions of Jews as personally offensive and socially threatening, hostile attitudes that suggest what should be done to Jews, and presumptions that Jews are too exclusive. See also F SCALE. [constructed in 1950 by German-born U.S. philosopher and social theorist Theodor Adorno (1903–1969), Polish-born U.S. psychologist Else Frenkel-Brunswick (1908–1958), and colleagues in their analysis of the AUTHORITARIAN PERSONALITY]

**antisocial** *adj.* denoting or exhibiting behavior that sharply deviates from social norms and also violates other people's rights. Arson and vandalism are examples of antisocial behavior. Compare PROSOCIAL.

**antisocial aggression** any act of instrumental AGGRESSION that has socially destructive and undesirable consequences, such as rape or murder. Compare PROSOCIAL AGGRESSION.

**antisocial personality disorder** the presence of a chronic and pervasive disposition to disregard and violate the rights of others. Manifestations include repeated violations of the law, exploitation of others, deceitfulness, impulsivity, aggressiveness, reckless disregard for the safety of self and others, and irresponsibility, accompanied by lack of guilt, remorse, and empathy. The disorder has been known by various names, including **dyssocial personality**,

**psychopathic personality**, and **sociopathic personality**. It is among the most heavily researched of the personality disorders and the most difficult to treat. It is included in both *DSM-IV-TR* and *DSM-5*.

**antispasmodic drug** any pharmacological agent used in the management of spasms of smooth muscle. Such drugs are commonly used to treat gastrointestinal conditions such as IRRITABLE BOWEL SYNDROME.

**antiterrorist activities** security programs to detect and counter terrorist activities, including those involving potential chemical and biological attacks.

**antithesis** *n.* **1.** a THESIS, idea, or proposition that is opposite to or contradicts another. **2.** in philosophy, the second stage of a dialectical process based on proposition, contradiction, and the reconciliation of these (thesis, antithesis, and SYNTHESIS). The term is often associated with German philosopher Georg Wilhelm Friedrich Hegel (1770–1831) and his theory of the dialectical development of ideas, although it was not a term he used in his analysis. See also DIALECTICAL MATERIALISM. —**antithetical** *adj.*

**antitussive** *n.* a drug that suppresses coughing by affecting the cough-control center in the medulla oblongata of the brain. Among antitussives are the OPIOIDS codeine and dextromethorphan; from 1898 until 1924 when it became illegal, heroin was marketed as an antitussive. Also called **cough suppressant**.

**antiviral drug** any substance that interferes with the normal functioning of viruses. Antiviral drugs may act by blocking host-cell enzyme systems required for viral reproduction, by blocking signals carried in messenger RNA, or by uncoating the nucleic acid molecule of the virus. These drugs are difficult to manage in clinical practice because chemicals that block viral processes may also interfere with the patient's normal cell functions. However, antivirals occasionally interact with substances in human tissues to yield unexpected benefits, as with AMANTADINE, which can be used as an antiparkinsonian agent.

**antivitamin** *n.* a substance that interferes with the functions of vitamins. Most antivitamins are chemicals that are similar in structure to the vitamins they render ineffective. They are used mainly in studies and tests of vitamin deficiencies.

**Anton's syndrome** a rare disorder marked by the lack of awareness of blindness. The person genuinely believes he or she can see despite clinical evidence of loss of vision, such as difficulties in getting around, handling objects, and so forth. The condition is a type of visual ANOSOGNOSIA resulting from injury to the occipital lobe of the brain. [first described in 1899 by Gabriel Anton (1858–1933), Austrian physician]

**antonym** *n.* a word that has the opposite meaning to another word in the same language. *After*, for example, is the antonym of *before*. Compare SYNONYM. —**antonymous** *adj.*

**antonym test** an examination in which the respondent is presented with a word and asked to supply a word with the opposite meaning to it (e.g., being given *true* and replying *false*). Also called **opposites test**.

**anvil** *n.* see OSSICLES.

**anxiety** *n.* an emotion characterized by apprehension and somatic symptoms of tension in which an individual antic-

ipates impending danger, catastrophe, or misfortune. The body often mobilizes itself to meet the perceived threat: Muscles become tense, breathing is faster, and the heart beats more rapidly. Anxiety may be distinguished from FEAR both conceptually and physiologically, although the two terms are often used interchangeably. Anxiety is considered a future-oriented, long-acting response broadly focused on a diffuse threat, whereas fear is an appropriate, present-oriented, and short-lived response to a clearly identifiable and specific threat. —**anxious** *adj.*

**anxiety attack** see PANIC ATTACK.

**anxiety discharge** any anxiety-reducing action or repetitive activity (e.g., exercise, knitting, weeding a garden) associated with normal daily living, viewed as an alternative to suppression of anxiety.

**anxiety disorder** any of a group of disorders that have as their central organizing theme the emotional state of fear, worry, or excessive apprehension. This category includes, for example, PANIC DISORDER, various phobias (e.g., SPECIFIC PHOBIA, SOCIAL PHOBIA), and GENERALIZED ANXIETY DISORDER. Anxiety disorders have a chronic course, albeit waxing and waning in intensity, and are among the most common mental health problems in the United States. They may also occur as a result of the physiological effects of a medical condition, such as endocrine disorders (e.g., hyperthyroidism), respiratory disorders (e.g., chronic obstructive pulmonary disease), cardiovascular disorders (e.g., arrhythmia), metabolic disorders (e.g., vitamin B<sub>12</sub> deficiency), and neurological disorders (e.g., Parkinson's disease). OBSESSIVE-COMPULSIVE DISORDER and POSTTRAUMATIC STRESS DISORDER were traditionally considered anxiety disorders; however, they are increasingly considered, as in *DSM-5*, to be separate, if still related, entities.

**anxiety fixation** in psychoanalysis, the maintenance or continuation of an anxiety reaction from an earlier developmental stage into a later one.

**anxiety hierarchy** a series of graduated anxiety-arousing stimuli centering on a specific source of anxiety in a specific individual. It is used in the treatment of phobias by SYSTEMATIC DESENSITIZATION: Patients proceed along the hierarchy from the least threatening situation toward the most threatening situation.

**anxiety hysteria** in psychoanalysis, a neurosis in which the anxiety generated by unconscious sexual conflicts is expressed in phobic symptoms, such as an irrational fear of dirt or open spaces, and in physical disturbances that are conversion symptoms. The term is seldom used because it combines disorders that are now classified separately. See ANXIETY DISORDER; CONVERSION DISORDER. [defined by Sigmund FREUD]

**anxiety management** cognitive-behavioral, behavioral, or other techniques that aid in the reduction of anxiety, such as BIOFEEDBACK training, RELAXATION TECHNIQUES, or medication.

**anxiety neurosis** in psychoanalysis, a disturbance in which the most prominent symptoms are persistent anxiety and feelings of impending disaster, accompanied by such symptoms as difficulty in making decisions, insomnia, loss of appetite, and heart palpitations. This term is now seldom used: The current classification of chronic anxiety of this nature is GENERALIZED ANXIETY DISORDER. Also called **anxiety state**. See also ANXIETY DISORDER.

**anxiety object** in psychoanalysis, an object upon which

anxiety originally caused by another source is displaced. For example, a nonhuman animal may be feared because it represents the father who caused the original anxiety. See LITTLE HANS.

**anxiety–performance relationship** see AROUSAL–PERFORMANCE RELATIONSHIP.

**anxiety reaction** an emotional response characterized by marked apprehension and accompanied by somatic symptoms of tension.

**anxiety-relief response** in BEHAVIOR THERAPY, the repetition of reassuring or tranquilizing words (e.g., *calm*) in anxiety-provoking situations.

**anxiety scale** any of numerous assessment instruments designed to measure the severity of anxiety symptoms. An important example is the TAYLOR MANIFEST ANXIETY SCALE. Such scales usually take the form of self-report tests but can also be based on clinician ratings or actual performance.

**anxiety sensitivity** fear of sensations associated with anxiety because of the belief that they will have harmful consequences. For example, an individual with high anxiety sensitivity is likely to regard feeling light-headed as a sign of impending illness or fainting, whereas an individual with low anxiety sensitivity would tend to regard this sensation as simply unpleasant. Research indicates that anxiety sensitivity is a traitlike risk factor that has been linked to the development of PANIC ATTACKS and PANIC DISORDER. [defined in 1985 by U.S. clinical psychologists Steven Reiss and Richard J. McNally]

**anxiety state** **1.** see ANXIETY NEUROSIS. **2.** formerly, a traumatic neurosis precipitated by a wartime experience in which the ego-ideals of war conflict with customary ideals. [defined by Sigmund FREUD]

**anxiolytic** *n.* a drug used in the treatment of anxiety, mild behavioral agitation, and insomnia. Formerly called **minor tranquilizers**, anxiolytics can also be used as adjunctive agents in the treatment of depression, panic disorder, and several other disorders. The most widely used are the BENZODIAZEPINES. Other drugs, such as certain SSRIS, have also been shown to have anxiolytic effects. See also AZAPIRONE; SEDATIVE, HYPNOTIC, AND ANXIOLYTIC DRUG.

**anxious–ambivalent attachment style** see AMBIVALENT ATTACHMENT.

**anxious–avoidant attachment** **1.** in the STRANGE SITUATION, a form of INSECURE ATTACHMENT in which an infant explores only minimally and tends to avoid or be indifferent to the parent. **2.** an adult interpersonal style characterized by discomfort in being with others and a tendency to avoid intimate relationships with them. Also called **avoidant attachment style**, it is sometimes identified as taking two forms: DISMISSIVE ATTACHMENT and FEARFUL ATTACHMENT.

**anxious depression** a MAJOR DEPRESSIVE EPISODE accompanied by high levels of anxiety.

**anxious–resistant attachment** in the STRANGE SITUATION, a form of INSECURE ATTACHMENT in which an infant appears anxious in the parent's presence, distressed in the parent's absence, and angry upon the parent's return, often resisting contact with him or her.

**aortic arch syndrome** a disorder caused by progressive obliteration of the main branches of the aortic arch because of arteriosclerosis, aneurysm, or a related problem.

Usually only one or two of the branches are involved, affecting blood flow to a local area. If the carotid or vertebral arteries are involved, the brain will be affected. The patient may experience fainting spells, epilepsy-like seizures, temporary blindness, paralysis on one side of the body, aphasia, memory disturbances, or a combination of symptoms. A typical effect is the **carotid-sinus syndrome**, in which the patient faints after turning the head.

**aortic stenosis** see STENOSIS.

**AP 1.** abbreviation for ACTION POTENTIAL. **2.** abbreviation for advanced placement. See ADVANCED PLACEMENT EXAMINATIONS.

**APA 1.** abbreviation for AMERICAN PSYCHIATRIC ASSOCIATION. **2.** abbreviation for AMERICAN PSYCHOLOGICAL ASSOCIATION.

**APAGS** abbreviation for AMERICAN PSYCHOLOGICAL ASSOCIATION OF GRADUATE STUDENTS.

**APAP** *n.* see ACETAMINOPHEN.

**apareunia** *n.* the inability to perform sexual intercourse.

**apastia** *n.* fasting or abstinence from food.

**APA style** guidelines and standards for writing (e.g., grammar) and formatting (e.g., data display, headings) for students, instructors, researchers, and clinicians in the social and behavioral sciences, as collected in the PUBLICATION MANUAL OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION.

**apathy** *n.* lack of motivation or goal-directed behavior and indifference to one's surroundings. Apathy is commonly associated with severe depression or schizophrenia, but it also is a major behavioral symptom in Alzheimer's disease, Parkinson's disease, and other neurodegenerative disorders. —**apathetic** *adj.*

**apathy syndrome** **1.** the lack of motivation and interest displayed by many patients with Alzheimer's disease, Parkinson's disease, stroke, and such mental disorders as schizophrenia and severe depression. **2.** the pattern of emotional insulation (indifference, detachment) adopted by many prisoners-of-war and victims of catastrophes in an effort to maintain their stability.

**APDA** abbreviation for AMERICAN PARKINSON DISEASE ASSOCIATION, INC.

**aperiodic reinforcement schedule** a former name for VARIABLE-INTERVAL SCHEDULE.

**Apert syndrome** an inherited condition in which an abnormally shaped head due to premature closure of some of the cranial sutures (see CRANIOSYNOSTOSIS SYNDROME) is accompanied by intellectual disability and syndactyly. The syndactyly usually involves both hands and feet and typically results in fusion of the skin and bones, marked by "mitten hands" and "sock feet." Apert syndrome may be complicated by CROUZON SYNDROME (and called **Apert–Crouzon syndrome**), in which case fusion of the digits is partial. See also ACROCEPHALOSYNDACTYLY. [Eugène Apert (1868–1940), French pediatrician]

**aperture, draw, syntax model (ADS model)** a cognitive model in which ATTENTION is seen as having three principal characteristics: (a) *aperture*—attention is understood as a pathway comprised of multiple subpathways that open up for the processing of information according to specific domains of activity; (b) *draw*—attention involves a mechanism by which relevant stimuli are actively drawn



into processing (as opposed to irrelevant information being filtered out); and (c) *syntax*—attention involves a system of rules by which cues are recognized and assimilated and responses are initiated. [proposed in 2010 by U.S. philosopher and cognitive scientist Brian Bruya (1966– )]

**APF** abbreviation for AMERICAN PSYCHOLOGICAL FOUNDATION.

**Apgar score** an evaluation of newborn infants on five factors: skin color, heart rate, respiratory effort, reflexes, and muscle tone. The evaluation is typically performed at 1 minute and again at 5 minutes after birth to assess the physical condition of the infant and to determine quickly if he or she needs immediate medical care. Each factor is scored 0, 1, or 2, with a maximum total of 10 points. A score below 3 indicates that the infant is in severe distress; a score of 4 to 7 indicates moderate distress; and a score of 7 to 10 indicates that the infant's condition is normal. [developed in 1952 by Virginia Apgar (1909–1974), U.S. anesthesiologist]

**aphagia** *n.* inability to swallow or eat. —**aphagic** *adj.*

**aphakia** *n.* the absence of the lens from the eye, a condition that may be congenital or the result of disease, injury, or surgery. —**aphakic** *adj.*

**aphanisis** *n.* **1.** an obsolete term defined by British psychoanalyst Ernest Jones (1879–1958) to indicate total extinction of sexual desire. **2.** more broadly, a term defined by French psychoanalyst Jacques Lacan (1901–1981) to mean total extinction of self. [from Greek *aphanes*, “invisible”]

**aphasia** *n.* an acquired language impairment that results from brain damage typically in the left hemisphere. Common causes of damage include stroke, brain tumors, and cortical degenerative disorders (e.g., Alzheimer's disease). Traditionally, a distinction has been made between expressive and receptive forms of aphasia, whereby individuals with the former primarily have difficulty producing spoken and written language and those with the latter primarily have difficulty comprehending spoken and written language. A more contemporary distinction, however, is commonly made between **fluent aphasias**, characterized by plentiful verbal output consisting of well-articulated, easily produced, but inappropriate or meaningless utterances of relatively normal length and prosody (rhythm and intonation), and **nonfluent aphasias**, characterized by sparse, effortful utterances of short phrase length and disrupted prosody. Fluent aphasias are associated with posterior lesions that spare cortical regions critical for motor control of speech, whereas nonfluent aphasias are associated with anterior lesions that compromise motor and premotor cortical regions involved in speech production. Numerous types of aphasia exist, with eight classically identified: ANOMIC APHASIA, BROCA'S APHASIA, CONDUCTION APHASIA, GLOBAL APHASIA, MIXED TRANSCORTICAL APHASIA, TRANSCORTICAL MOTOR APHASIA, TRANSCORTICAL SENSORY APHASIA, and WERNICKE'S APHASIA. Also (but much less preferably) called **dysphasia**. —**aphasic** *adj.*

**aphemia** *n.* as originally defined by Paul BROCA, a MOTOR APHASIA with nonfluent speech but intact language functions, as evidenced by intact writing. It contrasts with BROCA'S APHASIA, in which writing is also disrupted.

**aphonia** *n.* loss of the voice resulting from disease of or damage to the larynx or vocal tract.

**aphrodisiac** *n.* any agent or substance that facilitates

sexual desire. Perfumes, foods such as raw oysters, and various drugs, particularly alkaloids such as YOHIMBINE, are thought to be aphrodisiacs.

**apical dendrite** the DENDRITE that extends from a PYRAMIDAL CELL to the outermost surface of the cerebral cortex. Compare BASAL DENDRITE.

**aplasia** *n.* the arrested development of a body tissue or organ.

**Aplysia** *n.* a genus of molluscs that have a very simple nervous system and are often used to study neurophysiology, especially the neurophysiology of learning and memory. [initially studied by Austrian-born U.S. neuroscientist Eric Kandel (1929– )]

**apnea (apnoea)** *n.* temporary suspension of respiration. If the **apneic period** is long, the heart may slow and electroencephalogram changes may occur. Apnea can occur during sleep (see SLEEP APNEA) and is also found in many disorders, such as epilepsy and concussion. —**apneic** *adj.*

**apo-** *prefix* away from.

**apodia** *n.* the condition of being born with only one foot or with no feet. See also ACHEIRIA.

**ApoE** abbreviation for APOLIPOPROTEIN E.

**apoenzyme** *n.* the protein component of an ENZYME. It must combine with a second component, a COENZYME, to make the enzyme functional.

**apolipoprotein E (ApoE)** a protein that may help break down BETA-AMYLOID. Individuals carrying a particular form of the ApoE gene, the ApoE4 allele, are more likely to develop Alzheimer's disease and other conditions that damage the nervous system.

**Apollonian** *adj.* describing a state of mind that is well ordered, rational, and harmonious (from **Apollo**, the god of prophecy, music, and healing in Greek mythology). This modern use of the term was originated by Friedrich NIETZSCHE, who drew a contrast between the Apollonian and the DIONYSIAN sides of human nature.

**apomorphine** *n.* a morphine derivative used as an expectorant and to induce vomiting. It is also used in the treatment of dyskinesias in Parkinson's disease and of erectile dysfunction.

**apoplexy** *n.* **1.** an obsolete term for a HEMORRHAGIC STROKE. **2.** hemorrhage into an organ, as in a pituitary apoplexy. —**apoplectic** *adj.*

**apoptosis** *n.* see PROGRAMMED CELL DEATH. —**apoptotic** *adj.*

**aposematic coloration** see WARNING COLORATION.

**a posteriori** denoting conclusions derived from observations or other manifest occurrences: reasoning from facts. Compare A PRIORI. [Latin, “from the latter”]

**a posteriori comparison** see POST HOC COMPARISON.

**apostilb** (symbol: asb) *n.* a unit of LUMINANCE equal to the luminance of a uniform diffuser emitting  $1/\pi$  cd/m<sup>2</sup>.

**apotemnophilia** *n.* **1.** a PARAPHILIA in which a person is sexually aroused at the idea of having a limb amputated. Compare ACROTOMOPHILIA. **2.** see BODY INTEGRITY IDENTITY DISORDER.

**APP** abbreviation for amyloid precursor protein. See BETA-AMYLOID.

**apparatus** *n.* **1.** any instrument or equipment used in an experiment or other research. **2.** in biology, a group of structures that perform a particular function. It may be microscopic, as in the intracellular GOLGI APPARATUS, or macroscopic, as in the VESTIBULAR APPARATUS.

**apparent** *adj.* **1.** seeming or illusory. **2.** in physics, denoting an observed state that is not in accordance with actual physical conditions. For example, **apparent motion** is a perception of motion induced by the motion of the observer rather than that of the observed entity. **3.** obvious or manifest.

**apparent distance** the perceived distance of an object from an observer. The VISUAL ANGLE subtended by the image of the object is a powerful but imperfect cue for the apparent distance of the object.

**apparent magnitude** the BRIGHTNESS of an object, which depends on its LUMINOSITY and its distance from the observer.

**apparent movement** an illusion of motion or change in size of a visual stimulus. Several types have been identified and labeled with Greek letters, among them the familiar **beta movement**, in which successive presentations of stationary stimuli across the visual field produce the perception of a single, smoothly moving stimulus, and **gamma movement**, the seeming expansion of an object when it is suddenly presented and contraction when withdrawn. Also called **apparent motion**.

**apparent size** the perceived size of a stimulus. This depends on many factors in addition to the size of the stimulus on the retina, most importantly the perceived distance from the observer to the object. See also SIZE CONSTANCY; SIZE CUE.

**apparition** *n.* **1.** a visual illusion that results from distortion of a perceived object. Often interpreted as threatening, apparitions may be associated with a neurological or toxic disorder, such as ALCOHOL-INDUCED PSYCHOTIC DISORDER. **2.** the perceived manifestation of a GHOST or spirit. See also MATERIALIZATION; PHANTASM. **3.** the act of becoming visible.

**appeal** *n.* in advertising, any aspect of a product or service that is highlighted in an attempt to arouse a sympathetic response from consumers. Appeals may be based on psychological studies of consumer desires or needs and may be as obvious as a practical package design or as subtle as an implied suggestion that the product might enhance the purchaser's sexual attractiveness. Advertising appeals also may be directed toward a specific type of consumer personality. For example, a product appeal for a "conservative family car" might be directed toward married businesspeople with young children, whereas an appeal for a "sexy sports car" might be directed toward younger or older men and women with fewer family responsibilities. Also called **product appeal**. —**appeal** *vb.*

**appearance and performance enhancing drug** see PERFORMANCE ENHANCING DRUG.

**appearance–reality distinction** the knowledge that the appearance of an object does not necessarily correspond to its reality. For example, a sponge shaped like a rock may look like a rock but it is really a sponge. Children younger than 3 may have difficulty making appearance–reality distinctions.

**appeasement behavior** actions by one nonhuman animal that reduce the likelihood of attack or threatening be-

havior from another. This may involve taking a submission posture, reducing apparent body size (e.g., by crouching), or using vocal signals typical of young animals.

**Appelt–Gerken–Lenz syndrome** see ROBERTS SYNDROME.

**apperception** *n.* **1.** the mental process by which a perception or an idea is assimilated into an individual's existing knowledge (APPERCEPTIVE MASS). See also TENDENTIOUS APPERCEPTION. **2.** the act or process of becoming conscious of a perception, so that it is recognized and understood. In apperceptive forms of VISUAL AGNOSIA, this ability is lost or impaired. —**apperceive** *vb.* —**apperceptive** *adj.*

**apperceptive mass** the previously acquired knowledge with which a new perception or idea must be assimilated if it is to be understood by the perceiver. [defined by German philosopher Johann Friedrich Herbart (1776–1841)]

**apperceptive visual agnosia** see VISUAL AGNOSIA.

**appersonation** *n.* a delusion in which the individual believes himself or herself to be another person and assumes the characteristics of that other person. Also called **appersonification**.

**appetate** *n.* a hypothetical area in the brain believed to regulate appetite and food intake. Although parts of the hypothalamus (see LATERAL HYPOTHALAMUS; VENTROMEDIAL NUCLEUS) and brainstem (see SOLITARY NUCLEUS) have been shown definitively to be involved in appetite and food intake, the idea of a single appetate is probably overly simplistic.

**appetite** *n.* any desire, but particularly one for food or one relating to the satisfaction of any physiological need. Appetite is influenced by learning and prior experience and thus can be highly flexible. See also APPETITIVE BEHAVIOR. —**appetitive** *adj.*

**appetite suppressant** any agent that reduces desire for food and thus controls body weight, including the amphetamines and other stimulants (e.g., PHENTERMINE, DIETHYLPROPION), SIBUTRAMINE, and serotonin agonists (fenfluramine, dexfenfluramine). Use of the latter compounds, particularly in combination with phentermine (so-called phen-fen), resulted in heart-valve defects, and this combination was removed from the market. Although appetite suppressants may result in short-term weight loss, there is no evidence that they achieve long-term weight reduction unless used in conjunction with a behavioral management program. Also called **anorectant**; **anorexiant**.

**appetitive behavior** **1.** an active searching process that precedes consummatory behavior (see CONSUMMATORY RESPONSE) and is indicative of desire. Influenced by learning and prior experience, it is highly flexible and—in MATING BEHAVIOR—helps to establish or maintain sexual interaction prior to copulation. **2.** feeding activity, which is influenced in part by the central nervous system, including areas of the brainstem and nuclei of the hypothalamus in the brain. Lesions of the VENTROMEDIAL NUCLEUS may result in excessive eating, whereas lesions of nuclei in the LATERAL HYPOTHALAMUS may cause deficient eating.

**appetitive conditioning** a type of CLASSICAL CONDITIONING in which the UNCONDITIONED STIMULUS is a positive reinforcer, such as food.

**appetitive stimulus** a positive reinforcer (see POSITIVE REINFORCEMENT) or an UNCONDITIONED STIMULUS that an organism will approach, the effectiveness of which can be

modified by deprivation. For example, hunger can increase the effectiveness of food as an appetitive stimulus.

**appetitive system** EXTRAVERSION as represented by an individual's relative sensitivity to positive or rewarding (appetitive) cues and stimuli and his or her processes for approaching them. Compare AVERSIVE SYSTEM. See also BEHAVIORAL APPROACH SYSTEM. [proposed by British psychologist Jeffrey Alan Gray (1934–2004)]

**applied behavior analysis (ABA)** the extension of B. F. SKINNER's behavioral principles (i.e., operant conditioning) to practical settings. Variations of applied behavior analysis may be used clinically (in the form of BEHAVIOR MODIFICATION or BEHAVIOR THERAPY) as treatment for abnormal or problematic behaviors.

**applied linguistics** the field in which linguistic theories and methods are put to practical use. Contexts in which this occurs include language teaching, the treatment of language disorders, and various aspects of ARTIFICIAL INTELLIGENCE.

**applied psychoanalysis** the application of psychoanalytic principles to the study of art, literature, religion, anthropology, biography, history, philology, and philosophy. Sigmund FREUD's own interpretations of Leonardo da Vinci, Moses, and Hamlet, as well as his studies of folklore and mythology, are prime examples.

**applied psychology** the application of the theories, principles, and techniques of psychology to practical concerns, such as problems of living or coping, education, vocational guidance, industry, ergonomics, consumer affairs, advertising, political campaigns, and environmental issues. It may be contrasted with theoretical psychology or academic psychology, in which the emphasis is on understanding for its own sake rather than on the utility of the knowledge.

**applied psychophysiology** the use or study of the principles and techniques of PSYCHOPHYSIOLOGY to improve health, performance, or quality of life. See also CLINICAL PSYCHOPHYSIOLOGY.

**applied relaxation** a technique in which clients are taught, in a stepwise fashion, to relax more and more rapidly over a series of sessions in order to master panic, anxiety, phobias, pain, and other symptoms. The goal is for clients to be able to relax in 20 to 30 seconds in situations in which their symptoms typically occur. See also PROGRESSIVE RELAXATION.

**applied research** studies conducted to solve real-world problems, as opposed to studies that are carried out to develop a theory or to extend basic knowledge. Examples include ACTION RESEARCH and EVALUATION RESEARCH. Compare BASIC RESEARCH.

**applied science** the use of scientific principles and theories to serve a practical human purpose rather than to extend knowledge for its own sake. Compare BASIC SCIENCE.

**applied sport psychology** the use or study of the use of SPORT PSYCHOLOGY to enhance or make consistent the performance of athletes.

**applied statistics** the use of statistical methods and procedures to understand data in psychology, sociology, economics, and other disciplines. Compare THEORETICAL STATISTICS.

**applied tension** a technique in BEHAVIOR THERAPY that focuses on changing physiological responses (e.g., low

blood pressure leading to fainting) by having the client practice muscle tensing and releasing during exposure to increasingly anxiety-evoking stimuli associated with a feared situation. The technique was developed and is still primarily used for blood, injury, and injection phobias.

**applied verbal behavior** see VERBAL BEHAVIOR THERAPY.

**apport** *n.* **1.** in SPIRITUALISM, the manifestation, allegedly by supernatural means, of physical objects during a seance. Such objects are regarded as signs or gifts from the spirits. See also MATERIALIZATION. **2.** an object produced in this way.

**appraisal** *n.* the cognitive evaluation of the nature and significance of a phenomenon or event. —**appraise** *vb.*

**appraisal dimension** any of the criteria that account for a person's evaluation of an interaction with the environment and the generation of an appropriate emotional response. Examples of appraisal dimensions include the goal relevance of an event, its stimulus novelty, its judged pleasantness or unpleasantness, and a judgment of one's COPING POTENTIAL in relation to this event. Different APPRAISAL THEORIES emphasize different appraisal dimensions. See also STIMULUS EVALUATION CHECKS.

**appraisal motive** see SELF-ASSESSMENT MOTIVE.

**appraisal theory** a group of theories stating that people's cognitive appraisals or evaluations of a situation determine the emotions they feel in response to the situation. See also COGNITIVE APPRAISAL THEORY.

**apprehension** *n.* **1.** uneasiness or dread about an upcoming event or the future generally. Also called **apprehensiveness**. **2.** the act or capability of grasping something mentally. Compare COMPREHENSION. —**apprehend** *vb.* —**apprehensible** *adj.* —**apprehensive** *adj.*

**apprehension span** the number of items that an individual can report from a single brief exposure to an array of items. Typically the number reported is four or five. Also called **span of apprehension**. See also SCOPE OF ATTENTION.

**apprehension-span test** a test in which participants report some aspect of a briefly presented array of items (e.g., letters). The WHOLE REPORT task requires participants to report as many letters as they can. Recent studies have used a PARTIAL REPORT task, in which individuals must report the presence of a particular letter among a group of distractor letters in the briefly flashed display.

**apprenticeship** *n.* a means by which a novice gains practical experience in a trade or profession, often through a formal program of instruction and supervision from an experienced practitioner or a mentor. See also MENTORING.

**approach** *n.* **1.** a move toward something (e.g., a stimulus, a goal). **2.** a particular method or strategy used to achieve a goal or purpose, for example, a psychodynamic approach in therapeutic practice.

**approach–approach conflict** a situation involving a choice between two equally desirable but incompatible alternatives. Also called **double-approach conflict**. See also APPROACH–AVOIDANCE CONFLICT; AVOIDANCE–AVOIDANCE CONFLICT.

**approach–avoidance conflict** a situation involving a single goal or option that has both desirable and undesirable aspects or consequences. The closer an individual

comes to the goal, the greater the anxiety, but withdrawal from the goal then increases the desire. See also **APPROACH–APPROACH CONFLICT**; **AVOIDANCE–AVOIDANCE CONFLICT**; **DOUBLE APPROACH–AVOIDANCE CONFLICT**.

**Approach Control Test** a test for simulation and assessment of air traffic control for management of aircraft approaching airports. It assesses the influence of stress factors, such as time pressures.

**approach coping** any strategy for managing a stressful event or situation in which a person actively focuses on the problematic event or situation. Approach strategies may be cognitive in nature (e.g., trying to see the positive side of the situation, considering several alternatives for handling the situation) or behavioral (e.g., trying to find out more about the situation, seeking help from other people who have had similar experiences, praying for guidance, and bargaining or compromising to get something positive from the situation). Although generally seen as more adaptive than **AVOIDANCE COPING**, approach strategies do have certain potential costs as well: The orientation toward threatening material can lead to increased distress and, when there is no possibility for changing the situation or for assimilating emotionally to it, nonproductive worry. [identified in 1986 by Susan H. Roth (1948– ), U.S. personality psychologist, and Lawrence J. Cohen (1958– ), U.S. clinical psychologist]

**approach gradient** the variation in the strength of a drive as a function of the organism's proximity to its goal. For example, a rat's goal-directed behavior increases in intensity as it nears its goal of food. The approach gradient appears less steep than the **AVOIDANCE GRADIENT**. [originally proposed by Neal E. MILLER]

**approach motivation** expectation of reward (e.g., a positive emotional experience), which is a condition for goal-directed behavior.

**approach response** any behavior that brings an organism closer to a stimulus. See **ADIENCE**.

**appropriate affect** an expression of mood or feeling that is in harmony with, or naturally indicative of, the accompanying thought, action, reaction, or verbal expression.

**appropriate death** the death a person would choose if given the opportunity. The concept draws attention to the differing needs and values of individuals in the terminal phase of life and challenges the assumption that a **GOOD DEATH** has the same meaning for all people. **PALLIATIVE CARE**, especially as given in **HOSPICES**, attempts to protect individuality and offers a communication process and caring environment to provide the maximum possible opportunity for the dying person to make personally meaningful decisions. [introduced by U.S. psychiatrist Avery D. Weisman]

**approximation** *n.* the process of obtaining a value that is at least close to the desired or actual value. For example, one might round a measurement to the nearest decimal place for ease of subsequent calculations. The degree of inaccuracy inherent to this process is known as **approximation error**.

**approximation conditioning** see **SHAPING**.

**appurtenance** *n.* in **GESTALT PSYCHOLOGY**, interaction or mutual influence between parts of a perceptual field so that the parts appear to belong together. [defined in 1935 by Kurt KOFFKA]

**apractagnosia** *n.* an impaired ability to organize, remember, and perform a sequence of movements or skilled motor activities or to analyze spatial relationships. The condition is due to lesions in the lower part of the occipital and parietal lobes of the brain.

**apraxia** *n.* loss or impairment of the ability to perform purposeful, skilled movements despite intact motor function and comprehension. The condition may be developmental or induced by neurological dysfunction and is believed to represent an impairment of the ability to plan, select, and sequence the motor execution of movements. There are several major types of apraxia, including **bucco-facial** (or **orofacial**) **apraxia**, involving difficulty performing skilled facial movements; **ideational apraxia**, involving difficulty carrying out in the proper order a series of acts that comprise a complex task; **ideomotor apraxia**, involving difficulty imitating actions or gesturing to command; **limb kinetic** (or **melokinetic**) **apraxia**, involving difficulty making precise, coordinated but individual finger movements; and **speech** (or **verbal**) **apraxia**, involving difficulty coordinating the movements necessary for speaking. See also **DEVELOPMENTAL APRAXIA OF SPEECH**. —**apraxic** *adj.*

**apraxia of gait** see **GAIT APRAXIA**.

**apraxia of speech** a speech-articulation disorder due to lack of coordination of the muscles used in speaking, in the absence of sensory loss or paralysis. Also called **apraxic dysarthria**. See also **DEVELOPMENTAL APRAXIA OF SPEECH**.

**apraxic agraphia** see **GRAPHOMOTOR APRAXIA**.

**A prime** (symbol:  $A'$ ) a measure of the sensitivity for correctly detecting or remembering a stimulus in a task or test. This measure is based on the nonparametric theory of signal detection, which does not make stringent assumptions about the distribution of responses. See **SIGNAL DETECTION THEORY**.

**a priori** denoting conclusions derived from premises or principles: deducing from prior assumptions. Compare **A POSTERIORI**. [Latin, "prior to"]

**a priori comparison** any examination in which two or more quantities are compared in accordance with plans established prior to conducting a research study. For example, even before data are collected, a researcher might hypothesize that two groups given personal instruction would show better mean performance on a task compared to those who receive only written instruction. Thus, he or she could decide in advance to compare the combined personal instruction groups to the written instruction groups. Also called **a priori contrast**; **planned comparison** (or **contrast**). Compare **POST HOC COMPARISON**.

**apriorism** *n.* in philosophy, the position that asserts the reality of **INNATE IDEAS** and the validity of knowledge that is not created by or dependent upon experience. It is thus the opposite of **EMPIRICISM**.

**aprosexia** *n.* inability to focus attention.

**aprosody** *n.* absence of the normal variations in the rhythm, stress, and pitch of speech, resulting in monotone speech. Unusual or abnormal variations are known as **dysprosody** (or **dysprosodia**). Also called **aprosodia**.

**APS 1.** abbreviation for **AMERICAN PAIN SOCIETY**. **2.** abbreviation for **AMERICAN PHILOSOPHICAL SOCIETY**. **3.** abbreviation for **AMERICAN PSYCHOSOMATIC SOCIETY**. **4.** abbreviation

for ASSOCIATION FOR PSYCHOLOGICAL SCIENCE, formerly called American Psychological Society.

**APsaA** abbreviation for AMERICAN PSYCHOANALYTIC ASSOCIATION.

**aptitude** *n.* the capacity to acquire competence or skill through training. **Specific aptitude** is potential in a particular area (e.g., artistic or mathematical aptitude); **general aptitude** is potential in several fields. Both are distinct from **ABILITY**, which is an existing competence.

**aptitude measure** a unit, instrument, or system for calculating one's capacity to acquire competence or skill through training, by comparison with a peer standard.

**Aptitude Research Project tests** see ARP TESTS.

**aptitude test** any assessment instrument designed to measure potential for acquiring knowledge or skill. Aptitude tests are thought of as providing a basis for making predictions for an individual's future success, particularly in an educational or occupational situation. In contrast, **ACHIEVEMENT TESTS** are considered to reflect the amount of learning already obtained.

**aptitude–treatment interaction (ATI)** a phenomenon in which people with certain attributes (e.g., personality traits, cognitive styles) respond better to one type of intervention, whereas people with different attributes respond better to another. For example, people with high spatial aptitudes might learn better when material is presented to them visually with charts and diagrams, whereas people with high verbal aptitudes might learn better when the same material is presented in words. The influence of personal characteristics on treatment outcome is of particular interest in educational and psychotherapeutic contexts, given the goal of finding the optimal instructional method or intervention for different types of people. [identified in 1977 by U.S. psychologists Lee J. CRONBACH and Richard Eric Snow (1936–1997)]

**AQ** abbreviation for ACHIEVEMENT QUOTIENT.

**AQS** abbreviation for ATTACHMENT Q-SET.

**Aquachloral** *n.* a trade name for CHLORAL HYDRATE.

**aqueduct of Sylvius** see CEREBRAL AQUEDUCT. [Franciscus **Sylvius** (1614–1672), Dutch anatomist]

**aqueous humor** the clear fluid that occupies the anterior and posterior chambers of the EYE. It is produced by the epithelium of the CILIARY PROCESSES, which are part of the CILIARY BODY.

**arachidonic acid** a long-chain, polyunsaturated fatty acid that is a component of cell membranes. When liberated from the membrane by the enzyme phospholipase A2, it is transformed into a series of compounds known as eicosanoids, which serve as precursors for prostaglandins, thromboxanes, anandamide, and leukotrienes.

**arachidonoylethanolamide (AEA)** *n.* see ENDOGENOUS CANNABINOID.

**2-arachidonoylglycerol (2-AG)** *n.* see ENDOGENOUS CANNABINOID.

**arachneophobia** *n.* see SPIDER PHOBIA.

**arachnoid** *n.* see ARACHNOID MATER.

**arachnoid granulations** a series of extensions of the middle layer of the meninges (ARACHNOID MATER) through

the outer layer (DURA MATER) that permits cerebrospinal fluid to drain into the bloodstream.

**arachnoid mater** the middle one of the three membranous layers (MENINGES) covering the surface of the brain and spinal cord, so called because its strands of tissue resemble spiders' webs. Also called **arachnoid**; **arachnoid membrane**.

**arachnophobia** *n.* see SPIDER PHOBIA.

**Arago phenomenon** the impaired sensitivity to light that exists in the center of the visual field under poor light conditions. It is presumably caused by the absence of RETINAL RODS in the FOVEA CENTRALIS. See SCOTOPIC VISION. [Dominique **Arago** (1786–1853), French physicist]

**Aran–Duchenne disease** see SPINAL MUSCULAR ATROPHY. [François **Aran** (1817–1861), French physician; Guillaume **Duchenne** (1806–1875), French neurologist]

**ARAS** abbreviation for ASCENDING RETICULAR ACTIVATING SYSTEM.

**arbitrary inference** a COGNITIVE DISTORTION in which a person draws a conclusion that is unrelated to or contradicted by the evidence.

**arbitrary matching to sample** a variation of MATCHING TO SAMPLE in which the correct alternative during the choice phase bears an arbitrary relationship to the stimulus presented as the sample. For example, after presentation of a blue stimulus as a sample, the correct choice may be to select a triangle. Also called **symbolic matching to sample**.

**arbitrary symbol** a linguistic SIGN (a written or spoken word) that bears no obvious resemblance to the thing or concept signified (see REFERENT). Because the vast majority of words in all languages are considered to fall into this category, arbitrariness is often cited as an important characteristic of human languages; this idea is of central significance in the structuralist approach to linguistics (see STRUCTURALISM). Compare ICONIC SYMBOL. See also PHONETIC SYMBOLISM.

**arbitration** *n.* a method of settling controversies in which the parties involved present their arguments and supporting information to an impartial agent, such as a judge or, in a labor dispute, an **arbitrator** or **arbitration board**. By mutual agreement, the arbiter's decision is final. This process is distinguished from MEDIATION, in which the outside agent (the MEDIATOR or conciliator) seeks to help the parties reach a mutually acceptable agreement. —**arbitrate** *vb.*

**arborization** *n.* a branching, treelike structure, as of the DENDRITES of a neuron. Arborization adds to the complexity of neurons and neuronal circuitry.

**archaic inheritance** presumed phylogenetic influences in the development of the individual's mental processes, such as the RACIAL MEMORY and ARCHETYPES of Carl JUNG's ANALYTIC PSYCHOLOGY. See PHYLOGENY.

**archetype** *n.* 1. a prototypical example of something or the original model from which something is held to derive. See also PROTOTYPE. 2. in the ANALYTIC PSYCHOLOGY of Carl JUNG, any one of a set of symbols representing aspects of the psyche that derive from the accumulated experience of humankind. These inherited symbols are held in the COLLECTIVE UNCONSCIOUS and serve as a frame of reference with which individuals view the world and as one of the foundations on which the structure of personality is built.

Examples are ANIMA, ANIMUS, PERSONA, SHADOW, supreme being, and hero. Also called **archetypal image**; **primordial image**. —**archetypal** *adj.*

**archicerebellum** *n.* the phylogenetically oldest part of the CEREBELLUM. Compare NEOCEREBELLUM; PALEOCEREBELLUM.

**archicortex** *n.* see ALLOCORTEX.

**Archimedes spiral** a simple spiral, formed by a curve whose tangent is maintained at a constant angle. A line drawing of an Archimedes spiral is often rotated to induce a MOTION AFTEREFFECT. [**Archimedes** of Syracuse (287–212 BCE), Greek philosopher and mathematician]

**archipallium** *n.* see ALLOCORTEX.

**architectonic structure** see CYTOARCHITECTURE.

**architectural constraints** the limitations imposed by the structure of the brain on the type of information that it can process and on the methods it uses for processing. See also CHRONOTOPIC CONSTRAINTS; REPRESENTATIONAL CONSTRAINTS.

**architectural determinism** the mistaken belief that the designed environment dictates behavior or directly causes certain behaviors to occur or not to occur. Design more typically facilitates or inhibits behavior, providing opportunities that influence the probability that certain behaviors will or will not occur. See also PERSON-ENVIRONMENT INTERACTION.

**architectural programming** determination of the performance requirements of buildings and other physical facilities prior to construction. Key considerations include the behavior expected to occur or not to occur in the space, user groups with special needs, and any trade-offs in the behavioral consequences of various design decisions. See also BEHAVIOR MAPPING; POSTOCCUPANCY EVALUATION.

**architectural psychology** the study of the role of the built environment in human behavior, a major subarea in ENVIRONMENTAL PSYCHOLOGY. Also called **design and behavior**.

**archival research** the use of books, journals, historical documents, and other existing records or data available in storage in scientific research. Archival research allows for unobtrusive observation of human activity in natural settings and permits the study of phenomena that otherwise cannot easily be investigated. A persistent drawback, however, is that causal inferences are always more tentative than those provided by laboratory experiments. Also called **archival method**.

**arch of Corti** see RODS OF CORTI.

**arc sine transformation** a means of changing proportional data to approximate a NORMAL DISTRIBUTION: Percentages that denote counts or frequencies are converted into a new set of scores whose distribution assumes a bell-shaped curve. The process minimizes variances across the different groups being compared and allows for the application of certain analytic techniques requiring that normality and other ASSUMPTIONS be met. Also called **angular transformation**; **arcsine transformation**.

**arctic hysteria** see PIBLOKTO.

**arcuate fasciculus** a bundle of nerve fibers linking the parts of the brain involved in the interpretation and control of speech (WERNICKE'S AREA and BROCA'S AREA, respectively). See also CONDUCTION APHASIA.

**arcuate nucleus 1.** an arc-shaped collection of neurons in the hypothalamus that produce hormones. **2.** any of various small groups of gray matter on the bulge of the medulla oblongata. They are extensions of neurons in the basal PONS and project to the cerebellum.

**arcuate zone of the brain** the bow-shaped portion of the RETICULAR FORMATION that extends from the spinal cord to the pons and includes the internal and external arcuate fibers and ARCUATE NUCLEI. The arcuate fibers are concentrated in the OLIVARY NUCLEUS of the medulla oblongata.

**areal linguistics** the study of languages and dialects within a defined geographical area and with an emphasis on regional influences. This approach differs from both LINGUISTIC TYPOLOGY and GENETIC LINGUISTICS.

**area postrema** a highly vascularized region of the brain located in the basal wall of the lateral VENTRICLE. Brain capillaries in this area form a relatively permeable region of the BLOOD-BRAIN BARRIER, enabling the passage of toxic substances to the underlying CHEMORECEPTOR TRIGGER ZONE, which elicits a vomiting response.

**area sampling** a method of selecting individuals for research in which specific neighborhoods, streets, homes, or other geographic areas are designated in advance as the source of participants.

**area under the curve (AUC)** in a graphical display of a DISTRIBUTION, the region between the plotted function and the horizontal x-axis. It is used in such calculations as determining the probability of the occurrence of specific values of a RANDOM VARIABLE.

**arecoline** *n.* a drug, related to MUSCARINE, that stimulates smooth muscles and glands that respond to postganglionic cholinergic agents. It is used in veterinary medicine to eliminate internal parasites and was formerly used in the management of schizophrenia.

**areflexia** *n.* an absence of motor reflexes.

**arginine vasopressin (AVP)** see VASOPRESSIN.

**argininosuccinic aciduria** a disorder resulting from an inborn error of metabolism that is characterized by the presence of argininosuccinic acid in the urine, blood, and cerebrospinal fluid and that sometimes leads to epilepsy and intellectual disability. Treatment is based on control of protein intake to prevent hyperammonemia. The trait is transmitted by an autosomal recessive gene, ASL, on chromosome 7.

**argot** *n.* unconventional jargon words or phrases (French, "slang"), generally of a particular group.

**argument** *n.* **1.** a sequence of propositions that provides logical reasons for accepting a CONCLUSION as valid or true. A single one of these statements is referred to as a PREMISE. **Argumentation** is the process of making an argument from premise to conclusion. **2.** a parameter on which the value of a mathematical FUNCTION depends. **3.** a disagreement involving varied, often opposite, positions. **4.** in the ELABORATION-LIKELIHOOD MODEL, a variable that under conditions of high elaboration influences persuasion by providing information about the central merits of an ATTITUDE OBJECT.

**argument framing** the extent to which a persuasive message presents information in a manner that stresses the positive consequences of adopting the advocated position

versus the negative consequences of failing to adopt the advocated position.

**argument quality** the extent to which an argument elicits primarily positive evaluative responses toward the ATTITUDE OBJECT rather than primarily negative ones. The greater the number of positive responses relative to negative responses, the higher the quality of the argument.

**argument quantity** the number of arguments included in a persuasive message.

**Argyll Robertson pupil** a pupil that is nonresponsive to bright light (see PUPILLARY REFLEX) or reacts slowly to drugs that induce pupil contraction but constricts with changes in focus (see ACCOMMODATION). It is a sign of several diseases of the central nervous system, such as a brain tumor, multiple sclerosis, and neurosyphilis. [Douglas Argyll Robertson (1837–1909), British ophthalmologist]

**arhinencephaly** *n.* see ARRHINENCEPHALY.

**ARI** abbreviation for ARMY RESEARCH INSTITUTE.

**Aricept** *n.* a trade name for DONEPEZIL.

**aripiprazole** *n.* an ATYPICAL ANTIPSYCHOTIC agent that is thought to exert its effects by acting both as a partial agonist of the dopamine D2 receptor and the serotonin 5-HT<sub>1A</sub> receptor and as an antagonist of the serotonin 5-HT<sub>2A</sub> receptor. It is used in the treatment of schizophrenia, bipolar I disorder, and irritability associated with autism and as an adjunct to SSRIs and SNRIs in treatment-resistant depression. U.S. trade name: **Abilify**.

**Aristotelian** *adj.* **1.** of or relating to the tradition of formal logic founded by ARISTOTLE and developed especially by the Scholastic philosophers of the Middle Ages (see SCHOLASTICISM). The term *Aristotelian* is often used to distinguish this tradition of logic from that of modern SYMBOLIC LOGIC. **2.** of or relating to Aristotle, his works, or his thought. In this more general sense, an Aristotelian approach, which gives primacy to particulars over UNIVERSALS and grants a higher value to empirical knowledge, is often contrasted with the approach of PLATONIC IDEALISM or NEOPLATONISM. —**Aristotelianism** *n.*

**Aristotle's illusion** the tactile perception that a single object is two objects when felt with the crossed index and middle fingers. [ARISTOTLE]

**arithmetic disability** a disturbance in the ability to calculate that is associated with neurological impairment. See ACALCULIA.

**arithmetic mean** see MEAN.

**Arizona v. Fulminante** a case resulting in an influential 1991 U.S. Supreme Court ruling that admitting into evidence a COERCED CONFESSION can be considered a harmless error and does not violate DUE PROCESS rights if the remaining evidence is considered to be sufficient to convict the defendant.

**ARM** acronym for ADVERTISING RESPONSE MODELING.

**armamentarium** *n.* **1.** the complete equipment of an institution, often a medical institution, necessary or sufficient for instruction, research, or practice. Such equipment includes books, supplies, and instruments. **2.** the complete materials necessary to undertake any field of activity.

**armchair psychology** a form of psychological inquiry based on introspection and rational processes without recourse necessarily to empirical observation. It may be con-

trasted with EMPIRICAL PSYCHOLOGY, in which the data come from laboratory procedures or controlled forms of observation and measurement. See RATIONAL PSYCHOLOGY; SPECULATIVE PSYCHOLOGY.

**Armed Forces Qualification Test (AFQT)** a screening test developed in 1950 by the Department of Defense to determine a person's eligibility for acceptance into U.S. military service by assessing his or her mental ability qualification. Originally consisting of 100 multiple-choice items measuring vocabulary, arithmetic, spatial relations, and mechanical ability, the AFQT was used as a stand-alone test until 1976, when the ARMED SERVICES VOCATIONAL ATTITUDE BATTERY became the official screening instrument of all U.S. military branches.

**Armed Services Vocational Aptitude Battery (ASVAB)** a TEST BATTERY developed in 1966 by the Department of Defense for use by the U.S. military as a standardized instrument for personnel selection and classification (specific job assignment); in 1976, it became the official testing instrument of all U.S. military branches. It underwent a major revision in 2002 and currently consists of nine (or 10, if taken on the computer as opposed to the paper-and-pencil version) timed multiple-choice tests in the areas of word knowledge, paragraph comprehension, arithmetic reasoning, mathematics knowledge, general science, auto and shop information, mechanical comprehension, electronics information, and assembling objects. The first four tests are used to determine eligibility for service (see ARMED FORCES QUALIFICATION TEST); the remainder are used to determine interests and aptitudes. Although sometimes administered to high school students to assist in career planning, the ASVAB is a required part of the application process for all potential military recruits.

**armodafinil** *n.* see MODAFINIL.

**AR model** abbreviation for AUTOREGRESSIVE MODEL.

**armoring** *n.* a defense mechanism used to protect oneself by BLOCKING one's experience and expression of life-affirming emotions (sadness, joy, anger, grief, and fear).

**Army Alpha Test** see ARMY TESTS.

**Army Beta Test** see ARMY TESTS.

**Army General Classification Test (AGCT)** see ARMY TESTS.

**Army Research Institute (ARI)** the U.S. Army Research Institute for the Behavioral and Social Sciences, which has its headquarters in Alexandria, Virginia, and opened in 1939. Its function is to maximize combat effectiveness by means of research in the acquisition, development, training, and utilization of soldiers in military forces. It conducts basic, exploratory, and advanced research and development.

**Army tests** group intelligence tests for military personnel, developed by Lewis M. TERMAN, Robert M. YERKES, and others and used by the U.S. Army beginning in World War I. The **Army Alpha Test (Alpha test or examination)** was a verbal test, measuring such skills as ability to follow directions. The **Army Beta Test (Beta test or examination)** presented nonverbal problems to illiterate subjects and recent immigrants who were not proficient in English. Both the Alpha and Beta tests were replaced at the outbreak of World War II by the 150-item **Army General Classification Test (AGCT)**, designed to measure verbal comprehension, quantitative reasoning, and spatial perception and used to classify inductees according to their ability to learn mili-

tary duties. The AGCT was itself replaced in 1950 by the ARMED FORCES QUALIFICATION TEST.

**Arnold–Chiari malformation** a congenital deformity in which the MEDULLA OBLONGATA and CEREBELLUM protrude through the foramen magnum (see FORAMEN), so that the cerebellum overlaps the top of the spinal cord. HYDROCEPHALUS and MENINGOMYELOCELE are commonly associated with the different types of the deformity. [Julius **Arnold** (1835–1915), German pathologist; Hans **Chiari** (1851–1916), Austrian pathologist]

**ARO** abbreviation for ASSOCIATION FOR RESEARCH IN OTOLARYNGOLOGY.

**aromachology** *n.* the field of scientific study that attempts to specify the relationships between psychology and fragrance technology. The focus is on temporary effects of stimuli mediated by the olfactory pathways and moderated by cognition.

**aromatase** *n.* an enzyme that converts many male sex hormones (ANDROGENS) into female sex hormones (ESTROGENS). See also AROMATIZATION HYPOTHESIS.

**aromatherapy** *n.* a type of therapy purported to improve psychological and physical health through the use of selected essential oils extracted from seeds, herbs, flowers, fruits, and trees. The fragrances of these oils are inhaled or the oils themselves are applied topically, using compresses, baths, or massages, in an effort to induce relaxation, reduce stress and emotional distress, and enhance well-being. Evidence supporting the effectiveness of aromatherapy is largely inconclusive. See also COMPLEMENTARY AND ALTERNATIVE MEDICINE.

**aromatic** *adj.* in the ZWAARDEMAKER SMELL SYSTEM, denoting an odor quality smelled in spices and camphor.

**aromatic L-amino acid decarboxylase** see DOPA DECARBOXYLASE.

**aromatization hypothesis** the hypothesis that, in some rodents, testicular ANDROGENS enter the brain and are converted there into ESTROGENS by the action of the aromatase enzyme contained in neurons therein in order to masculinize the developing nervous system.

**arousal** *n.* **1.** a state of physiological activation or cortical responsiveness, associated with sensory stimulation and activation of fibers from the RETICULAR ACTIVATING SYSTEM. **2.** a state of excitement or energy expenditure linked to an emotion. Usually, arousal is closely related to a person's appraisal of the significance of an event or to the physical intensity of a stimulus. Arousal can either facilitate or debilitate performance. See also CATASTROPHE THEORY. —**arouse** *vb.*

**arousal-boost mechanism** any steadily increasing degree of general arousal associated with or produced by contact with a stimulus that gives rise to a measurable hedonic (pleasure) effect. For example, a person listening to a piece of music might find it pleasurable precisely for the heightened anticipation induced by its harmonic structure. Compare AROUSAL-REDUCTION MECHANISM. [proposed in 1967 by Daniel E. BERLYNE as part of his theory of positive hedonic value as a psychological effect of art]

**arousal jag** an increase of arousal followed by a more or less sudden decrease, often accompanied by laughter as a release of tension. The abrupt fall from elevated levels of arousal to a lower, more appropriate level is thought to produce a pleasurable response. Common experiences that can

produce an arousal jag include a roller-coaster ride or watching a scary movie. [introduced in 1970 by Daniel E. BERLYNE]

**arousal level** the extent to which an organism is alert to stimuli.

**arousal–performance relationship** the pattern of association between cognitive or physiological arousal (or both) and achievement at physical or cognitive tasks. Also called **anxiety–performance relationship**. See CATASTROPHE THEORY; INVERTED-U HYPOTHESIS; REVERSAL THEORY.

**arousal phase** see SEXUAL-RESPONSE CYCLE.

**arousal potential** the capability of a stimulus to induce arousal. According to Daniel E. BERLYNE, preference for a work of art is due to the amount of general arousal it produces, which derives from its PSYCHOPHYSICAL PROPERTIES (e.g., intensity), COLLATIVE PROPERTIES (e.g., novelty), and ecological properties (meaningfulness, or signal value). See also ISOHEDONIC TRAP.

**arousal-reduction mechanism** any stimulus or inhibitory reaction that decreases the degree of arousal of an individual after it has reached an uncomfortably high level. According to Daniel E. BERLYNE, a sharp increase in arousal can have unpleasant or aversive effects, but an arousal-reduction mechanism can produce positive hedonic value by lowering the arousal curve. The mechanism may have a natural inhibitory effect on central nervous system circuits, or it may result from a stimulus that conveys a sense of harmony or CONCINNITY. Compare AROUSAL-BOOST MECHANISM.

**arousal regulation** the controlling of cognitive and physiological activation using cognitive behavioral methods. See AUTOGENIC TRAINING; IMAGERY CUE; PROGRESSIVE RELAXATION.

**arousal system** a diffuse system of nerve cells that controls arousal by activating both the central nervous system and the autonomic nervous system. A principal component is the RETICULAR FORMATION.

**arousal theory 1.** the theory that the physical environment can affect arousal levels by stimulation and by stress created when psychological or physical needs are not met. Arousal increases when personal space is diminished (see CROWDING) or when people are subjected to noise, traffic congestion, or other adverse conditions. **2.** see ACTIVATION THEORY OF EMOTION.

**arousal training** a technique in BEHAVIOR THERAPY that teaches clients to detect levels of physiological arousal and then to enhance or reduce these levels depending on therapeutic goals. This technique is often used in ANGER CONTROL THERAPY and BEHAVIORAL SEX THERAPY.

**arousal transfer** see EXCITATION-TRANSFER THEORY.

**arpeggio paradox** the apparent refutation of the stimulus–response view of behavior patterns that is provided by the speed at which accomplished pianists play arpeggios. Key strikes are too fast for nerve conduction to the brain to occur between them, so that one strike cannot serve as a stimulus for the next.

**ARP tests** Aptitude Research Project tests: tests of DIVERGENT THINKING produced by the Southern California Aptitude Research Project. Test items include writing a series of words containing a specified letter (word fluency), writing titles for short-story plots (ideational fluency, originality), writing words similar in meaning to a given word (associa-



tional fluency), writing sentences containing words beginning with given letters (expressional fluency), and listing different consequences of a hypothetical situation, such as people no longer needing sleep (see CREATIVITY MEASUREMENT; TORRANCE TESTS OF CREATIVE THINKING). These tests received considerable attention from intelligence researchers in the 1960s and 1970s but less since then, largely because the STRUCTURE OF INTELLECT MODEL, which they were designed to operationalize and test, has become much less popular. [devised by Joy Paul GUILFORD and associates in the 1950s to 1980s]

**arranged marriage** a marriage planned and contracted by the parents or other relatives of the partners or by significant figures (e.g., elders) in the partners' culture or social group. In cultures in which arranged marriages are the norm and in contrast to the concept of the "love match," marriage is typically seen as the union of two kinship groups and not merely of two individuals.

**array** *n.* any ordered arrangement of data, particularly a two-dimensional grouping of data into rows and columns. The following listing of students' scores on a test is an example of a simple array:

Student A	55
Student B	76
Student C	81
Student D	82
Student E	89
Student F	90
Student G	90
Student H	90
Student I	94
Student J	98

The concept may be extended to more than two dimensions.

**arrested testis** see CRYPTORCHIDISM.

**arrest reaction** a behavioral response, usually studied in cats, characterized by sudden immobility, or "freezing." The arrest reaction can be produced by electrically stimulating various areas of the brain. See also STARTLE RESPONSE.

**arrhinencephaly (arhinencephaly)** *n.* a congenital absence of the RHINENCEPHALON, the part of the brain that includes the olfactory bulbs, tracts, and other structures associated with the sense of smell.

**arrhythmia** *n.* any variation from the normal rhythm of the heartbeat. Kinds of arrhythmia include **tachycardia**, a rate above 100 beats per minute; **bradycardia**, a rate of less than 60 beats per minute; premature beats; **atrial flutter**, in which an upper chamber contracts up to 400 times per minute; and **heart block**, in which the heart fails to contract because of the interruption or delay of an electrical stimulus needed to trigger the contraction. —**arrhythmic** *adj.*

**arrowhead illusion** see MÜLLER-LYER ILLUSION.

**ART** acronym for ASSISTED REPRODUCTIVE TECHNOLOGY.

**Artane** *n.* a trade name for TRIHEXYPHENIDYL.

**arterial circle** see CIRCLE OF WILLIS.

**arterio-** *combining form* arteries.

**arteriography** *n.* see ANGIOGRAPHY.

**arteriole reaction** a response controlled by the AUTONOMIC NERVOUS SYSTEM and marked by a change in the diameter of the arterioles, which control the flow of blood from the arteries to the capillaries. Smooth muscle in the walls of the arterioles is particularly sensitive to sympathetic nerve impulses and may react to anger, fear, or other emotions by producing dramatic changes of blood pressure.

**arteriopathia hypertonica** a form of arterial degeneration associated with hypertension. The muscle and elastic tissue of the walls of the arterial system increase and form layers that are eventually replaced by connective-tissue fibers. The condition can be both a cause and an effect of hypertension, leading to cerebrovascular accidents (i.e., strokes) if not controlled by medication.

**arteriosclerosis** *n.* a group of diseases characterized by hardening and loss of elasticity of the walls of the arteries. A common type is ATHEROSCLEROSIS. —**arteriosclerotic** *adj.*

**arteriovenous malformation (AVM)** an abnormal, congenital tangle of arteries and veins that are directly connected and lack intervening capillaries. When such malformations occur in the brain, they can cause mild to severe brain damage and result in a range of neurological symptoms.

**arteritis** *n.* inflammation of an artery or arteries. A common form is **temporal** (or **giant cell**) **arteritis**, a chronic disease, usually in older people, that largely involves the carotid arterial system, especially the arteries of the temple and scalp. It is marked by the appearance of giant, multinucleate cells and granulomas in the affected arteries. Symptoms include severe temporal-area headaches on both sides and visual disturbances, which may result in loss of sight in one eye. See also PANARTERITIS.

**arthritis** *n.* inflammation of a joint or joints, causing pain, swelling, and stiffness. A potentially severe and disabling form is **rheumatoid arthritis**, an autoimmune disorder (see AUTOIMMUNITY). Arthritis can be chronic, recurrent, and debilitating; psychosocial effects can include lifestyle changes, stress on personal relationships, and depression. —**arthritic** *adj.*

**arthro-** (**arthr-**) *combining form* joints.

**arthrogryposis multiplex congenita** a group of congenital nonprogressive conditions characterized by multiple joint contractures (stiff joints) and abnormal muscle development. Symptoms vary greatly in range and severity. In some cases, only a few joints may be affected and the range of motion may be nearly normal. In most cases, the hands, wrists, elbows, shoulders, hips, feet, and knees are affected. In the most severe cases, nearly every joint in the body may be involved, including those of the jaw and back. The joint contractures are often accompanied by muscle weakness, which may further limit movement. The disorder is thought to have a genetic cause in 30% of cases and is also associated with decreased movement in utero, connective tissue disorders, or maternal illness. Treatment focuses on the specific findings in each individual and may include physical therapy, removable splints, exercise, and surgery. Also called **arthrogryposis**; **Guérin-Stern syndrome**.

**arthrometer** *n.* see GONIOMETER.

**arthropathy** *n.* any inflammatory, neuropathic, or other disease involving a joint.

**article** *n.* in linguistics, a DETERMINER that limits a noun with respect to its definiteness and number (e.g., *a*, *the* in English) and with respect to its gender in many Romance languages (e.g., *el*, *la* in Spanish; *le*, *la* in French). See DEFINITE ARTICLE; INDEFINITE ARTICLE.

**articular sensation** a sensation derived from the position of the joints.

**articulation** *n.* **1.** the shaping and production of the sounds required for intelligible speech. Articulation is a complex process that involves accuracy in the placement of the apparatus of the VOCAL TRACT, timing, direction of movements, force expended, speed of response, and neural integration of all actions. Compare MISARTICULATION. **2.** a clearly articulated sound or utterance. **3.** a joint between bones, which may be fixed or movable. **4.** in Gestalt psychology, the level of complexity within a structure. —**articulate** *vb.*

**articulation disorder** any disorder of speech involving the substitution, omission, distortion, or addition of speech sounds (PHONEMES). See also DYSARTHRIA; PHONOLOGICAL DISORDER; SPEECH AND LANGUAGE DISORDER.

**articulation index** an index used to measure SPEECH INTELLIGIBILITY within an operational environment. It reflects the degree of separation between speech and background or other system noise.

**articulation test** **1.** the phonetic analysis and recording of the speech of an individual with faulty sound production according to such criteria as developmental sequence, correct placement of the ARTICULATORS, and intelligibility. **2.** in audition, a hearing test designed to measure the intelligibility of speech.

**articulator** *n.* any of the elements of the vocal tract (e.g., lips, tongue, soft palate) that are involved in articulation, that is, in the shaping and production of speech sounds. Some authorities include the cheeks, larynx, uvula, alveolar ridge, nose, and teeth as articulators.

**articulatory apraxia** see DEVELOPMENTAL APRAXIA OF SPEECH.

**articulatory control process** see PHONOLOGICAL LOOP.

**articulatory loop** see PHONOLOGICAL LOOP.

**articulatory phonetics** the branch of PHONETICS concerned with the relationship between the physiology of the articulatory mechanisms in human beings and the physical properties of human speech sounds. Compare ACOUSTIC PHONETICS.

**articulatory rehearsal system** see PHONOLOGICAL LOOP.

**articulatory store** **1.** a component of short-term memory that retains auditory information based on the motor systems involved in pronouncing items, rather than on how they sound. Compare ACOUSTIC STORE. **2.** see PHONOLOGICAL LOOP.

**articulatory suppression** a method used to inhibit subvocal rehearsal of items in a memory test or experiment by requiring the participant to perform a distracting verbal task, such as counting or naming, during the RETENTION period.

**artifact** *n.* **1.** an experimental finding that is not a reflection of the true state of the phenomenon of interest but rather is the consequence of a flawed design or analytic error. For example, characteristics of the researcher (e.g., expectations, personality) or the participant (e.g., awareness of the researcher's intent, concern over being evaluated) are common sources of artifacts. See also CONFOUND; DEMAND CHARACTERISTICS. **2.** any manufactured object, particularly a product of historical significance.

**artificial consciousness** see MACHINE CONSCIOUSNESS.

**artificial insemination (AI)** the use of medical or surgical techniques to achieve conception by introducing sperm into the female reproductive system. In humans, this is done by introducing sperm collected from a woman's partner or from an anonymous donor (hence called **donor insemination**) into the vagina or through the cervical opening directly into the uterus. As with intercourse, artificial insemination may need to be done more than once for pregnancy to occur. It is usually scheduled to coincide with the days of ovulation to maximize success.

**artificial intelligence (AI)** a subdiscipline of computer science that aims to produce programs that simulate human intelligence. AI researchers often develop very high-level computer languages for this purpose, such as LISP, PROLOG, and SMALLTALK. There are many branches of AI, including ROBOTICS, computer vision, machine learning, game playing, and EXPERT SYSTEMS. AI has also supported research in other related areas, including COGNITIVE SCIENCE and COMPUTATIONAL LINGUISTICS. See also MACHINE CONSCIOUSNESS; TURING TEST.

**artificialism** *n.* the assumption that anything that exists must have been made by a conscious entity, such as God or a human being, who is directly responsible for its qualities and movements. Jean PIAGET, who introduced the term, drew a contrast between artificialism and ANIMISM, which assumes that entities have an innate power or energy to direct their movements and determine their ultimate nature. Both assumptions are characteristic of children in the PRE-OPERATIONAL STAGE of development. —**artificialist** *adj.*

**artificial language** any language or languagelike system that is not a NATURAL LANGUAGE. The category includes invented languages, such as Esperanto, and the various languages used in computer programming; the **formal languages** of logic and mathematics are also sometimes included. In linguistics and psycholinguistics, artificial languages are sometimes invented to simulate or to violate certain aspects of natural-language rules.

**artificial life** a research area of ARTIFICIAL INTELLIGENCE in which computer-based systems exhibit behavioral characteristics of living systems. Often constructed using CELLULAR AUTOMATA, these systems fall into three categories depending on the approach: software (simulators), hardware (robotics), and wetware (synthetic DNA). This research area often attempts to simulate the effects of communication and other society-based skills on survival.

**artificial pupil** an artificial aperture that limits the amount of light entering the eye.

**artificial selection** human intervention in animal or plant reproduction to improve the value or utility of succeeding generations. Compare NATURAL SELECTION.

**arts and crafts** creative activities that involve skilled hand fabrication, such as painting, weaving, woodworking, or leatherworking. Arts and crafts are often used in re-

habilitation programs as directed by recreational or occupational therapists. See also ART THERAPY.

**art test** a test designed to identify special abilities in the fine arts (e.g., painting, architecture), to assess creativity in the arts, or to evaluate art productions. A variety of techniques are utilized for these different purposes, which include comparing the individual's judgment of pictures with that of experts, reproducing an object from memory, and identifying mechanical or judgment errors in a standard drawing.

**art therapy** the use of artistic activities, such as painting and clay modeling, in psychotherapy and rehabilitation. The process of making art is seen as healing, an experience that provides the opportunity to express oneself imaginatively, authentically, and spontaneously; over time, this process can lead to personal fulfillment, emotional reparation, and transformation. The products made in art therapy are seen as a means of symbolic communication and a vehicle for developing new insights and understandings, resolving conflicts, solving problems, and formulating new perceptions to achieve positive changes, growth, and rehabilitation.

**arugamama** *n.* see MORITA THERAPY.

**ASA 1.** abbreviation for acetylsalicylic acid. See ASPIRIN. **2.** abbreviation for ACOUSTICAL SOCIETY OF AMERICA.

**ASA model** abbreviation for ATTRACTION–SELECTION–ATTRITION MODEL.

**asana** *n.* a YOGA posture or position. Each asana is said to have both physical and psychological effects that may be therapeutic or cathartic.

**asapholia** *n.* mumbled or indistinct speech.

**asb** symbol for APOSTILB.

**ASC** abbreviation for ALTERED STATE OF CONSCIOUSNESS.

**ascendancy** *n.* a personality trait involving a desire to be prominent in group situations, to assert oneself, and to acquire positions of authority over others. Traditional paper-and-pencil measures of ascendancy can predict an individual's emergence as the leader in small groups. Also called **ascendancy**. See also DOMINANCE. —**ascendant** *adj.*

**ascendancy–submission** see DOMINANCE–SUBMISSION.

**ascending–descending series** in psychophysics, the two sets of stimuli—one of increasing magnitude, one of decreasing magnitude—used in the METHOD OF LIMITS. In the ascending series, the stimulus, initially below threshold, is increased incrementally until it exceeds threshold; in the descending series, the initial stimulus exceeds threshold and is decreased incrementally until it is below threshold. This procedure controls for HABITUATION and PERSEVERATION errors.

**ascending pathway 1.** a route formed by nerve fibers that carry nerve impulses toward the brain from lower levels of the nervous system. **2.** see ASCENDING TRACT.

**ascending reticular activating system (ARAS)** the pathways that transmit nervous impulses from the RETICULAR FORMATION of the midbrain up through the thalamus to all parts of the cerebral cortex; the ARAS regulates sleep and sleep–wake cycles.

**ascending tract** a bundle of nerve fibers that carries sensory inputs through the spinal cord toward the brain.

Also called **ascending pathway**. Compare DESCENDING TRACT.

**ascertainment bias** error in selecting individuals or units for a sample, such that those units selected are not representative of the relevant population. For example, a medical researcher who studies a sample of patients that omits certain types of people who have the disorder of interest is likely to obtain results having an ascertainment bias. The term is often preferred over SAMPLING BIAS in clinical contexts.

**asceticism** *n.* a character trait or lifestyle characterized by simplicity, renunciation of physical pleasures and worldly goods, social withdrawal, and extreme self-discipline. —**ascetic** *adj.*

**Asch situation** an experimental paradigm used to study conformity to group opinion. Participants make judgments as part of a group of confederates who make errors deliberately on certain trials. The extent to which participants publicly agree with the erroneous group judgment or resist the pressure to do so and remain independent provides a measure of conformity. [Solomon ASCH]

**ASCM** abbreviation for ADAPTIVE STRATEGY CHOICE MODEL.

**ascorbic acid** the chemical name for vitamin C, a nutrient found in many fruits and vegetables, particularly citrus fruits (see VITAMIN). Unlike most mammals, primates cannot make ascorbic acid, so they must obtain it from foods. Ascorbic acid aids formation of connective tissue and prevents oxidation of cellular components. Deficiency can result in scurvy (marked by bleeding gums and delayed wound healing) and neurological disorders.

**ascriptive responsibility** the judgment that an individual who has committed an illegal act can be ascribed CRIMINAL RESPONSIBILITY and should therefore be punished. Compare DESCRIPTIVE RESPONSIBILITY.

**ASD 1.** abbreviation for ACUTE STRESS DISORDER. **2.** abbreviation for AUTISM SPECTRUM DISORDER.

—**ase** *suffix* an enzyme (e.g., TRANSFERASE).

**A\* search** (pronounced “A star”) a type of BEST-FIRST SEARCH in which “best” for any state is measured by the distance that state is from the start state plus the heuristic estimate of the quality of that state. The heuristic estimate must be less than or equal to the actual cost of going from that state to a goal state.

**asemia** *n.* see ASYMBOLIA.

**asenapine** *n.* an ATYPICAL ANTIPSYCHOTIC agent of the dibenzo-oxepino pyrrole class that is thought to exert its effects by acting as a dopamine D2 and serotonin 5-HT<sub>2A</sub> receptor antagonist. It is used in the treatment of schizophrenia and, alone or as adjunctive therapy, for acute treatment of manic or mixed episodes of bipolar I disorder. U.S. trade name: **Saphris**.

**Asendin** *n.* a trade name for AMOXAPINE.

**ASEP** abbreviation for AMERICAN SPORT EDUCATION PROGRAM.

**aseptic meningitis** see MENINGITIS.

**asexual** *adj.* **1.** lacking sexual characteristics or drive. **2.** capable of reproduction without fertilization. **Asexual reproduction** occurs in many plants and in certain animal species, for example, by budding or by forming an entirely

new individual from each separate part after it spontaneously breaks up (fragmentation). —**asexuality** *n.*

**Asian American** a citizen or resident of the United States whose ancestry, at least in part, can be traced to the Far East, Southeast Asia, or the Indian subcontinent.

**Asian influenza** a type of influenza caused by the H2N2 strain of influenza virus, which first appeared in north China in 1957. The mortality rate was not high, but the infection was complicated by severe staphylococcal pneumonia in many cases. Some patients also developed postinfluenza asthenia with psychogenic factors.

**as-if hypothesis** an unproven hypothesis that is treated “as if” it were correct, usually because of its value as an explanatory model or its utility as a basis for experiment and research. Many of the hypothetical entities postulated by psychology and psychoanalysis are of this nature.

**as-if personality** a type of personality style in which the individual behaves as if well adjusted but, in fact, is doing only what is expected and is unable to behave in a genuine or spontaneous manner. This condition has reportedly been observed in individuals with schizophrenia before they exhibit psychotic symptoms, such as hallucinations or delusions. [first described in 1942 by U.S. psychologist Helene Deutsch (1884–1982)]

**-asis** *suffix* see **-IASIS**.

**asitia** *n.* repulsion at the thought or sight of food. See also **ANOREXIA**.

**ASL** abbreviation for **AMERICAN SIGN LANGUAGE**.

**asocial** *adj.* **1.** declining to engage, or incapable of engaging, in social interaction. **2.** lacking sensitivity or regard for social values or norms. —**asociality** *n.*

**asomatognosia** *n.* lack of sensory awareness of one's body. Individuals with this disorder may be unable to recognize parts of their body as their own. Asomatognosia affecting one side of the body is known as **hemiasomatognosia**. See **NEGLECT**.

**asonia** *n.* see **TONE DEAFNESS**.

**aspartate** *n.* an amino acid neurotransmitter that is excitatory at many synapses.

**aspartate aminotransferase** an enzyme that may be involved in the cause of muscular dystrophy. Increased levels in the blood are a clinical sign of this disease and also of damage to the heart and liver, as in cases of jaundice or myocardial infarction. The former name of this enzyme was **glutamic-oxaloacetic transaminase**. Also called **aspartate transaminase**.

**aspect** *n.* see **TENSE**.

**Asperger's disorder** a disorder associated with varying degrees of deficits in social and conversational skills, difficulties with transitions from one task to another or with changes in situations or environments, and preference for sameness and predictability of events. Obsessive routines and preoccupation with particular subjects of interest may be present, as may difficulty reading body language and maintaining proper social distance. Some people with Asperger's disorder have reported oversensitivity to sounds, tastes, smells, and sights, but the nature of such sensitivities is not well researched. In contrast to **AUTISM**, language skills develop, and there is no clinically significant delay in cognitive or adaptive functioning other than in social interactions. By definition, people with Asperger's disorder have

an IQ in the normal to superior range, and some may exhibit exceptional specific skills or talents. Classified as a **PERVASIVE DEVELOPMENTAL DISORDER** in **DSM-IV-TR**, Asperger's disorder has been subsumed into **AUTISM SPECTRUM DISORDER** in **DSM-5** and is no longer considered a distinct diagnosis. Also called **Asperger's syndrome**. [described in 1944 by Hans Asperger (1906–1980), Austrian psychiatrist]

**aspermia** *n.* failure of the male reproductive organs to produce or emit semen. Also called **aspermatisms**.

**asphyxia** *n.* a condition in which the level of oxygen in the blood falls below normal while the proportion of carbon dioxide increases. It may be associated with labored or difficult breathing and marked by signs of pallor or cyanosis. Causes include choking, drowning, electric shock, inhaled smoke or toxic fumes, or disease or injury involving the respiratory system.

**asphyxophilia** *n.* arousal and enjoyment obtained from being unable to breathe during sexual activity. As a **PARAPHILIA**, this may involve being choked or strangled by a partner. Compare **AUTOEROTIC ASPHYXIA**.

**aspiration** *n.* **1.** an ambition, goal, or any kind of desired end that might be achieved through personal effort. **2.** in phonetics, the articulation of a stop consonant with a sudden plosive burst of air. In English, the consonants *p*, *t*, and *k* are aspirated at the beginning of a syllable but not at the end or in combination with certain other consonants (see **ALLOPHONE**). The difference can be easily experienced by placing a finger close to one's mouth and saying *pot* (aspirated) and then *top* and *spot* (unaspirated).

**aspirational group** a **REFERENCE GROUP** that an individual aspires to join. An aspirational group may be an actual group characterized by interaction and interpersonal structures (e.g., a professional association, a sports team) or an aggregation of individuals who are thought to possess one or more shared similarities (e.g., the rich, intellectuals). Compare **MEMBERSHIP GROUP**; **DISSOCIATIVE GROUP**.

**aspirin** *n.* acetylsalicylic acid: a commonly used nonopioid **ANALGESIC**, which also has **ANTIPYRETIC** and anti-inflammatory properties and the ability to prevent formation of blood clots. Aspirin alleviates pain mainly by peripheral mechanisms (see **NSAID**); in controlling fever, it acts on the body's thermoregulatory center in the hypothalamus. Adverse effects include gastric irritation or ulceration with bleeding and occasional allergic reactions. Overdosage affects the central nervous system and other body systems (see **SALICYLISM**).

**aspirin combinations** drug mixtures that include aspirin as one of the components, the others commonly being other analgesics (e.g., **ACETAMINOPHEN**, **CODEINE**, **PROPOXYPHENE**), stimulants (usually caffeine), or both. Aspirin combinations may also include a barbiturate (e.g., butalbital), a skeletal muscle relaxant (e.g., **CARISOPRODOL**, **ORPHENADRINE**), or other drugs. Because many of these preparations can be obtained without a doctor's prescription, individuals with the habit of regular self-medication are at risk of developing gastrointestinal symptoms (e.g., peptic ulcer) and other toxic reactions (see **SALICYLISM**; **CAFFEINE INTOXICATION**).

**aspirin poisoning** see **SALICYLISM**.

**ASPR** abbreviation for **AMERICAN SOCIETY FOR PSYCHICAL RESEARCH**.

**ASR** abbreviation for **AUTOMATED SPEECH RECOGNITION**.

**assault** *n.* **1.** a violent attack on an individual. **2.** illegal conduct occurring when an individual either attempts to injure another person or threatens to do so and has the capacity to carry out the threat. —**assaultive** *adj.*

**A-S Scale** abbreviation for ANTI-SEMITISM SCALE.

**assembly bonus effect** in groups working on a decision-making or intellectual task, an outcome that is superior to what would be achieved by the most capable member or by any simple pooling of individual member efforts. See also GROUP SYNERGY. [first proposed in 1964 by U.S. social psychologists Barry E. Collins and Harold Guetzkow (1915–2008)]

**assembly test** a test requiring participants to put together elements, such as pieces of a puzzle or of an object.

**assertion** *n.* **1.** the forceful statement of or insistence on one's beliefs, claims, rights, or the like. **2.** in sport, the use of force within the rules of the game to achieve a strategic advantage over an opponent. Also called **proactive aggression**.

**assertive community treatment** a service delivery system for individuals with severe mental illness that includes a range of treatment, rehabilitation, and support services provided by a mobile multidisciplinary team comprised of, for example, a psychologist, a psychiatrist, a social worker, a case manager, and a nurse. The team establishes a close, consistent relationship with each individual and delivers services and supports to him or her at home and work.

**assertiveness** *n.* an adaptive style of communication in which individuals express their feelings and needs directly, while maintaining respect for others. A lack of assertiveness may contribute to depression and anxiety, whereas maladaptive approaches to assertiveness may manifest as aggression.

**assertiveness training** **1.** a method of teaching individuals to change verbal and nonverbal signals and behavioral patterns and to enhance interpersonal communication generally through techniques designed to help them express emotions, opinions, and preferences—positive and negative—clearly, directly, and in an appropriate manner. **ROLE PLAY** or **BEHAVIOR REHEARSAL** is often used to prepare clients to be appropriately assertive in real-life situations. **2.** in sport, the use of specific drills that have the purpose of increasing the physicality of play within the rules.

**assessment** *n.* **1.** in general, a judgment of the quality, worth, importance, or value of something or someone. **2.** in research, a systematic process of obtaining information from participants and using it to make inferences or judgments about them. In a clinical context, this process is known as a **PSYCHOLOGICAL ASSESSMENT**. **3.** in animal behavior, an evaluation of an individual based on its behavior or communication signals. A potential rival might use the degree of vigor and complexity of a male's song or the intensity of its plumage color to assess the probability of displacing that male. Similarly, a female might evaluate the relative quality of different potential mates in **MATE SELECTION**. Assessment may be a major function of animal communication.

**assessment center** an office or department in which participants are observed and evaluated with regard to their future growth and development within an organization. A variety of assessment procedures may be used, including **IN-BASKET TESTS**, **ROLE PLAY**, and individual or

group exercises constructed to simulate important activities at the organizational level to which the participants aspire. The assessment center may be used for currently employed personnel, job applicants, or both.

**assessment instrument** any test, interview, questionnaire, or other tool for the evaluation of ability, achievement, interests, personality, psychopathology, or the like.

**assessment of intelligence** the administration of standardized tests to determine an individual's ability to learn, reason, understand concepts, and acquire knowledge. See also **MEASURES OF INTELLIGENCE**.

**assessment research** the study of an organizational unit in order to understand its functioning and make recommendations for improvements or changes. See also **EVALUATION RESEARCH**.

**assignment therapy** a technique used in group therapy to enhance cohesiveness and communication among the participants so as to obtain maximum therapeutic benefit. A **SOCIOMETRIC TEST** is administered to determine the patterns of intermember relations within the group as a whole, and these patterns are then used to assign individuals to smaller, more focused groups. [articulated by Jacob L. MORENO]

**assimilation** *n.* **1.** the process of absorbing, incorporating, or making similar. In making judgments, for example, it refers to finding similarities between the target being judged and features of the context in which it is judged. Thus, meeting a person at an enjoyable party could lead to a more positive evaluation of that person than would have been the case otherwise. The evaluation of the person has been assimilated toward the positive social context. Compare **CONTRAST**. **2.** the process by which an immigrant to a new culture adopts the culture's beliefs and practices. This is more properly called **SOCIAL ASSIMILATION**. See also **ACULTURATION STRATEGIES**. **3.** see **PIAGETIAN THEORY**. —**assimilate** *vb.*

**assimilation effect** in psychology experiments, an effect in which participants' judgments shift toward an **ANCHOR** after it is introduced. For example, judgments of relative distance or weight will usually be evenly distributed along a scale before the experimenter provides an anchor. If, once the anchor is introduced, judgments cluster around the anchor, an assimilation effect is said to have occurred. Compare **CONTRAST EFFECT**.

**assimilative coping** a stress-management strategy in which a person actively tries to transform a situation in such a way that it conforms to his or her goals and aspirations. Examples of assimilative coping include asking for another person's help or acquiring a new problem-solving skill. Such attempts at modifying the environment are particularly evident during the initial stage of coping and are intended to avoid or diminish actual or anticipated losses. This type of **COPING STRATEGY** generally dominates as long as people feel actively able to change the situation or to enact efficient compensatory or self-regulatory interventions. In the event these efforts fail, an **ACCOMMODATIVE COPING** strategy may be adopted instead. [identified in 1990 by Jochen Brandtstädter and Gerolf Renner, German psychologists]

**assisted death** an action taken by one person to end the life of another, at the request of the latter. This action can take the form of either **PASSIVE EUTHANASIA** or **ACTIVE EUTHANASIA**. Assisted death differs from **MERCY KILLING** in

that it is generally performed by a physician and is not in response to an acute situation. It is sometimes called **physician-assisted suicide**, which assumes a firm determination of the cause of death. See also EUTHANASIA.

**assisted living** a form of congregate housing for older adults requiring long-term care services that include meals, personal care, and scheduled nursing care. Typically comprising private rooms or apartments, it encourages a degree of autonomy and independence in residents that is not provided for in NURSING HOMES.

**assisted reproductive technology (ART)** any treatment for INFERTILITY in which both eggs and sperm are handled. In general, ART procedures involve surgically removing eggs from a woman's ovaries, combining them with sperm in a laboratory, and returning them to the woman's body or donating them to another woman, usually by means of IN VITRO FERTILIZATION. They do not include treatments in which only sperm are handled, as in ARTIFICIAL INSEMINATION, or procedures in which a woman takes drugs only to stimulate her egg production without the intention of having her eggs retrieved. See also GAMETE INTRAFALLOPIAN TRANSFER; ZYGOTE INTRAFALLOPIAN TRANSFER.

**assisted suicide** suicide in which the person ending his or her own life is provided the means to do so (e.g., a prescription) by another. See ASSISTED DEATH.

**assistive device** see ASSISTIVE TECHNOLOGY.

**assistive listening device** a device used by a person with hearing loss to emphasize a single specific sound. Unlike conventional hearing aids, which amplify all sounds in the environment, assistive listening devices focus on a single sound, such as the voice of a person with whom one is conversing in a noisy restaurant, and make it more prominent than the background noise. An assistive listening device typically consists of a transmitter and microphone that are placed near the source of the sound in which one is interested and a receiver and output device, such as headphones, that direct the sound to a particular individual.

**assistive software** computer programs designed to enable individuals with disabilities to use computer applications. For example, a SCREEN READER, a software program designed for users with visual impairment, can be used with a SPEECH SYNTHESIZER to convert information on a computer monitor into speech.

**assistive technology (AT)** **1.** the field concerned with development and service provision of tools that improve the functioning of individuals with limitations or disabilities. See also BIOENGINEERING. **2.** any equipment or system designed to maintain or improve the functional capabilities of individuals with disabilities. **Assistive devices** (or **assistive technology devices**) range from simple low-technology items such as canes, walkers, and reachers to high-technology items such as voice-controlled computers and computerized speech-output devices. These devices are also occasionally referred to as **daily-living aids** or **independent-living aids**.

**assistive technology service** any organization, business, facility, or supplier that directly assists individuals with disabilities in the choice, purchase or leasing, or use of an ASSISTIVE TECHNOLOGY device, including customization, maintenance, and replacement.

**associate** **1. n.** something that accompanies or is catego-

rized with something else. **2. n.** a friend, partner, colleague, or accomplice. **3. n.** in learning studies, a word that is paired with another word to be learned with it (see PAIRED-ASSOCIATES LEARNING). **4. vb.** to use mental processes to form a connection between ideas, events, objects, and so forth.

**associated movement** involuntary, unnecessary contractions of uninvolved muscles during a movement.

**association** **n. 1.** a connection or relationship between two items (e.g., ideas, events, feelings) with the result that experiencing the first item activates a representation of the second. Associations are fundamental to LEARNING THEORY and BEHAVIORISM. **2.** the degree of statistical dependence or relationship between two or more phenomena. See also CORRELATION; STRENGTH OF ASSOCIATION. **3.** a group of individuals who gather occasionally for some common purpose. —**associative** *adj.* —**associational** *adj.*

**association analysis** see CORRELATION ANALYSIS.

**association by contiguity** the formation of a mental connection between two items based on the fact that they occur close together in time. Also called **contiguity of association**. See also LAW OF CONTIGUITY.

**association cortex** any of various areas of the CEREBRAL CORTEX that are not involved principally in sensory or motor representations but may be involved in integrative functions. Also called **association area**.

**association disturbance** see DISTURBANCE OF ASSOCIATION.

**association fiber** an axon from any of various neurons that link different parts of the same cerebral hemisphere. Compare COMMISSURAL FIBER.

**Association for Applied Sport Psychology (AASP)** an international, multidisciplinary professional organization founded in 1986 as the **Association for the Advancement of Applied Sport Psychology (AAASP)**; the name was shortened in 2007; its mission is to promote the development of science and ethical practice in sport psychology. It offers certification to qualified professionals in the fields of sport, exercise, and health psychology, and its main publication is the *Journal of Applied Sport Psychology*. See SPORT AND EXERCISE PSYCHOLOGY.

**Association for Psychological Science (APS)** a professional organization founded in 1988 to advance the needs and interests of scientific, applied, and academic psychologists as opposed to those engaged in clinical practice. Its mission is to promote, protect, and advance the interests of scientifically oriented psychology in research, application, and the improvement of human welfare. Originally called the **American Psychological Society (APS)**, the organization changed to its present name in 2006. The APS publishes five journals: *Psychological Science*, *Current Directions in Psychological Science*, *Psychological Science in the Public Interest*, *Perspectives on Psychological Science*, and *Clinical Psychological Science*.

**Association for Research in Otolaryngology (ARO)** an association of scientists and physicians who are engaged in basic and clinical research on hearing, balance, speech, taste, and smell. The ARO publishes the *Journal of the Association for Research in Otolaryngology (JARO)*.

**Association for the Advancement of Psychology (AAP)** an organization founded in 1974 to promote human welfare through the advancement of the profession

and science of psychology. The AAP promotes the interests of psychologists through (a) representation before public and governmental bodies, (b) cooperation with other organizations and agencies in furtherance of the profession and science of psychology, and (c) the operation of a political committee known as Psychologists for Legislative Action Now (AAP/PLAN).

**associationism** *n.* the theory that complex mental processes, such as thinking, learning, and memory, can be wholly or mainly explained by the associative links formed between ideas (see ASSOCIATION OF IDEAS) according to specific laws. Although ARISTOTLE cited some of these laws (similarity, difference, contiguity in time or space, etc.), the theory was first stated systematically by Thomas HOBBS, who held that all knowledge is compounded from relatively simple sense impressions. The laws and applications of association were later developed by John LOCKE and other members of the British empiricist school (see EMPIRICISM), notably George BERKELEY, David HUME, David HARTLEY, James MILL, and John Stuart MILL. Although the approach taken by such thinkers was relatively static and nonexperimental, there are echoes of associationism in much historical and contemporary psychology. Most importantly, associationism has been invoked to explain the pairing of stimuli and responses. As such, it is a fundamental assumption of modern LEARNING THEORY and all behaviorist approaches (see BEHAVIORISM). Also called **British associationism**.

**associationist** *n.* a theorist who believes that the process of learning can be best described as the acquisition, modification, or elaboration of associations. See ASSOCIATIONISM.

**associationistic learning theory** see ASSOCIATIVE LEARNING.

**association model** a method used to study the strength of relationship between a predictor variable and a response variable when values for the latter take the form of ORDINAL DATA. More specifically, it tests for STATISTICAL INTERDEPENDENCE between the variables.

**association nuclei** nuclei of the THALAMUS that do not receive direct input from ascending sensory systems. They connect widely with other thalamic nuclei and send axons to ASSOCIATION CORTEX.

**association of ideas** the process by which simple perceptions and ideas are combined into totalities of varying degrees of complexity and abstractness, as, for example, connecting the relatively simple ideas of four legs, furry coat, a certain shape and size, and so on, into the compound concept *cat*. The same process is held to explain one's understanding of entirely ABSTRACT IDEAS, such as *power* or *liberalism*. The association of ideas was a key concept for the British empiricist school of philosophers (see EMPIRICISM) and remains fundamental in LEARNING THEORY and BEHAVIORISM. See also MENTAL CHEMISTRY; MENTAL MECHANICS.

**association psychology** a psychological approach based on the premise that learning and knowledge are derived from the formation of connections (associations) between ideas or representations of stimuli and responses. Association psychology developed from British empiricist and associationist philosophy (see ASSOCIATIONISM).

**association-reaction time** in a WORD-ASSOCIATION TEST, the elapsed time between stimulus and response.

**association study** research designed to identify possible

genetic relationships among individuals who do or do not have a particular disease or disorder.

**association value** **1.** the extent to which a stimulus is associated with other ideas, memories, or values. **2.** the extent to which people are able to ascribe meaning to an apparently meaningless stimulus, for example, an arbitrary consonant-vowel-consonant trigram (e.g., KEX or DAG) presented during an association test.

**associative anamnesis** a psychiatric interview technique in which the patient gives an autobiographical account of his or her history and difficulties, while the therapist listens for key words and expressions that are then used to establish an **associative linkage** that will bring the patient closer to the unconscious roots of his or her disturbance. [developed by Austrian-born U.S. physician and psychoanalyst Felix Deutsch (1884–1964)]

**associative-chain theory** in LEARNING THEORY and behaviorist psychology (see BEHAVIORISM), a theory of how complex behaviors, including linguistic behaviors, are formed from combinations of simple stimulus–response associations.

**associative clustering** the tendency for items with preexisting associations to be recalled together.

**associative–dissociative strategy** a plan of shifting one's ATTENTIONAL FOCUS between internal (associative) feedback (e.g., breathing rate, muscle soreness) and external (dissociative) stimuli (e.g., what others are doing, the scenery). Athletes in ENDURANCE ACTIVITIES use such strategies to check body functions at specific times and to pay attention to external stimuli at others.

**associative fluency** the ability to make a wide range of connections when presented with an object, event, word, or concept. High associative fluency has been identified as an aspect of creativity that in many individuals is not positively correlated with high intelligence. See also CREATIVE THINKING; DIVERGENT THINKING.

**associative illusion** a visual illusion produced by the interaction of parts of a design (e.g., the MÜLLER-LYER ILLUSION).

**associative law** any of the principles according to which associations are acquired and strengthened, originally derived from British empiricist philosophy (see ASSOCIATIONISM). These include the LAW OF CONTIGUITY, the LAW OF FREQUENCY, and the law of recency (see RECENCY EFFECT).

**associative learning** the process of acquiring new and enduring information via the formation of bonds or connections between elements. In different types of **associationistic learning theories**, these associated elements may be stimulus and response, mental representations of events, or elements in neural networks. Historically, the associationistic theories of Clark L. HULL and Kenneth W. SPENCE are contrasted with the nonassociative and cognitive theory of Edward C. TOLMAN. Compare NONASSOCIATIVE LEARNING.

**associative linkage** see ASSOCIATIVE ANAMNESIS.

**associative memory** retrieval or activation of a memory (e.g., of a stimulus, behavior, place, or past event) that occurs upon recall or presentation of something associated with it.

**associative play** see SOCIAL PLAY.

**associative strength** the strength of the connection (association) between two or more items (e.g., between stimulus and response or between items in memory), as measured by the capacity of the first item to elicit the second (forward associative strength) or the second item to elicit the first (backward associative strength).

**associative thinking** a relatively uncontrolled cognitive activity in which the mind wanders without specific direction among elements, based on their connections (associations) with one another, as occurs during reverie, daydreaming, and FREE ASSOCIATION.

**associative visual agnosia** see VISUAL AGNOSIA.

**assonance** *n.* a similarity in the vowel sounds of two or more words, for example, *through* and *flute* or *sane* and *stay*.

**assortative mating** mating behavior in which mates are chosen on the basis of a particular trait or group of traits (e.g., attractiveness, similarity of body size). Also called **assortive mating**. See also MATE SELECTION; RANDOM MATING.

**assumed role** a behavior pattern adopted by a person in the belief that such behavior is expected for a particular position or status; taking on a role is also a method for dealing with uncertainty about how to behave. An example of an assumed role is the SICK ROLE. Also called **role enactment**.

**assumed similarity bias** the tendency for perceivers to assume that other people possess the same qualities and characteristics that they have. This bias is thought to inflate the accuracy that perceivers attribute to their judgments about others. [first proposed in 1955 by Lee J. CRONBACH]

**assumption** *n.* **1.** the premise or supposition that something is factual or true; that is, the act of taking something for granted. **2.** one or more conditions that need to be met in order for a statistical procedure to be fully justified from a theoretical perspective. For example, the ANALYSIS OF VARIANCE assumes HOMOGENEITY OF VARIANCE and independence of observations, among other criteria. If the assumptions were to be violated to an extreme extent, the results would be invalid. See also ROBUSTNESS.

**astasia** *n.* severe impairment or complete loss of the ability to stand due to problems in motor coordination. —**astatic** *adj.*

**astasia-abasia** the ability to walk only with a wobbly, staggering gait, although control is normal while lying down. This is believed to be psychogenic in origin and may be manifested as a symptom of CONVERSION DISORDER. Also called **Blocq's disease**.

**astereognosis** *n.* inability to identify the form and nature of an object by touch. It is a form of TACTILE AGNOSIA. Also called **tactile amnesia**.

**asterixis** *n.* transient loss of a fixed position of the hands or arms followed by a jerking recovery movement, usually occurring in association with metabolic disorders. Also called **flapping tremor**.

**asthenia** *n.* severe weakness or loss of strength, often associated with general fatigue or certain disorders. Asthenia formerly was thought to be a common symptom of a MAJOR DEPRESSIVE EPISODE but is no longer defined as such. —**asthenic** *adj.*

**asthenic type** a body type characterized by a frail, long-

limbed, narrow-chested physique. According to KRETSCHEMER TYPOLOGY, individuals so characterized tend to be shy, sensitive, and introverted in temperament (and in extreme cases schizophrenic). Also called **leptosomic type**. See also CONSTITUTIONAL TYPE.

**asthenopia** *n.* weakness or fatigue of the eyes, usually due to strain and tiring of the eye muscles. —**asthenopic** *adj.*

**asthma** *n.* a chronic disorder in which intermittent inflammation and narrowing of the bronchial passages produces wheezing, gasping, coughing, and chest tightness. Though the precipitating cause is usually an allergen, such as dust or pollen, environmental irritants, respiratory infection, anxiety, stress, and other agents may produce or aggravate symptoms. —**asthmatic** *adj.*

**astigmatism** *n.* a visual disorder in which the light rays of a visual stimulus do not all focus at a single point on the retina due to uneven curvature of the cornea or lens. As a result, light rays are refracted more in one meridian (that of the greatest curvature) than in the other at right angles to it (that of least curvature). The effect is an aberration or distortion of the visual image that makes it difficult to see fine detail. —**astigmatic** *adj.*

**astigmatoscope** *n.* an instrument used to diagnose and measure astigmatism in the eye.

**astral projection** the alleged ability to enter into a trancelike state in which one leaves the physical body and operates in the **astral plane** (i.e., a hypothesized level of existence accessible to the consciousness or spirit, which acts as a link between the physical and spirit or divine worlds). See OUT-OF-BODY EXPERIENCE.

**astroblastoma** *n.* see GLIOMA.

**astrocyte** *n.* a star-shaped nonneuronal central nervous system cell (GLIA) with numerous extensions that run in all directions. Astrocytes provide structural support for the brain, are responsible for many homeostatic controls, and may isolate receptive surfaces. Recent research suggests that they may play a role in potassium neurotransmission. Also called **astroglia**.

**astrocytoma** *n.* see GLIOMA.

**astrocytosis** *n.* a pathological condition marked by a proliferation of astrocytes into tissues of the central nervous system in which neurons have died due to lack of oxygen or glucose, as during episodes of HYPOXIA or HYPOGLYCEMIA. Also called **astrogliosis**.

**astrology** *n.* a PSEUDOSCIENCE based on the belief that the movements and positions of the planets in relation to the constellations of the zodiac influence the lives of individuals and the course of events. The systematic study of astrology originated in ancient Babylon and spread to Greece, India, and the Islamic world. China also developed an astrological system that incorporated astronomy and philosophy. Despite the disapproval of the Church, astrology remained widely influential during the medieval and Renaissance periods in Europe. Even in the modern scientific world, many people believe that their HOROSCOPE determines their personal characteristics, tendencies to particular diseases, and liability to good or bad fortune. There is no evidence to support this belief, except perhaps as a SELF-FULFILLING PROPHECY. Astrology is mainly of interest to psychology because it involved an early theory of personality types, relating the physical and psychological charac-



teristics of individuals to the supposed influence of the heavens. —**astrologer** *n.* —**astrological** *adj.*

**ASVAB** abbreviation for ARMED SERVICES VOCATIONAL ATTITUDE BATTERY.

**asyllabia** *n.* a type of **APHASIA** in which a person can recognize individual letters of the alphabet but is unable to form or comprehend syllables or words.

**asylum** *n.* **1.** originally, a refuge for criminals (from Greek *asylon*, “sanctuary”). From the 19th century, the terms *asylum* or *insane asylum* were applied to **MENTAL INSTITUTIONS**. These names are now obsolete, discarded because of their emphasis on refuge rather than treatment. **2.** the right to remain in a country, granted by the government of that country to individuals escaping oppression, war, or political unrest in their country of origin or allegiance.

**asymbolia** *n.* loss of the ability to understand or use symbols of any kind, including words, gestures, signals, musical notes, chemical formulas, or signs. Also called **asemia**.

**asymmetrical distribution** any nonnormal distribution: a set of ordered scores in which the frequency of values is not equal above and below the center or midpoint of the set. If one divides the distribution at its **MEAN**, the arrangement of scores differs across the two halves. See **SKEWNESS**. Compare **SYMMETRICAL DISTRIBUTION**.

**asymmetry** *n.* **SKEWNESS**: the condition in which the values of a data set are not arranged equally around a center point. Compare **SYMMETRY**. —**asymmetrical** *adj.*

**asymptomatic** *adj.* not showing any symptoms. For example, hypertension is considered asymptomatic because usually it does not have any outright physical or behavioral symptoms and can be detected only by measuring the blood pressure.

**asymptomatic neurosyphilis** a form of **NEUROSYPHILIS** in which laboratory findings show abnormalities in the cerebrospinal fluid but the patient does not show symptoms of the disease.

**asymptote** *n.* a straight line that defines the limit of a curve, such that the curve continues to approach but never reaches the line. The concept of asymptote is often invoked in relation to the **LEARNING CURVE**. Participants in learning studies frequently show a steady improvement in performance that then levels off as the curve approaches asymptote: any further improvements will be minimal, regardless of further practice or training. —**asymptotic** *adj.*

**asymptotic method** any statistical procedure for estimating a population quantity that becomes more accurate as the number of observations involved in the calculation increases. Asymptotic methods use assumptions—including **EFFICIENCY**, **NORMALITY**, and **SYMMETRY**—that generally are not absolutely true for finite samples but that become steadily more true as sample sizes increase. Also called **large-sample method**.

**asymptotic normality** a property of a distribution whereby that distribution increasingly resembles a bell-shaped curve as one or more of its characteristics become very large (i.e., it tends toward a **NORMAL DISTRIBUTION** as the sample size upon which it is based approaches infinity).

**asynchronous brood** offspring (usually birds) that hatch successively (rather than simultaneously, as in a **synchronous brood**). In cattle egrets, for example, eggs hatch 1 or 2 days apart, giving a growth advantage to the first-hatched chick. Often, older chicks will attack young sib-

lings to the point of killing them (see **SIBLICIDE**). However, in terms of parental efficiency in feeding chicks and mean chick survival, producing asynchronous broods is a better strategy than producing synchronous broods.

**asynchrony** *n.* lack of temporal correspondence in the occurrence of different events or processes, for example, the delay in time between a child's language comprehension and language production.

**asynergia** *n.* faulty coordination of muscle groups involved in the performance of complex motor movements, such as standing, walking, or kneeling. Also called **asynergy**. —**asynergic** *adj.*

**asynergic speech** see **CEREBELLAR SPEECH**.

**AT** abbreviation for **ASSISTIVE TECHNOLOGY**.

**ataque de nervios** a **CULTURE-BOUND SYNDROME** found among Latinos, characterized by shaking, uncontrollable shouting or crying, a sense of rising heat, loss of control, and verbal or physical aggression, followed by fainting or seizurelike episodes. Symptoms often occur following a stressful event related to the family, and most individuals quickly return to their previous level of functioning.

**ataractic** **1.** *adj.* the adjectival form of **ATARAXY**. **2.** *n.* an agent that has a calming or quieting effect, producing a state of ataraxy. The name was introduced as an alternative to **TRANQUILIZER**. Also called **ataraxic**.

**Atarax** *n.* a trade name for **HYDROXYZINE**.

**ataraxy** *n.* a state of mind that is characterized by perfect peace or detached serenity without loss of mental abilities or clouding of consciousness. Also called **ataraxia**. —**ataraxic** or **ataractic** *adj.*

**atavism** *n.* **1.** the presence of a genetic trait inherited from a remote ancestor that did not appear in more recent ancestors, that is, a reversion to an earlier type. **2.** more generally, the reappearance of or reversion to an earlier or more primitive characteristic or form (e.g., behavioral atavism). See **CRIMINAL ANTHROPOLOGY**. —**atavistic** *adj.*

**ataxia** *n.* inability to perform coordinated voluntary movements. It may be seen as a symptom of various disorders, such as multiple sclerosis or cerebral palsy, or it can occur in isolation. It can be heritable, as in **FRIEDREICH'S ATAXIA**, or acquired from injury or infection affecting the nervous system. When due to damage to the **CEREBELLUM**, it is called **CEREBELLAR ATAXIA**, and when due to loss of sensory feedback from the muscles and joints, it is called **SENSORY ATAXIA**. —**ataxic** *adj.*

**ataxiagraph** *n.* a device that measures **ATAXIA** by assessing the amount a person's body sways when he or she is standing upright with eyes closed. Also called **ataxiometer**.

**ataxia telangiectasia** an autosomal recessive genetic disorder characterized primarily by an inability to coordinate voluntary muscle movements and by the dilation of small blood vessels in the eyes and skin of the nose and ears. Initial symptoms include limb ataxia and truncal ataxia (swaying of the head and trunk while standing or sitting), which eventually become so severe that the individual must remain in a wheelchair. Other symptoms include increasingly slowed speech, the appearance of such movements as **MYOCLONUS** or intention tremors (see **ACTION TREMOR**), and a proneness to infection, particularly respiratory infection. Also called **Louis-Bar syndrome**.

**ataxic dysarthria** a speech disorder characterized by slurring, poorly controlled volume, and sudden spastic irregularities of vocal cord function. Also called **ataxic speech**.

**ataxic feeling** a subjective feeling that the ability to coordinate muscular movement has been lost. The feeling may be psychogenic or caused by such psychotropic drugs as antipsychotics, benzodiazepines, and lithium.

**ataxic gait** a wide-based, staggering gait seen in individuals with cerebellar damage, disease, or degeneration.

**ataxic speech** see ATAXIC DYSARTHRIA.

**ataxic writing** uncoordinated or irregular writing caused by brain damage. See also AGRAPHIA.

**ateliosis** *n.* **1.** incomplete development of the body or of any of its parts, as in infantilism or dwarfism. **2.** formerly, the persistence of infantile or childlike cognitive or emotional developmental stages. Also called **atelia**.

**atherosclerosis** *n.* a common form of ARTERIOSCLEROSIS resulting from accumulations of lipids such as cholesterol on the inner walls of arteries and their hardening into **atherosclerotic** (or **atheromatous**) **plaques**. —**atherosclerotic** *adj.*

**athetosis** *n.* slow, involuntary, writhing movements of the body, particularly the extremities such as the fingers and toes, caused by damage or degeneration of the BASAL GANGLIA. —**athetoid** *adj.* —**athetotic** *adj.*

**athlete-based intervention** **1.** an intervention that develops an athlete's perceptions, experiences, or both. **2.** an intervention that is initiated and conducted by the athlete.

**Athletic Coping Skills Inventory (ACSI)** a self-report inventory used to assess an individual's psychological skills in seven sports-specific areas: (a) coping with adversity, (b) peaking under pressure, (c) GOAL SETTING and mental preparation, (d) concentration, (e) freedom from worry, (f) confidence and ACHIEVEMENT MOTIVATION, and (g) coachability. The most recent version of the inventory is the **ACSI-28**, published in 1995. It consists of 28 statements (e.g., "I feel confident that I will play well") to which participants respond using a 4-point LIKERT SCALE, ranging from *almost never* to *almost always*. [developed by U.S. psychologist Ronald E. Smith (1940– ), statistician Robert W. Schutz, U.S. psychologist Frank L. Smoll (1941– ), and U.S. psychologist John T. Ptacek (1962– )]

**Athletic Motivation Inventory (AMI)** a self-report inventory used to assess 11 personality traits purportedly associated with successful athletic performance: aggressiveness, coachability, conscientiousness, determination, drive, emotional control, guilt proneness, leadership, mental toughness, self-confidence, and trust. Developed in the late 1960s, the AMI currently consists of 190 sports-specific statements (e.g., "I usually compete best without the advice of others") or questions (e.g., "Which would you say is the most true of coaching?") to which participants respond using a multiple-choice format. [developed by U.S. sport psychologists Thomas A. Tutko (1931– ), Leland P. Lyon, and Bruce C. Ogilvie (1920–2003)]

**athletic triad** the combination of AMENORRHEA, disordered eating, and osteoporosis observed in some female athletes, particularly those in subjectively evaluated sports (e.g., gymnastics, diving) or endurance sports (e.g., cross-country running).

**athletic type** a body type characterized by a muscular, well-proportioned, broad-shouldered physique. According to KRETSCHMER TYPOLOGY, such individuals tend to be energetic and aggressive in temperament. See also CARUS TYPOLOGY; CONSTITUTIONAL TYPE.

**athymia** *n.* **1.** absence of feeling or emotion. **2.** congenital absence of the THYMUS.

**athyreosis** *n.* a form of HYPOTHYROIDISM found in newborns in whom the thyroid gland has failed to develop normally. Affected children either have no thyroid gland or a gland that is abnormally small and whose essential elements are replaced by fibrous tissue. Also called **athyreotic cretinism**. See also CRETINISM.

**ATI** abbreviation for APTITUDE–TREATMENT INTERACTION.

**Ativan** *n.* a trade name for LORAZEPAM.

**atmosphere effect** **1.** the tendency for particular behaviors to be stimulated by a particular environment or situation, even when inappropriate, such as gesturing when using the telephone or applauding a poor speech. **2.** the tendency for an individual's thinking on a question to be affected illogically by an impression made by the terms in which the question is stated, as when positively worded premises in a syllogism increase the perceived validity of a false but positively worded conclusion. Also called **framing effect**. See also ANCHORING BIAS.

**atmospheric conditions** various aspects of the atmosphere (e.g., temperature, humidity, airflow, barometric pressure, composition, toxic conditions) as they affect the comfort and performance of people in their living or working environment.

**atmospheric perspective** a cue that aids the perception of depth and distance. Atmospheric perspective is the acquired ability to differentiate near and distant objects on the basis of their clear or indistinct appearance.

**atomism** *n.* **1.** the view that psychological phenomena can best be understood by analyzing them into elementary units, such as sensations or conditioned responses, and by showing how these units combine to form thoughts, images, perceptions, and behavior. Also called **atomistic psychology**; **molecularism**. See also ELEMENTARISM; REDUCTIONISM. **2.** in vision, the principle that visual perception of a complex stimulus results from an analysis of its elementary components. —**atomistic** *adj.*

**atonia** *n.* lack of normal muscle tone. See also DYSTONIA. —**atonic** *adj.*

**atonic seizure** a rare type of GENERALIZED SEIZURE in which there is a rapid loss of muscle tone and the individual suddenly falls. It was formerly called an **akinetic seizure**.

**ATP** adenosine triphosphate: a nucleotide in living cells that is the source of chemical energy for biological processes. A bond between two of its three component phosphate groups is easily split by a particular enzyme, **ATPase** (adenosine triphosphatase), yielding energy when a cell requires it.

**atrial flutter** see ARRHYTHMIA.

**at risk** vulnerable to a disorder or disease. Risk status for an individual is defined by genetic, physical, and behavioral factors or conditions. For example, children of people with schizophrenia may be considered at risk for schizophrenia,

and heavy cigarette smokers are at risk for emphysema and lung cancer.

**at-risk mental states** psychological symptoms or mental processes that render individuals vulnerable to mental illnesses or to adverse behaviors, such as violence.

**atrium** *n.* (*pl.* **atria**) a body cavity or chamber, such as either of the two upper chambers of the heart. —**atrial** *adj.*

**atrophy** *n.* a wasting away of the body or a body part, as from lack of nourishment, inactivity, degenerative disease, or normal aging. —**atrophic** *adj.*

**atropine** *n.* an ANTICHOLINERGIC DRUG derived from certain plants, particularly belladonna (see BELLADONNA ALKALOID), and also produced synthetically. Its effects include increases in heart rate and rate of breathing, relaxation of smooth muscles, and reduction of secretions (e.g., saliva). It may be used to treat organophosphate poisoning and bradycardia (slowing of the heart rate), or as an adjunct to anesthesia, but it is most commonly employed in eye examinations to dilate the pupil. Atropine is closely related, chemically and pharmacologically, to SCOPOLAMINE.

**atropine-coma therapy (ACT)** a now-abandoned method of treating tense, agitated, and anxious people with psychoses by administering atropine sulfate to induce coma.

**attachment** *n.* the emotional bond between a human infant or a young nonhuman animal and its parent figure or caregiver; it is developed as a step in establishing a feeling of security and demonstrated by calmness while in the parent's or caregiver's presence. Attachment also denotes the tendency to form such bonds with certain other individuals in infancy as well as the tendency in adulthood to seek emotionally supportive social relationships.

**attachment and biobehavioral catch-up intervention** an ATTACHMENT-BASED INTERVENTION designed to address the special needs of infants in FOSTER CARE by creating a predictable interpersonal environment that encourages and sustains their nurturance by their foster parents. By attending to the disrupted attachment needs of these infants, many of whom have been put in foster care because of previous maltreatment by their original caregivers, the intervention seeks to develop their regulatory capacity at both the physiological and behavioral level. Research suggests, for example, that the intervention is effective in helping to decrease levels of cortisol, a stress hormone, in these children. They are also reported to show less avoidance behavior and to seek their caregivers' comfort when distressed. The intervention is proposed to be particularly effective when involving foster caregivers predisposed to value secure attachments; see AUTONOMOUS STATES OF MIND. [developed by U.S. psychologist Mary Dozier (1954– )]

**attachment-based intervention** any early intervention based on ATTACHMENT THEORY and focused on enhancing parents' or caregivers' ability to perceive their children's attachment signals accurately and to respond to those signals in an adequate and prompt way. The goal is to foster secure attachment relationships and prevent less optimal or deviant developmental pathways in children.

**attachment behavior** **1.** behavior associated with the formation of and investment in significant relationships. **2.** infant behavior that results in the infant gaining proximity to or contact with his or her caregiver. Its manifestations

include crying, smiling, calling, and clinging. See ATTACHMENT THEORY. [first described by John BOWLBY]

**attachment bond** the primary, enduring, special relationship that gradually develops between an infant and caregiver.

**attachment disorder** see REACTIVE ATTACHMENT DISORDER.

**Attachment Q-set (AQS)** a procedure utilizing the Q SORT technique to measure individual differences in the attachment behavior of infants and young children. Consisting of 90 items on which observers or parents rate a child's behavior, the procedure was developed (a) to better understand a child's tendency to use a parent or caregiver as a SECURE BASE; (b) to examine this secure base phenomenon in relation to the attachment classifications identified in the STRANGE SITUATION; and (c) to promote interest in normative secure base behavior and individual differences in attachment security beyond infancy. Q-sort ratings of behavior such as the AQS have been used by researchers to explore the origins and consequences of attachment security in home and day care settings. [devised in 1985 by U.S. psychologists Everett Waters (1951– ) and Kathleen E. Deane]

**attachment style** the characteristic way people relate to others in the context of intimate relationships, which is heavily influenced by SELF-WORTH and interpersonal TRUST. Theoretically, the degree of attachment security in adults is related directly to how well they bonded to others as children. Four distinct categories of adult attachment style are typically identified: DISMISSIVE ATTACHMENT, FEARFUL ATTACHMENT, PREOCCUPIED ATTACHMENT, and SECURE ATTACHMENT. Attachment styles with respect to infant–mother relationships were first described by Mary D. Salter AINSWORTH and her colleagues, who identified two main styles: SECURE ATTACHMENT and INSECURE ATTACHMENT, the latter characterized by various patterns (e.g., AMBIVALENT ATTACHMENT; ANXIOUS-AVOIDANT ATTACHMENT). Different attachment styles in infancy are associated with different psychological outcomes in childhood and later life.

**attachment theory** a theory that (a) postulates an evolutionarily advantageous need, especially in primates, to form close emotional bonds with significant others: specifically, a need for the young to maintain close proximity to and form bonds with their caregivers; and (b) characterizes the different types of relationships between human infants and caregivers. These relationships have been shown to affect the individual's later emotional development and emotional stability. See also INSECURE ATTACHMENT; SECURE ATTACHMENT; STRANGE SITUATION. [originally developed by John BOWLBY and later expanded by Mary D. Salter AINSWORTH]

**attack behavior** an aggressive use of force or violence against an adversary, usually with intent to harm. Attack behavior often occurs when signals of warning or threat have been ignored. Some humans and nonhuman animals may use attack as a form of DEFENSIVE BEHAVIOR.

**attempted suicide** a deliberate but unsuccessful attempt to take one's own life. Research has suggested that older men who are of low socioeconomic status and who are single, divorced, or widowed have an especially high risk for suicide. Many studies have found an association between childhood physical or sexual abuse and a history of suicide attempts as well. Additional risk factors include hopelessness, heightened impulsivity, problem-solving defi-

cits, perfectionism, a family history of suicide, and certain mental disorders (i.e., depression, bipolar disorder, substance dependence disorders, psychotic disorders). Although protective factors are studied far less commonly, one of the most consistently identified is a supportive social network or family. Also called **suicide attempt**.

**attend** *vb.* to direct ATTENTION to a location, object, feature, or event, which is presumed to increase processing of the attended information and make it more prominent in conscious awareness.

**attendance** *n.* **1.** the number of pupils present in a class, school, or educational function. **2.** a record of how consistently a pupil has been present on the days that a class or school is in session.

**attendant care** **1.** nonmedical, in-home assistance with dressing, feeding, and other activities of daily living provided to individuals with a physical or developmental disability who otherwise are able to live independently. **2.** one-on-one direct supervision by a trained attendant of a juvenile who has been taken into custody in a nonsecure setting.

**attending behavior** any behavior engaged in by an individual while attentively listening to and observing a speaker, for example, exhibiting an open, interested posture and maintaining eye contact. Helpful attending behaviors, along with ACTIVE LISTENING, are considered cornerstones of a therapist's or counselor's general ability.

**attensity** *n.* the sensory clarity or attention-producing effect of a sensation. [defined about 1900 by Edward Bradford TITCHENER]

**attention** *n.* a state in which cognitive resources are focused on certain aspects of the environment rather than on others and the central nervous system is in a state of readiness to respond to stimuli. Because it has been presumed that human beings do not have an infinite capacity to attend to everything—focusing on certain items at the expense of others—much of the research in this field has been devoted to discerning which factors influence attention and to understanding the neural mechanisms that are involved in the selective processing of information. For example, past experience affects perceptual experience (we notice things that have meaning for us), and some activities (e.g., reading) require conscious participation (i.e., VOLUNTARY ATTENTION). However, attention can also be captured (i.e., directed involuntarily) by qualities of stimuli in the environment, such as intensity, movement, repetition, contrast, and novelty. See also DIVIDED ATTENTION; EFFORTLESS ATTENTION; FOCAL ATTENTION; INVOLUNTARY ATTENTION; POSTVOLUNTARY ATTENTION; PRIMARY ATTENTION; SECONDARY ATTENTION; SELECTIVE ATTENTION; SPATIAL ATTENTION; VISUAL ATTENTION.

**attentional blindness** a general term for any failure to notice visual stimuli that can be attributed to attentional factors rather than perceptual impairment. See ATTENTIONAL NARROWING; CHANGE BLINDNESS; INATTENTIONAL BLINDNESS; PERCEPTUAL SET; REPETITION BLINDNESS.

**attentional blink** the inability to detect a second target presented within 500 ms of the first, where the two targets appear in a rapid sequential presentation of distractors and targets. It is attributed to attentional requirements for processing the target and not to perceptual impairment.

**attentional capture** the involuntary focusing of atten-

tion, for example by a change in a stimulus, which interrupts other processing.

**attentional control of action model** see CONTROL OF ACTION MODEL.

**attentional dyslexia** a type of VISUAL WORD-FORM DYSLEXIA in which a person is able to read words but has difficulty identifying their constituent letters. This is thought to be caused by a failure of the letter-to-word binding system, resulting in the "migration" of letters between words. People with attentional dyslexia are able to read letters significantly better when they are presented in isolation than when presented together with others as part of a text.

**attentional focus** the focus of an individual's attention at a particular moment. This focus may be internal (i.e., attending to cognitive, emotional, or pain cues) or external (i.e., attending to environmental cues). See ASSOCIATIVE-DISSOCIATIVE STRATEGY; TEST OF ATTENTIONAL AND INTERPERSONAL STYLE.

**attentional narrowing** the restricting of attention in high-stress situations to a small set of information sources, with the potential omission of critical, task-relevant information. For example, when driving to the hospital for a medical emergency, the driver may focus attention only on the road ahead and not notice events at the side of the road, such as a pedestrian entering a crosswalk.

**attentional strategy** a pattern of ATTENTIONAL FOCUS for the purpose of efficient execution of a task. The pattern may be specifically learned or habitually developed. For example, a quarterback in football starts with a broad external focus (determining the opposition's defense pattern) and moves to an internal focus (selecting the appropriate play), then back to a broad external focus after snap (determining pass patterns), and finally to a narrow external focus (selecting the receiver and executing the throw). See also ASSOCIATIVE-DISSOCIATIVE STRATEGY.

**attention-control training (ACT)** a program that assists an individual to be more effective at maintaining appropriate ATTENTIONAL FOCUS. It is achieved by assessment of the individual's attentional strengths and weaknesses, the attentional demands of the environment in which the individual's performance occurs, environmental and personal characteristics likely to induce stress and dictate behavior under pressure, and typical error patterns and situations in which they occur. This assessment leads to the planning of an intervention protocol, the purpose of which is to teach the individual to concentrate on all the task-relevant cues and ignore all the task-irrelevant cues in a given situation. Also called **attention training**.

**attention decrement** the tendency for people to pay less attention to stimuli coming later in a sequential occurrence or presentation and thus to remember them less well. For example, students studying a list of terms and their meanings will have more difficulty focusing on and committing to memory those at the end.

**attention-deficit/hyperactivity disorder (ADHD)** a behavioral syndrome characterized by the persistent presence of six or more symptoms involving (a) inattention (e.g., failure to complete tasks or listen carefully, difficulty in concentrating, distractibility) or (b) impulsivity or hyperactivity (e.g., blurting out answers; impatience; restlessness; fidgeting; difficulty in organizing work, taking turns, or staying seated; excessive talking; running about; climbing on things). The symptoms, which impair social, academic, or occupational functioning, start to appear before

the age of 7 and are observed in more than one setting. ADHD has been given a variety of names over the years, including the still commonly used **attention-deficit disorder (ADD)**.

**attention disorder** a disturbance characterized by an inability to maintain focus on an activity or by difficulties in taking notice of, responding to, or being aware of the behavior, demands, or requests of other people. Previously, this term was frequently used interchangeably with MINIMAL BRAIN DYSFUNCTION, as impairments of attention are among the most common manifestations of brain damage. See also LEARNING DISABILITY.

**attention fluctuation** see FLUCTUATION OF ATTENTION.

**attention-getting** *adj.* describing a type of behavior, often inappropriate, that is used to gain attention. Childhood TEMPER TANTRUMS are an example of such behavior.

**attention load measure** a method that uses competing cognitive tasks to assess the processing demands made by each task. The degradation in performance of one task is taken to be a measure of the attentional demands made by the other task. See DUAL-TASK COMPETITION.

**Attention Network Test (ANT)** a test that provides independent measures of efficiency for the three aspects of attention specified in the ATTENTION NETWORK THEORY: the alerting function, the orientating function, and the executive function. It takes the form of a simple computerized task in which participants are required to recognize and react to target stimuli under various cue conditions. The test has been widely used to investigate attentional disorders, notably ATTENTION-DEFICIT/HYPERACTIVITY DISORDER. [devised by U.S. psychologist Jin Fan and colleagues in 2002]

**attention network theory** a theory holding that attention is dependent on three separate but interacting neural networks: an alerting or vigilance network, an orientation and selection network, and an executive and conflict network. The theory has been investigated using neuroimaging techniques and a range of experimental tests. See also ATTENTION NETWORK TEST. [proposed in 1990 by U.S. psychologists Michael I. Posner (1936– ) and Steven E. Petersen]

**attention overload** a psychological condition that results from excessive demands on attention. The effect is temporary depletion of available attention and an inability to cope with tasks that demand attention. Attention overload can occur in work tasks, such as supervising activity of commercial aircraft in an airport control tower. In resource models of attention, such as the UNITARY-RESOURCE MODEL, overload refers specifically to situations in which the demand for attentional resources exceeds the supply. See also INFORMATION OVERLOAD.

**attention shifting** moving the focus of attention from one location to another. Shifts can be made intentionally or caused automatically by the abrupt onset of a stimulus. For intentional shifts, a spatial cue must be presented a few hundred milliseconds before the displayed information to allow attention to be shifted to the cued location.

**attention span** the length of time an individual can concentrate on one specific task or other item of interest. Compare APPREHENSION SPAN. See also SCOPE OF ATTENTION.

**attention-span test** any measure of an individual's ability to focus on a task or of his or her susceptibility to

distraction. A problem with all such tests is variance in scores attributable to other variables (e.g., hunger, fatigue, factors in the testing environment).

**attention training** see ATTENTION-CONTROL TRAINING.

**attentiveness** *n.* **1.** the state of being alert and actively paying attention. **2.** the quality of actively attending to the needs of others.

**attenuated positive symptoms** in schizophrenia, a reduction in hallucinations, delusions, bizarre behavior, or conceptual thought problems. See also POSITIVE SYMPTOM.

**attenuated psychotic symptoms** in schizophrenia and other PSYCHOTIC DISORDERS, an increase in reality-based perceptions and a reduction in symptoms, such as delusions, hallucinations, markedly incoherent speech, and disorientation.

**attenuation** *n.* **1.** the lessening or weakening in the intensity, value, or quality of a stimulus. **2.** an underestimation of the size of an effect or relationship due to poor measurement or RESTRICTION OF RANGE. See also CORRECTION FOR ATTENUATION.

**attenuation theory** a version of the FILTER THEORY of attention proposing that unattended messages are attenuated (i.e., processed weakly) but not entirely blocked from further processing. According to the theory, items in unattended channels of information have different thresholds of recognition depending on their significance to the individual. Thus, a significant word (e.g., the person's name) would have a low threshold and, when mentioned, would be recognized even if that person's attention is concentrated elsewhere (e.g., in conversation with someone else). See also COCKTAIL-PARTY EFFECT. [proposed in 1960 by British psychologist Anne Marie Treisman (1935– )]

**attenuator** *n.* a calibrated device that accurately controls the decrease in the intensity of tones or light on electronic instruments, such as AUDIOMETERS, stereophonic sound systems, or video equipment.

**attitude** *n.* a relatively enduring and general evaluation of an object, person, group, issue, or concept on a dimension ranging from negative to positive. Attitudes provide summary evaluations of target objects and are often assumed to be derived from specific beliefs, emotions, and past behaviors associated with those objects. —**attitudinal** *adj.*

**attitude accessibility** the likelihood that an attitude will be automatically activated from memory on encountering the ATTITUDE OBJECT. Accessibility is assumed to depend on the strength of the associative link in memory between the representation of the object and the evaluation of the object: The stronger the memory link between the object and its evaluation, the more quickly the attitude will come to mind. Attitudes that come quickly to mind are believed to be better guides to behavior. Accessibility is a determinant of ATTITUDE STRENGTH.

**attitude-behavior consistency** the extent to which behavior toward an ATTITUDE OBJECT is consistent with the attitude associated with that object. Positive attitudes are associated with approach behaviors; negative attitudes are associated with withdrawal behaviors.

**attitude change** any alteration in an attitude, which may result from active attempts by others to change the attitude or from processes initiated by the person holding the attitude.

**attitude-congeniality effect** the tendency to remember information that is evaluatively consistent with an attitude better than information that is evaluatively inconsistent with an attitude.

**attitude measure** a procedure in which individuals are assigned quantitative values that reflect systematic variation on some underlying attitude. Several broad categories have been developed, including DIRECT ATTITUDE MEASURES, INDIRECT ATTITUDE MEASURES, EXPLICIT ATTITUDE MEASURES, and IMPLICIT ATTITUDE MEASURES.

**attitude object** any target of judgment that has an attitude associated with it. Attitude objects may be people, social groups, policy positions, abstract concepts, or physical objects.

**attitude-relevant knowledge** information that is directly associated with an ATTITUDE OBJECT and is activated in memory when the object is encountered. Attitude-relevant knowledge is usually measured in terms of the amount of information associated with the object. Also called **issue-relevant knowledge**; **working knowledge**.

**attitude scale** a self-report measure used to assess an attitude. See LIKERT SCALE; SEMANTIC DIFFERENTIAL; THURSTONE ATTITUDE SCALES.

**attitude strength** the extent to which an attitude persists over time, resists change, influences information processing, and guides behavior. Strong attitudes possess all four of these defining features, whereas weak attitudes lack them. A number of attitude properties have been shown to be predictors of an attitude's strength, including ATTITUDE ACCESSIBILITY, AMBIVALENCE OF AN ATTITUDE, and CENTRALITY OF AN ATTITUDE, among others.

**attitude survey** a set of ATTITUDE MEASURES usually designed to assess attitudes toward more than one ATTITUDE OBJECT.

**attitude system** a set of two or more attitudes that are associated with one another in memory. Attitude systems can be characterized in terms of the number of attitudes in the system, the strength, number, and pattern of associations among the attitudes, and the evaluative consistency of the attitudes in the system. See also INTERATTITUDINAL CONSISTENCY.

**attitudinal involvement** see EGO INVOLVEMENT.

**attitudinal reflex** a reflex that helps put an animal in a position or condition to make a complex response, as in preparing to attack an adversary.

**attitudinal types** in Carl JUNG's ANALYTIC PSYCHOLOGY, two personality types defined by habitual EXTRAVERSION on the one hand and habitual INTROVERSION on the other. See INTROVERSION-EXTRAVERSION. See also FUNCTIONAL TYPES.

**attraction** *n.* 1. the interest in and liking of one individual by another, or the mutual interest and liking between two or more individuals. Interpersonal attraction may be based on shared experiences or characteristics, physical appearance, internal motivation (e.g., for AFFILIATION), or some combination of these. Also called **interpersonal attraction**. 2. in environmental psychology, a quality affecting proximity between individuals. For example, male-female and female-female pairs who enjoy each other's company position themselves closer to each other than do pairs who feel no personal liking or affection for each other. Environmental influences, such as noise, heat, and humid-

ity, decrease attraction between pairs of individuals. See PROXEMICS. —**attractive** *adj.*

**attraction relations** patterns of liking-disliking, acceptance-rejection, and inclusion-exclusion among members of a group. Such patterns are also called **sociometric structures**, particularly when assessed through the use of SOCIOMETRY.

**attraction-selection-attrition model (ASA model)** a model proposing that (a) people are attracted to organizations that are congruent with their values, personalities, and needs; (b) the organization, in turn, employs people with attributes that fit the ORGANIZATIONAL CULTURE; and (c) those employees who do not fit the organizational culture leave. Over time the characteristics of the people who constitute the organization become increasingly homogeneous as the result of this process. [proposed by U.S. organizational psychologist Benjamin Schneider (1938– ) in 1987]

**attractor dynamics** an approach to analyzing and understanding the interactions of goals, FEEDBACK, and the environment in the evolution of a movement TRAJECTORY, especially for repetitive movements.

**attributable risk** in EPIDEMIOLOGY, the incidence rate of a disease or disorder that can be considered to have been caused by exposure to a RISK FACTOR. A large portion of lung cancers can be attributed to tobacco use, constituting a substantial attributable risk for this disease.

**attribute** 1. *n.* a quality or property of a person, sensation, or object, for example, the TONAL ATTRIBUTE of a note. 2. *vb.* to assign an effect to a particular causal factor or agent. See ATTRIBUTION THEORY.

**attribute model of memory** a model in which different brain regions process different dimensions or attributes of a learning or memory situation—space, time, sensory dimensions, response, and emotional aspects.

**attribution** *n.* 1. an inference regarding the cause of a person's behavior or an interpersonal event. Three dimensions are often used to evaluate people's **attributional styles**, or characteristic tendencies when inferring such causes: the internal-external dimension (whether they tend to attribute events to the self or to other factors), the stable-unstable dimension (whether they tend to attribute events to enduring or transient causes), and the global-specific dimension (whether they tend to attribute events to causes that affect many events or just a single event). 2. in the TWO-WORD STAGE of language development, a noun qualified by an attribute, for example, *blue car*.

**attributional analysis of persuasion** an approach to understanding PERSUASION in terms of the reasons given by people for why communicators of persuasive messages adopt particular attitudes.

**attribution error** an error or bias in ascribing motives to behaviors or causes to outcomes. See FUNDAMENTAL ATTRIBUTION ERROR; GROUP ATTRIBUTION ERROR; ULTIMATE ATTRIBUTION ERROR.

**attribution of emotion** see SCHACHTER-SINGER THEORY.

**attribution theory** a theoretical proposition about the processes by which people ascribe motives to their own and others' behavior, and particularly whether these motives are either internal and personal (a DISPOSITIONAL ATTRIBUTION) or external and circumstantial (a SITUA-

TIONAL ATTRIBUTION). Harold H. KELLEY identified three general principles of attribution: the **covariation principle**, stating that for a factor to be considered as a cause of behavior it must be present when the behavior occurs and not present when the behavior does not occur; the **discounting principle**, stating that the role of a particular cause in producing a particular effect should be given less weight if other plausible causes are also present; and the **augmentation principle**, stating that if someone performs an action when there are known constraints, costs, or risks (e.g., runs a marathon on a cold and rainy day), then his or her motive for doing so must be stronger than any of the inhibitory motives. Kelley's work and other prominent attribution theories (e.g., CORRESPONDENT INFERENCE THEORY) emerged from the NAIVE ANALYSIS OF ACTION developed in 1958 by Fritz HEIDER.

**attribution theory of leadership 1.** a model of LEADERSHIP EMERGENCE and evaluation that assumes that individuals make inferences about leadership ability by observing and interpreting certain environmental and behavioral cues. Like LEADER CATEGORIZATION THEORY, this theory assumes that followers respond more positively to a leader who displays the qualities and behaviors that match their IMPLICIT LEADERSHIP THEORIES. See also LEADER PROTOTYPE; LEADERSHIP THEORIES. [proposed in 1982 by U.S. industrial and organizational psychologists Robert G. Lord (1946– ), Roseanne J. Foti (1954– ), and James Steven Phillips] **2.** a model that suggests leaders observe their followers' behavior, make inferences about the causes of that behavior (i.e., whether it is the result of internal, personal factors or of external, circumstantial ones), and then respond on the basis of those inferences. For example, a manager who makes an internal attribution by concluding that an employee's poor performance on a recent project was due to some characteristic of that person (e.g., lack of motivation) is likely to decide on a harsher disciplinary action than if he or she made an external attribution by concluding the poor performance was due to the situation (e.g., a rushed completion schedule). [proposed in 1979 by U.S. social psychologist Stephen G. Green (1945– ) and U.S. industrial and organizational psychologist Terence R. Mitchell (1942– )]

**attribution therapy** a form of therapy in which the therapist tries to change a client's views concerning the causes of events and behavior.

**attrition** *n.* the loss of study participants over time. Attrition may occur for a variety of reasons (e.g., the nature of the data being collected, participant relocation, aversive or costly data collection procedures) and can threaten the EXTERNAL VALIDITY and INTERNAL VALIDITY of research. It also creates the potential for BIAS—individuals who drop out may have unique characteristics that are relevant to the phenomenon of interest such that the remaining sample is no longer representative of the population—and may reduce the POWER of statistical analyses.

**attunement** *n.* the matching of affect between infant and parent or caregiver to create emotional SYNCHRONY. The parent's response can take the form of mirroring (e.g., returning an infant's smile) or be cross-modal (e.g., a vocal response “uh oh” to the infant's dropping cereal on the floor). Attunement communicates to the infant that the parent can understand and share the infant's feelings. Compare EMPATHIC FAILURE; MISATTUNEMENT. [first described by U.S. psychiatrist and psychoanalyst Daniel Stern (1934–2012)]

**atypical** *adj.* differing from the norm in being unusual, unrepresentative, or uncharacteristic.

**atypical antipsychotic** a class of ANTIPSYCHOTIC drugs used in the treatment of schizophrenia, delusional disorders, and other disorders characterized by psychotic symptoms, including psychotic bipolar mania. Atypical antipsychotics are also used to treat aggression associated with autism and as adjunctive agents in the treatment of some nonpsychotic conditions, such as obsessive-compulsive disorder, explosive disorder, and severe depression. They are DOPAMINE-RECEPTOR ANTAGONISTS and also block the effects of serotonin at 5-HT<sub>2A</sub> receptors. They have additional actions at other neurotransmitter receptors but are not identical in these additional actions. The prototype of the group is CLOZAPINE; others in current clinical use include ARIPIRAZOLE, ASENAPINE, ILOPERIDONE, LURASIDONE, OLANZAPINE, QUETIAPINE, RISPERIDONE, and ZIPRASIDONE. Compared with conventional (typical or first-generation) antipsychotics, atypical antipsychotics produce fewer EXTRAPYRAMIDAL SYMPTOMS, are less likely to alter serum levels of PROLACTIN, and appear to be less likely to cause TARDIVE DYSKINESIA, all of which are significant adverse effects of the conventional drugs. However, they have been associated with metabolic effects, such as obesity, diabetes, and high cholesterol. In addition, extreme hyperglycemia, sometimes associated with diabetic ketoacidosis or hyperosmolar coma or death, has been reported. Clozapine use is also associated with AGRANULOCYTOSIS; later atypical antipsychotics (e.g., olanzapine) do not have this side effect. Also called **novel antipsychotic**; **second-generation antipsychotic**.

**atypical depression** a MAJOR DEPRESSIVE EPISODE or, less commonly, DYSTHYMIC DISORDER characterized by ATYPICAL FEATURES.

**atypical features** symptoms of a disorder other than the standard diagnostic criteria. For a MAJOR DEPRESSIVE EPISODE or DYSTHYMIC DISORDER, for example, they would include hypersomnia or improvement of mood in response to positive events.

**atypical psychosis** any of various conditions involving psychotic symptoms that do not meet the criteria for any specific disorder.

**Aubert phenomenon** the illusion that a vertical line tilts in the opposite direction from the direction the head is tilted when viewing it. Also called **Aubert illusion**. [Hermann Aubert (1826–1892), German physician]

**AUC** abbreviation for AREA UNDER THE CURVE.

**audibility curve** the relationship between the threshold of hearing for a PURE TONE, expressed in DECIBELS sound-pressure level (dB SPL), and the frequency of the tone. Compare AUDIOGRAM.

**audibility range** the sound frequencies that elicit the sensation of hearing. For humans with average hearing, the audible range is usually specified as 20 Hz to 20 kHz. However, humans are much less sensitive to frequencies at the extremes of this somewhat arbitrary range. The frequency range of speech is approximately 100 Hz to 4 kHz. In audiometry, PURE-TONE thresholds are typically measured at frequencies from 250 Hz to 8 kHz. Also called **audible range**.

**audible thought** a type of hallucination in which one hears one's own thoughts as if they were projected by an inner voice.

**audience** *n.* **1.** a body of onlookers that observes some performance, event, or activity. Unlike street crowds or MOBS, audiences are usually restrained and conventional in manner; individuals usually join them deliberately and withdraw when the observed performance or activity is completed. Audiences are, in some cases, widely scattered, as in the audience for a television broadcast. **2.** the people reached by a communication, particularly when selected as the target of a persuasive message.

**audience effect** the influence on behavior of the presence of bystanders. In humans, performance is often improved when the action is simple and well learned (see SOCIAL FACILITATION) but may be inhibited when it is complicated, novel, or difficult to perform or when the person believes the behavior might incur the audience's disapproval (see SOCIAL INHIBITION). The audience effect has also been observed in fish, birds, nonhuman primates, and other animals. For example, studies of Siamese fighting fish (*Betta splendens*) have shown that the presence of a male audience can increase aggression during interactions. See also COACTION EFFECT; EVALUATION APPREHENSION.

**audience task** any performance, competition, work assignment, or goal-oriented activity that is executed in the presence of one or more individuals who watch the activity. See also SOCIAL FACILITATION. Compare COACTION TASK.

**audio-** *combining form* sound or hearing.

**audiogenic seizure** a seizure induced by loud noises. See REFLEX EPILEPSY.

**audiogram** *n.* a graph relating an individual's PURE-TONE thresholds at selected frequencies to those of people with normal hearing. The *x*-axis is the frequency of the tone; the *y*-axis is **hearing level** (HL), expressed in decibels (dB). For example, a person whose threshold is 30 dB above normal for a 4 kHz tone would have an audiogram that shows a point at 4 kHz and 30 dB HL. The audiogram is a basic clinical measurement for assessing and diagnosing hearing disorders. See AUDIOMETER; AUDIOMETRIC ZERO. Compare AUDIBILITY CURVE.

**audiogravic illusion** mislocalization of sounds that occurs when the body is tilted or the apparent direction of gravity is altered.

**audiogyral illusion** the apparent movement of a stationary source of sound when the listener is rotated.

**audiology** *n.* the study of hearing, with an emphasis on the evaluation and treatment of hearing disorders and the rehabilitation of individuals with hearing loss or related disorders (e.g., balance disorders). —**audiological** *adj.* —**audiologist** *n.*

**audiometer** *n.* an electronic device used to measure auditory sensitivity, usually in clinical settings. Its primary use is to produce an AUDIOGRAM. —**audiometric** *adj.*

**audiometric chamber** see SOUND-ATTENUATING CHAMBER.

**audiometric zero** the level of a PURE TONE of a given frequency that is just detectable by a person with normal hearing. For example, the audiometric zero for a 1 kHz pure tone is 7.5 dB SPL (decibels sound-pressure level) for TDH49 headphones, according to U.S. standards (ANSI S3.6-1996 Specification for Audiometers). Audiometric zero is used to calibrate audiometers and, by definition, is 0 dB HL (hearing level). See AUDIOGRAM.

**audiometry** *n.* the measurement of an individual's hear-

ing ability with electronic AUDIOMETERS to diagnose hearing loss and determine the nature and extent of such loss. Audiometry provides an assessment of the need for hearing aids, aural habilitation (training to help the individual make use of any residual hearing), and possible surgery. Also called **diagnostic audiometry**. See also ELECTROENCEPHALOGRAPHIC AUDIOMETRY; ELECTROPHYSIOLOGIC AUDIOMETRY; SCREENING AUDIOMETRY; SPEECH AUDIOMETRY. —**audiometrician** *n.*

**audiotactile device** an ASSISTIVE TECHNOLOGY device consisting of a touch-sensitive pad and a SPEECH SYNTHESIZER, which generates a voice output in response to input from the pad.

**audiovisual instruction** in academic education, technical training, and personnel training, the use of audio aids, visual aids, or both, such as films, slides, videotapes, audiotapes, television, and computers. Also called **audiovisual training**.

**audit** *n.* an evaluation of a service, intervention, or outcome. For example, in health administration it refers to an examination of the care proposed or rendered by a provider, whereas in research it refers to an examination of the soundness of a study's findings. See MEDICAL AUDIT; TREATMENT AUDIT.

**audition** *n.* see HEARING.

**auditory abilities** abilities to encode and discriminate different sounds or tones, which, according to some theories of intelligence (such as the THREE-STRATUM MODEL OF INTELLIGENCE and the CATTELL-HORN THEORY OF INTELLIGENCE), are distinguished from visual abilities of the kind used in discriminating visual stimuli.

**auditory acuity** sharpness of hearing; the extent to which one is able to detect and discriminate between sounds that are very similar. For example, auditory frequency acuity is the ability to distinguish between sounds that differ in their frequency composition: A 1 kHz tone can be distinguished from a 1005 Hz tone (a 0.5% change), indicating a high degree of auditory frequency acuity.

**auditory agnosia** loss or impairment of the ability to recognize and understand the nature of verbal or nonverbal sounds. Subtypes are distinguished on the basis of the type of auditory stimulus the person has difficulty recognizing, for example, environmental sounds such as a dog barking or keys jingling (**nonverbal auditory agnosia** or **environmental sounds agnosia**), spoken words (PURE WORD DEAFNESS), or music (sensory AMUSIA).

**auditory aphasia** a form of APHASIA characterized by impairment in or loss of the ability to comprehend spoken language despite normal hearing. Also called **word deafness**.

**auditory attributes** perceptual qualities of sound, including LOUDNESS, PITCH, and TIMBRE.

**auditory blending** the ability to synthesize the individual sounds (PHONEMES) of a word so that the whole word can be recognized.

**auditory brainstem response (ABR)** see BRAINSTEM AUDITORY EVOKED RESPONSE.

**auditory canal** see EXTERNAL AUDITORY MEATUS.

**auditory closure** the ability to fill in parts of words that were omitted in auditory presentation. It is typically an au-



omatic process. See CLOSURE; PHONEMIC RESTORATION EFFECT; RESTORATION EFFECT.

**Auditory Consonant Trigram (ACT)** a memory test in which three letters consisting only of consonants, such as *DCJ*, are presented verbally and the participant is asked to recall the sequence following delays of varying lengths (e.g., 9, 18, and 36 seconds). During the delay intervals, the participant performs a distractor task (e.g., counting backwards from a specified number by threes). See BROWN–PETERSON DISTRACTOR TECHNIQUE.

**Auditory Continuous Performance Test (ACPT)** a test that measures a child's ability to attend to auditory stimuli for an extended period. The test comprises six trial lists of one-syllable words. The words are presented at a rapid rate, and the child is instructed to indicate each time a target word occurs. The number of incorrect responses for the entire test provides a measure of overall attention ability; the number of incorrect responses for each of the six trial lists provides an indication of changes in attention during the task. [developed in 1994 by audiologist Robert W. Keith]

**auditory cortex** the sensory area for hearing, located on the upper side of the TEMPORAL LOBE of the cerebral cortex. It receives and processes sound input from the MEDIAL GENICULATE NUCLEUS in the thalamus, a major structure along the AUDITORY PATHWAY. Its main subdivision is the **primary auditory cortex (A1)**, the first cortical region to receive this input. Equivalent to BRODMANN'S AREA 41 and encompassing HESCHL'S GYRUS, A1 displays both FREQUENCY SELECTIVITY and TONOTOPIC ORGANIZATION and is critical to the discrimination and localization of sounds. Neurons in A1 predominantly project to WERNICKE'S AREA. Surrounding A1 is the **secondary auditory cortex (A2)**, the "belt" or peripheral area), whose input from the medial geniculate nucleus is more diffuse, and its tonotopic organization less precise, than that of A1. It provides additional auditory regulation to enhance A1 cortical processing. Also called **auditory projection area**.

**auditory discrimination** the ability to distinguish between sounds. For example, **pitch discrimination** is the ability to detect changes in sound based upon the subjective attribute of pitch. It is more appropriately called **frequency discrimination**, however, because of uncertainty that the discrimination is based upon pitch (e.g., under certain circumstances, a change in frequency produces a change in loudness, and the discrimination could be based on a loudness change rather than a pitch change).

**auditory display 1.** acoustic information presented via headphones, which often includes simulations of realistic listening situations. See VIRTUAL REALITY. **2.** any presentation of acoustic information.

**auditory distance cue** see DISTANCE CUE.

**auditory distance perception** the ability to assess the distance of a sound source based only on acoustic information. Humans are relatively poor at auditory distance perception. The primary cues in realistic listening environments appear to be the amplitude of the sound reaching the listener directly from the source, together with the ratio of direct to reverberant sound energy.

**auditory evoked potential** a biologically produced electrical response to sound. There are many types of auditory evoked potentials, which differ in their methods of recording and processing sounds.

**auditory fatigue** a transient form of hearing loss due to short- or long-term exposure to loud noise.

**auditory feedback** the sound of one's own voice heard while one is speaking, which enables adjustments in intensity, pacing, or clarity of speech. In addition to naturally occurring feedback, there are several types of speaking control systems that provide auditory feedback in voice, speech, and language therapy, including REAL-TIME AMPLIFICATION, DELAYED AUDITORY FEEDBACK, and METRONOMIC PACING.

**auditory filter** the process responsible for the FREQUENCY SELECTIVITY of the auditory system. The initial stages of auditory processing are often described as consisting of a bank of auditory filters with different center frequencies. The term is closely related to the concept of a CRITICAL BAND but with more emphasis on the "shape" or characteristics of the filter rather than simply its critical bandwidth. See TONOTOPIC ORGANIZATION; TUNING CURVE.

**auditory flicker** sound presented as discrete units (with brief gaps) rather than as continuous. See also CRITICAL FLICKER FREQUENCY.

**auditory fusion** the combining of separate acoustic items into a single perceptual image.

**auditory hallucination** the perception of sound in the absence of an auditory stimulus. Hallucinations may, for example, be of accusatory or laudatory voices or of strange noises and other nonverbal sounds. They occur frequently in schizophrenia and other psychotic disorders but may be associated with other conditions as well (e.g., delirium, dementia).

**auditory induction** perceptual restoration of a brief (up to 300 ms) sound segment that is masked or replaced by a louder sound having an appropriate spectral composition.

**auditory labyrinth** see LABYRINTH.

**auditory localization** the ability to identify the position and changes in position of sound sources based on acoustic information. When sounds are presented through headphones, the acoustic image usually appears to originate within the head and lacks the three-dimensional quality of real sound sources. The image can be lateralized on a left–right dimension (**auditory lateralization**)—that is, toward the left or right ear—but not localized in external space. Also called **sound localization**.

**auditory masking** a reduction in the ability to detect, discriminate, or recognize one sound (the signal or target) due to the presence of another sound (the masker), measured as an increase in the detection threshold caused by the masker. The **amount of masking** is the increase in threshold measured in decibels (dB). For example, if the detection threshold with no masker is 10 dB SPL (decibels sound-pressure level) and the masker raises the threshold to 60 dB SPL, the amount of masking is 50 dB or, equivalently, the masker produces 50 dB of masking. The ability of one sound to mask another has been used extensively to assess the FREQUENCY SELECTIVITY of the auditory system. See also CRITICAL BAND; MASKING.

**auditory memory** memory for information obtained by hearing. It may be either SHORT-TERM MEMORY or LONG-TERM MEMORY, and the material retained may be linguistic (e.g., words) or nonlinguistic (e.g., music).

**auditory memory span** the number of simple items,

such as words or numbers, that can be repeated in the same order by a person after hearing the series once. The auditory memory span indicates the capacity of a person's WORKING MEMORY. Also called **auditory span**. See also MEMORY SPAN.

**auditory nerve** the branch of the eighth cranial nerve (see VESTIBULOCOCHLEAR NERVE) concerned with the sense of hearing. It originates in the cochlea, from which nerve fibers pass through several layers of nuclei in the brainstem to terminate predominantly in the AUDITORY CORTEX. Also called **acoustic nerve**; **cochlear nerve**.

**auditory object** see FISSION.

**auditory ossicles** see OSSICLES.

**auditory pathway** the neural route along which auditory information is conveyed from the cochlear HAIR CELLS to the AUDITORY CORTEX. The major structures in the auditory pathway are the COCHLEAR NUCLEUS, SUPERIOR OLIVARY COMPLEX, LATERAL LEMNISCUS, INFERIOR COLLICULUS, and the MEDIAL GENICULATE NUCLEUS.

**auditory perception** the organization and interpretation of sensory information received through the ear. It is a complex process in which pressure changes in the air are funneled into the middle ear, where motion of the TYMPANIC MEMBRANE and the tiny attached bones (OSSICLES) are transmitted to the inner ear and cause vibrations of membranous structures within the coiled, fluid-filled COCHLEA. Many specialized cells in the cochlea amplify and filter the movements through a variety of electromechanical mechanisms. Eventually, HAIR CELLS convert the mechanical motions to neural stimulation that is transmitted along the AUDITORY PATHWAY to the AUDITORY CORTEX for processing.

**auditory perceptual disorder** a former name for CENTRAL AUDITORY PROCESSING DISORDER.

**auditory processing** the processes or mechanisms that underlie HEARING.

**auditory processing disorder** see CENTRAL AUDITORY PROCESSING DISORDER.

**auditory projection area** see AUDITORY CORTEX.

**auditory sensation** the sensation produced by a sound or other AUDITORY STIMULUS.

**auditory sensation level** see SENSATION LEVEL.

**auditory sensation unit** the just noticeable difference in sound intensity. See DIFFERENCE THRESHOLD.

**auditory sensory memory** see ECHOIC MEMORY.

**auditory skills** the skills related to hearing, including AUDITORY DISCRIMINATION, auditory attention, and AUDITORY MEMORY. Also called **central auditory abilities**.

**auditory space perception** perception of the direction, distance, and elevation of a sound source. See AUDITORY LOCALIZATION.

**auditory span** see AUDITORY MEMORY SPAN.

**auditory spectrum** a term sometimes used to denote the AUDIBILITY RANGE.

**auditory stimulus** a stimulus capable of eliciting auditory sensation. It usually refers to airborne sound but can include vibration produced by BONE CONDUCTION or by internally generated events.

**auditory system** the biological structures and processes

responsible for hearing. The **peripheral auditory system**, or **auditory periphery**, includes the external, middle, and inner ears and the AUDITORY NERVE. Auditory structures of the brain, including the AUDITORY CORTEX, constitute the **central auditory system**.

**auditory threshold** **1.** the minimum level of sound that can be detected by an organism. See ABSOLUTE THRESHOLD. **2.** any threshold pertaining to hearing, including DIFFERENCE THRESHOLDS, pain thresholds, acoustic reflex thresholds, and bone-conduction thresholds.

**auditory thrombosis** a blood clot in the internal auditory artery, resulting in sudden deafness.

**auditory training** helping people with hearing loss to distinguish sounds and understand spoken language better by teaching them how to make the most effective use of their residual hearing and to discern contextual clues related to situations and environments.

**Auditory Verbal Learning Test (AVLT)** see REY AUDITORY VERBAL LEARNING TEST.

**Aufgabe** *n.* a predisposition toward particular mental operations inherent in the nature of a task or conveyed by the instructions for performing it. Introduced by the WÜRZBURG SCHOOL in their introspective experiments on mental processes, the concept became a precursor to the later DETERMINING TENDENCY and the modern MENTAL SET. [German: "assignment"]

**augmentation** *n.* **1.** an increase in the amplitude of AVERAGE EVOKED POTENTIAL, either above background noise in the average-evoked-response technique or by more than would be expected from the increase in the stimulus. **2.** more generally, any increase, enlargement, growth, or intensification.

**augmentation principle** see ATTRIBUTION THEORY.

**augmentation strategy** a mechanism to increase the effectiveness of pharmacological agents by the addition of other agents. Augmentation strategies are most commonly used in the treatment of depression.

**augmentative communication** communication facilitated, aided, or expanded by a resource other than the communicator. An example is provision of an easy-to-access online dictionary or thesaurus to e-mail recipients, or of links to websites for additional information regarding news items. See also FACILITATED COMMUNICATION.

**augury** *n.* the DIVINATION of future events on the basis of OMENS, portents, or other signs. In ancient Rome, an **augur** was a priest whose interpretations of natural phenomena (e.g., meteorological events, the flights of birds) were used to guide public decisions.

**aura** *n.* **1.** a subjective sensation that precedes an epileptic seizure or migraine headache. It may include such phenomena as strange tastes or odors, flashes of light (a **visual aura**), numbness, and feelings of unreality or DÉJÀ VU. **2.** in PARAPSYCHOLOGY, a subtle halo or emanation that purportedly surrounds every person, animal, plant, or object. Some SENSITIVES claim to be able to discern such auras, which can allegedly reveal an individual's personal qualities as well as his or her state of physical health. It is also claimed that auras may be rendered visible by such means as KIRLIAN PHOTOGRAPHY and the use of KILNER SCREENS. In SPIRITUALISM and theosophy, a person's aura is sometimes identified with his or her astral body (see ASTRAL PROJECTION); in other traditions, it may be seen as the man-

ifestation of a life force or energy field. See also EFFLUVIUM; REICHENBACH PHENOMENON.

**aural** *adj.* pertaining to or perceived by the ear.

**aural harmonic** a distortion product generated within the ear. See HARMONIC.

**auricle** *n.* **1.** see PINNA. **2.** a small ear-shaped pouch that extends from the upper anterior portion of each ATRIUM of the heart.

**auscultation** *n.* a diagnostic method in which the examiner listens for sounds within the body either with the aid of a stethoscope (mediate auscultation) or directly by laying the ear on the surface of the body (immediate auscultation).

**Austrian school** the theoretical developments in psychology associated principally with the universities of Vienna and Graz in Austria at the end of the 19th century. Influenced by Franz BRENTANO and Ernst MACH, the emphasis was on the mental processes that produced whole, organized perceptions, a focus that was a precursor to GESTALT PSYCHOLOGY. See ACT PSYCHOLOGY.

**aut-** combining form see AUTO-.

**autassassinophilia** *n.* a PARAPHILIA in which sexual arousal and the achievement of orgasm are facilitated by the fantasy or belief that one is in danger of being killed. This may include the individual staging a sexual encounter characterized by extreme MASOCHISM with the real potential for his or her own murder. Also called **autoassassinatophilia**. Compare HOMICIDOPHILIA.

**autemesia** *n.* vomiting for which no organic cause can be identified.

**authenticity** *n.* **1.** in psychotherapy and counseling, genuineness and caring demonstrated by the therapist or counselor through a down-to-earth attitude that the client senses to be a reflection of the true person and not simply of a professional acting in his or her professional role. **2.** in EXISTENTIALISM, a mode of being that humans can achieve by accepting the burden of freedom, choice, and responsibility and the need to construct their own values and meanings in a meaningless universe. —**authentic** *adj.*

**authoritarian** *adj.* **1.** describing or relating to a political system or social climate that involves the restriction of individual freedoms and the subjugation of individuals to a centralized, hierarchical authority. For example, an authoritarian group is one in which decisions rest solely with the leader. **2.** describing an individual, especially but not limited to one in a position of authority, who uses or favors restrictive, autocratic methods when interacting with others. See AUTHORITARIAN PERSONALITY. —**authoritarianism** *n.*

**authoritarian conscience** the type of conscience that is guided by (a) fear of an external authority or (b) the voice of an internalized external authority, such as the SUPEREGO. Compare HUMANISTIC CONSCIENCE. [defined by Erich FROMM]

**authoritarian leader** the type of leader who determines policy and makes decisions without seeking input from followers, rejects any suggestions from others, assigns tasks to group members without considering their preferences, and dominates interactions through frequent criticism. Also called **autocratic leader**. Compare DEMOCRATIC LEADER; LAISSEZ-FAIRE LEADER. [defined by Kurt

LEWIN and his colleagues in experimental studies of leadership styles]

**authoritarian parenting** see PARENTING.

**authoritarian personality** a personality pattern characterized by strict adherence to highly simplified conventional values, an attitude of great deference to authority figures while demanding subservience from those regarded as lower in status, and hostility toward people who deviate from conventional moral prescriptions.

**authoritative parenting** see PARENTING.

**authority** *n.* the capacity to influence others. Formal authority enables an individual to exert influence as a result of either high, legally recognized office (**legitimate authority**) or high rank in a long-established but not legally codified hierarchy (**traditional authority**). Informal authority is based on the individual having either attributes that facilitate the achievement of a group's goals (**rational** or **expert authority**) or an attractive and authoritative personality serving to enhance his or her credibility (**charismatic authority**).

**authority and social order maintaining orientation** see CONVENTIONAL LEVEL.

**authority complex** a pattern of emotionally charged concepts of authority that are partially or completely repressed. To satisfy an unconscious need for authority, a person projects power onto certain other people (see PROJECTION) and experiences inferiority in their presence. Therefore, reactions to authority often take the form of oversubmission.

**authority relations** see STATUS RELATIONS.

**autism** *n.* **1.** a neurodevelopmental disorder characterized by markedly impaired social interactions and verbal and nonverbal communication; narrow interests; and repetitive behavior. Manifestations and features of the disorder appear before age 3 but vary greatly across children according to developmental level, language skills, and chronological age. They may include a lack of awareness of the feelings of others, impaired ability to imitate, absence of social play, abnormal speech, abnormal nonverbal communication, and a preference for maintaining environmental sameness. Classified in DSM-IV-TR as a PERVASIVE DEVELOPMENTAL DISORDER, autism has been subsumed into AUTISM SPECTRUM DISORDER in DSM-5 and is no longer considered a distinct diagnosis. Also called **autistic disorder**; **childhood autism**; **early infantile autism**; **infantile autism**; **Kanner's syndrome**. **2.** in schizophrenia, an abnormal preoccupation with the self and fantasy such that there is a lack of interest in or ability to focus on external reality. —**autistic** *adj.*

**autism spectrum disorder (ASD)** any one of a group of disorders with an onset typically occurring during the preschool years and characterized by varying but often marked difficulties in communication and social interaction. ASD was formerly said to include such disorders as the prototype AUTISM, ASPERGER'S DISORDER, CHILDHOOD DISINTEGRATIVE DISORDER, and RETT SYNDROME; it was synonymous with PERVASIVE DEVELOPMENTAL DISORDER but more commonly used, given its reflection of symptom overlap among the disorders. It is now the official term used in DSM-5, where it encompasses and subsumes these disorders: Autism, Asperger's disorder, and childhood disintegrative disorder are no longer considered distinct diagnoses, and medical or genetic disorders that may be as-

sociated with ASD, such as Rett syndrome, are identified only as specifiers of the disorder. Also called **autistic spectrum disorder**.

**autistic-contiguous position** in OBJECT RELATIONS THEORY, a primitive, preverbal mode of normal infant experience that emphasizes sensory contact with others. If such surface contact is not soothing and comforting, the infant may react to the world as potentially dangerous, a reaction that could become pathological if it becomes rigidified as a defensive style. The concept was introduced by U.S. psychoanalyst Thomas Ogden to describe a mode of relating to the world that precedes Melanie KLEIN's PARANOID-SCHIZOID POSITION and DEPRESSIVE POSITION. Also called **autistic-contiguous mode**.

**autistic disorder** see AUTISM.

**autistic fantasy** a DEFENSE MECHANISM in which a person deals with emotional conflict and stressors by indulging in excessive daydreaming as a substitute for active problem solving.

**autistic savant** see SAVANT.

**autistic thinking** narcissistic, egocentric thought processes, such as fantasizing and daydreaming, that have little or no relation to reality. It is similar to dereistic thinking (see DEREISM), but the emphasis is on self-absorption rather than disconnection from reality. The term is highly inaccurate and misleading regarding the characteristics of autism.

**auto-** (**aut-**) *combining form* **1.** self (e.g., AUTOBIOGRAPHY). **2.** self-caused (e.g., AUTOMASOCHISM).

**autoagonistophilia** *n.* sexual arousal from being observed or filmed while engaging in sexual activity.

**autoassassinatophilia** *n.* see AUTASSASSINOPHILIA.

**autobiographical memory** **1.** a person's memory for episodes or experiences that occurred in his or her own life. Often the terms *autobiographical memory* and EPISODIC MEMORY are used interchangeably. However, autobiographical memory can consist of information stored in episodic memory (i.e., of events experienced at a particular time and place), SEMANTIC MEMORY (i.e., of knowledge of general facts and concepts that give meaning to information), or a mix of the two. For example, the autobiographical memory of one's first day at school might contain episodic information, such as meeting the teacher, but it might also contain semantic information, such as knowledge that the teacher's name was Susan. **2.** more broadly, memory for any information about the self, including not only personal experiences but also self-related factual knowledge, the SELF-SCHEMA, and so forth.

**Autobiographical Memory Interview (AMI)** a semistructured interview designed to assess memory for autobiographical information, impairment of which is often indicative of retrograde amnesia (inability to recall previously learned information or past events) and potentially associated with a variety of neurological and psychiatric disorders. The AMI contains an Autobiographical Incidents Schedule, which queries specific, personally experienced events from childhood, early adult life, and the recent past; and a Personal Semantic Memory Schedule, which queries generic or semantic facts about the self, divided into childhood, early adult life, and recent information. [developed in 1989 by British neuropsychiatrist Michael D. Kopelman, British clinical psychologist Barbara

A. Wilson, and British cognitive psychologist Alan D. Baddeley (1934– )]

**autobiography** *n.* in therapy or counseling, a technique in which a LIFE HISTORY, written by the client from his or her own point of view, is used to obtain information regarding the client's behavioral patterns and feelings. A **structured autobiography** is based on explicit questions or topic guidelines supplied by the therapist or counselor. An **unstructured autobiography** contains no guidelines. See also LIFE REVIEW.

**autocentric** *adj.* centered on or within the self. Compare ALLOCENTRIC.

**autochthonous** *adj.* **1.** native, indigenous, or original. **2.** denoting ENDOGENOUS processes and events that originate within the individual, independently of external influences. Compare ALLOCHTHONOUS.

**autochthonous gestalt** a perceptual pattern induced by internal factors (**autochthonous forces**) rather than factors of the external stimulus.

**autoclititic** *n.* a unit of VERBAL BEHAVIOR (a verbal OPERANT) that depends on other verbal behavior and that alters its effect on a listener. For example, in saying "I think that is a cat," the words *I think* serve as an autoclititic to indicate to the listener that the speaker is less than certain about the remaining verbal operants in the sentence. The *is* is also an autoclititic, indicating that the same stimulus is occasioning the words *that* and *cat*.

**autocorrelation** *n.* the situation in which successive values of a variable measured over time are correlated with other values of the same series separated from them by a specific interval. This often occurs with economic or demographic data. Autocorrelations are generally assumed to be linear relationships and may be presented graphically in an **autocorrelogram** or formulaically in an **autocorrelation function**. Also called **serial correlation**. See TIME-SERIES ANALYSIS.

**autocratic** *adj.* **1.** dictatorial, high-handed, and undemocratic. **2.** wielding unlimited power and not permitting opposition. —**autocrat** *n.*

**autocratic leader** see AUTHORITARIAN LEADER.

**autocrine** *adj.* describing or relating to a type of cellular signaling in which a chemical messenger is secreted by a cell into its environment and feeds back to elicit a response in the same cell. For example, some nerve cells have AUTORECEPTORS that are affected by neurotransmitter molecules released by the same cell. Compare ENDOCRINE; PARACRINE.

**autodysomophobia** *n.* see OLEFACTORY REFERENCE SYNDROME.

**autoenucleation** *n.* an act of self-mutilation in which an individual excises an organ or tumor from his or her own body, as, for example, when a person with a psychotic disorder removes an eyeball (see ENUCLEATION). Also called **self-enucleation**.

**autoerotic asphyxia** sexual pleasure obtained from being unable to breathe during masturbation. It may involve the person hanging himself or herself, a practice that has been found to result in a number of accidental deaths each year when the person is unable to get free of the rope. Also called **autoerotic asphyxiation**.

**autoeroticism** *n.* the creation of sexual excitement and gratification by the self, whether through masturbation,

other sexual behaviors (e.g., stimulating nongenital portions of the body), or thoughts (e.g., daydreams, fantasies). Also called **autoerotism**. Compare ALLOEROTICISM. —**autoerotic** *adj.* [defined by British sexologist Havelock Ellis (1859–1939)]

**autoerythrocyte sensitization syndrome** see GARDNER–DIAMOND SYNDROME.

**autoflagellation** *n.* sexual pleasure derived from striking, whipping, or beating oneself.

**autogenic training** a relaxation technique in which a quasi-hypnotic state is self-induced and deep relaxation is achieved through mental imagery, breath control, and exercises that focus attention on physical sensations, including warmth and heaviness of the limbs, a regular heartbeat, abdominal warmth, and cooling of the forehead. The aim is to reduce stress by gaining control of autonomic arousal associated with anxiety and to obtain an IDEAL PERFORMANCE STATE. [developed in the early 20th century by German neurologist Johannes Heinrich Schultz (1884–1970)]

**autognosis** *n.* knowledge of self.

**autographism** *n.* see DERMATOGRAPHISM.

**autohypnosis** *n.* see SELF-HYPNOSIS. —**autohypnotic** *adj.*

**autohypnotic amnesia** a Jungian term for REPRESION, based on the observation that a form of amnesia may be induced in a person under hypnosis (see HYPNOTIC AMNESIA; POSTHYPNOTIC AMNESIA). Repression in this context is seen as a form of systematic amnesia, in which the individual “forgets” certain ideas or memories through a process of autosuggestion.

**autoimmunity** *n.* a condition in which the body’s immune system fails to recognize its own tissues as “self” and attempts to reject its own cells. It is a primary factor in the development of such diseases as rheumatoid arthritis and systemic lupus erythematosus (called **autoimmune disorders**). —**autoimmune** *adj.*

**autokinesis** *n.* any movement that is voluntary.

**autokinetic effect** the illusion of seeing a static spot of light moving in a dark room. The autokinetic effect has been used in certain psychological experiments, for example, investigating suggestibility or the establishment of group norms. Also called **autokinetic illusion**.

**automaintenance** *n.* a procedure in which stimulus–reinforcer pairings are used to sustain an already established behavior. It is most commonly used with pigeons. Signals are presented, regardless of behaviors, on a response device (e.g., a pecking disk), and reinforcement (e.g., food) is delivered after a specified time period regardless of the pigeons’ pecking activity.

**automasochism** *n.* sexual pleasure derived from inflicting pain on oneself during masturbation or during sexual activity with a partner. See also SEXUAL MASOCHISM.

**automated assessment** see COMPUTERIZED ASSESSMENT.

**automated desensitization** the use of devices such as digitized media to facilitate the presentation of anxiety-provoking and relaxing stimuli during SYSTEMATIC DESENSITIZATION. It is especially helpful in situations where a client is reluctant to undergo desensitization in the presence of the therapist. See DEVICE FOR AUTOMATED DESENSITIZATION.

**automated natural language understanding** understanding speech or writing through computer-based processes. *Understanding* in this context means determining the meaning of what is spoken or written, enabling an appropriate response to questions or commands. Compare AUTOMATED SPEECH RECOGNITION.

**automated reasoning** computer-based mathematical reasoning, including geometric theorem proving, algebraic equation solving, and mathematical theorem proving. It is a subdiscipline of ARTIFICIAL INTELLIGENCE.

**automated speech recognition (ASR)** recognition of speech by means of a computer-based process. *Recognition* in this context usually means the production of a written representation of the words spoken. Unlike AUTOMATED NATURAL LANGUAGE UNDERSTANDING, ASR does not require an understanding of the meanings of the words recognized.

**automatic action** an act that is performed without requiring attention or conscious awareness.

**automatic activation** involuntary processing of stimuli and preparation for associated responses. This activation tends to occur more rapidly than that resulting from voluntary processing.

**automatic activation of attitudes** the spontaneous activation of an attitude from memory on encountering the ATTITUDE OBJECT. The likelihood of automatic activation depends on the ATTITUDE ACCESSIBILITY.

**automatic drawing** the act of drawing images or objects while in a hypnotic trance or in a situation in which attention is distracted. It may be used in HYPNOTHERAPY to provide a therapist with access to unconscious material from the client. See also AUTOMATIC WRITING.

**automaticity** *n.* the quality of a behavior or mental process that can be carried out rapidly and without effort or explicit intention (an **automatic process**). In brain imaging studies, automatic processes show dramatic decreases in cortical activity. See also DEAUTOMATIZATION HYPOTHESIS; HABIT.

**automatic obedience** excessive, uncritical, or mechanical compliance with the requests, suggestions, or commands of others.

**automatic performance** see ROUTINIZED BEHAVIOR.

**automatic process** see AUTOMATICITY.

**automatic promotion** see SOCIAL PROMOTION.

**automatic reinforcer** a physical or sensory consequence of a behavior that serves to reinforce the behavior, without the influence of another individual. An example is a person continuing to read a book because he or she enjoys it.

**automatic speaker recognition** identification of a speaker by means of an analysis, usually computer-based, of the characteristics of his or her speech. Also called **automatic speaker identification**.

**automatic speech** **1.** speech that erupts involuntarily, or without conscious control. It sometimes occurs as a consequence of dementia, Tourette’s syndrome, or highly emotional states. Automatic speech is not to be confused with synthesized or SYNTHETIC SPEECH. **2.** speech that is uttered with little or no conscious consideration of the spoken material, such as the days of the week, numbers, the alphabet, and other well-learned material.

**automatic thoughts** **1.** thoughts that are instantaneous, habitual, and nonconscious. Automatic thoughts affect a person's mood and actions. Helping individuals to become aware of the presence and impact of negative automatic thoughts, and then to test their validity, is a central task of COGNITIVE THERAPY. **2.** thoughts that have been so well learned and habitually repeated that they occur without cognitive effort. Also called **routinized thoughts**.

**automatic writing** the act of writing while one's attention is not focused on the task or of writing without conscious awareness, as during a hypnotic trance. It may be used in HYPNOTHERAPY to provide a therapist with access to unconscious material from the client. See also AUTOMATIC DRAWING.

**automatism** *n.* nonpurposeful behavior performed mechanically, without intention and without conscious awareness. It may be motor or verbal and ranges from simple repetitive acts, such as lipsmacking or repeatedly using the same phrase (e.g., *as it were*), to complex activities, such as sleepwalking and automatic writing. Automatism is seen in several disorders, including CATATONIC SCHIZOPHRENIA and COMPLEX PARTIAL SEIZURES.

**automatism defense** a legal defense consisting of the claim that criminal intent (see MENS REA) is lacking as a result of the defendant's dissociated state at the time the criminal act was committed. The defense is more common in the United Kingdom and Canada than in the United States.

**automatization** *n.* **1.** the development of a skill or habit to a point at which it becomes routine and requires little if any conscious effort or direction. **2.** the state of individuals who respond to compulsive impulses so automatically that they may be described as automata (see AUTOMATON).

**automatograph** *n.* a classic device used to measure movement. It consists of a plate that lies on metal balls and thus follows every impulse of the hand that lies flat on it: The plate has an attachment by which the slightest involuntary movements are registered.

**autmaton** *n.* **1.** a machine that simulates human functions (e.g., a mechanized installation device on a conveyor belt) via preprogrammed coded instructions. See also CYBERNETICS; FEEDBACK; ROBOTICS. **2.** a human acting in an autonomous and routine manner, seemingly without an external driving force. See also AUTOMATIZATION.

**automotive telematics** technology for delivering information to moving automobiles and other road vehicles. The information can include traffic conditions on routes of interest, alternative routing, hotel accommodation, safety news, and entertainment for passengers.

**automutilation** *n.* sexual pleasure derived from mutilating parts of one's body or from fantasy about mutilated parts of one's body. It usually involves cutting some part of the body during masturbation.

**autonecrophilia** *n.* sexual pleasure derived from the fantasy that one is dead and that another person is having sexual relations with one's dead body.

**autonoetic** *adj.* describing a state of knowledge or memory in which one is aware not only of the known or remembered thing but also of one's personal experience in relation to that thing. **Autonoetic consciousness** is a corresponding kind of consciousness in which one's knowledge of facts, concepts, and meanings is mediated through an

awareness of one's own existence in time. Compare ANOETIC; NOETIC. [defined Endel TULVING]

**autonomic** *adj.* occurring involuntarily, particularly pertaining to the AUTONOMIC NERVOUS SYSTEM or the processes controlled by it. —**autonomically** *adv.*

**autonomic apparatus** all the body organs, including the endocrine glands and viscera, that are controlled by the AUTONOMIC NERVOUS SYSTEM.

**autonomic balance** the complementary and reciprocal interactions of the sympathetic and parasympathetic branches of the AUTONOMIC NERVOUS SYSTEM.

**autonomic conditioning** in CLASSICAL CONDITIONING, a procedure in which the conditioned response measured is an index of physiological arousal, usually an electrodermal measure such as SKIN CONDUCTANCE. The conditioned stimulus is usually a simple visual or auditory stimulus presented for 5 to 10 seconds, whereas the unconditioned stimulus is a mildly aversive stimulus such as an electric shock or a loud noise.

**autonomic dysfunction** dysfunction of the AUTONOMIC NERVOUS SYSTEM, including impairment, failure, or overactivity of sympathetic or parasympathetic functioning. The dysfunction may be local or generalized, acute or chronic, and is associated with a number of disorders. Also called **autonomic neuropathy**; **dysautonomia**. See also FAMILIAL DYSAUTONOMIA.

**autonomic dysreflexia** exaggerated activity of the AUTONOMIC NERVOUS SYSTEM in an individual with a spinal cord injury at or above the level of the sixth thoracic vertebra. It is caused by irritation, pain, or similar stimulation of the nervous system below the area of the injury and may be fatal. Symptoms include the sudden onset of headache and hypertension; there may also be ARRHYTHMIA, sweating, dilated pupils, blurred vision, nasal stuffiness, flushing, and gooseflesh. Also called **autonomic hyperreflexia**.

**autonomic ganglia** the ganglia of the AUTONOMIC NERVOUS SYSTEM. They include the two chains of sympathetic ganglia (see SYMPATHETIC CHAIN) and the more peripheral parasympathetic ganglia (see PARASYMPATHETIC NERVOUS SYSTEM).

**autonomic hyperactivity** arousal of the AUTONOMIC NERVOUS SYSTEM, particularly its SYMPATHETIC NERVOUS SYSTEM functions, resulting in the physiological symptoms associated with anxiety and fear (e.g., sweating, palpitations, dry mouth, light-headedness, upset stomach).

**autonomic hyperreflexia** see AUTONOMIC DYSREFLEXIA.

**autonomic learning** a type of learning in which the responses learned consist of changes in functions involving the AUTONOMIC NERVOUS SYSTEM, such as heart rate or blood pressure. See also CONDITIONED RESPONSE.

**autonomic motor pool** MOTOR NEURONS in the brainstem and spinal cord that give rise to nerves that supply AUTONOMIC GANGLIA.

**autonomic nervous system (ANS)** the portion of the nervous system innervating smooth muscle and glands, including the circulatory, digestive, respiratory, and reproductive organs. It is divided into the SYMPATHETIC NERVOUS SYSTEM and PARASYMPATHETIC NERVOUS SYSTEM. **Autonomic responses** typically involve changes in involuntary bodily functions, such as heart rate, salivation, digestion, perspi-

ration, pupil size, hormone secretion, bladder contraction, and engorgement of the penis and clitoris. The system is called autonomic because it was once thought to function independently of the central nervous system.

**autonomic neuropathy** see AUTONOMIC DYSFUNCTION.

**autonomic reactivity** **1.** the extent to which an organism responds physiologically to a stimulus, such as a stressor. **2.** a pattern of responses of the AUTONOMIC NERVOUS SYSTEM that is characteristic of an individual throughout life. Also called **autonomic response specificity**; **individual response stereotypy**.

**autonomic response** see AUTONOMIC NERVOUS SYSTEM.

**autonomic restrictors** people with GENERALIZED ANXIETY DISORDER, who have lower heart rate, blood pressure, skin conductance, and respiration rate than do people with other anxiety disorders.

**autonomous** *adj.* **1.** having an independent existence. **2.** acting or operating under one's own direction. **3.** having self-government. Compare HETERONOMOUS.

**autonomous activity** in GENERAL SYSTEMS THEORY, processes or behaviors that occur spontaneously, in the absence of external eliciting stimuli.

**autonomous depression** **1.** a MAJOR DEPRESSIVE EPISODE that does not occur in response to any obvious psychosocial stressor. See also ENDOGENOUS DEPRESSION. **2.** less commonly, depression characterized by agitation and self-criticism.

**autonomous stage** in Jean PIAGET's theory of moral development, the stage during which the child, typically 10 years of age or older, eventually understands that rules and laws are not permanent, fixed properties of the world but rather are flexible, modifiable entities created by people. The child gradually relies less on parental authority and more on individual and independent morality and learns that intentions, not consequences or the likelihood of punishment, are important in determining the morality of an act. Also called **autonomous morality**. See MORAL INDEPENDENCE; MORAL RELATIVISM. Compare HETERONOMOUS STAGE; PREMORAL STAGE.

**autonomous states of mind** the mental processes exhibited by parents or primary caregivers who are able to discuss coherently their thoughts, feelings, and memories about their own childhood ATTACHMENT experiences. Such individuals are said to demonstrate an autonomous or secure sense of attachment, characterized by an understanding of the importance of nurturance. In contrast, parents or primary caregivers who are not coherent in discussing their childhood experiences are said to have insecure, "nonautonomous" states of mind, characterized by dismissive or conflicted feelings about attachments. Studies indicate that those with autonomous states of mind are likely to raise children who are securely attached themselves (e.g., who seek a mother's comfort when upset or hurt), whereas those with nonautonomous states are likely to raise children who are also insecurely attached (e.g., who do not seek a mother's comfort when distressed). This construct is one of the components of the ATTACHMENT AND BIOBEHAVIORAL CATCH-UP INTERVENTION. See also INSECURE ATTACHMENT; SECURE ATTACHMENT. [described by U.S. psychologist Mary Dozier (1954– )]

**autonomous syntax** the theory that SYNTAX is an autonomous component of language that operates independently of meaning (semantics) and function (pragmatics).

Such a view explains how a sentence with no meaningful content or communicative function can nevertheless be recognized as grammatical by native speakers (see GRAMMATICALITY). It also explains why syntactic rules, such as number agreement between subject and verb, operate regardless of the semantic relationship between the sentence elements. For example, in the two sentences *The boy is slamming the doors* and *The doors are being slammed by the boy*, the verb takes different forms to agree with the grammatical subject in each case (*boy is*; *doors are*), regardless of the fact that in both cases the boy is the AGENT of the action, and the doors are its PATIENT. See CASE GRAMMAR. [introduced by Noam CHOMSKY]

**autonomous work groups** small, self-regulated, employee-centered units within an organization that are given responsibility for developing procedures, organizing the production process, generating the required product, and maintaining quality.

**autonomy** *n.* **1.** a state of independence and self-determination in an individual, a group, or a society. According to some theories, an inordinate focus on self-determination and achievement represents a risk factor for the development of MAJOR DEPRESSIVE DISORDER. See also FUNCTIONAL AUTONOMY. Compare HETERONOMY. **2.** in SELF-DETERMINATION THEORY more specifically, the experience of acting from choice, rather than feeling pressured to act. This form of autonomy is considered a fundamental psychological need that predicts well-being.

**autonomy versus shame and doubt** the second of ERIKSON'S EIGHT STAGES OF PSYCHOSOCIAL DEVELOPMENT, between the ages of 1½ and 3 years. During this stage, children acquire a degree of self-reliance and self-confidence if allowed to develop at their own pace but may begin to doubt their ability to control themselves and their world if parents are overcritical, overprotective, or inconsistent.

**autopagnosia** *n.* see AUTOTOPAGNOSIA.

**autophagy** *n.* **1.** the chewing or eating of one's own flesh. **2.** the body's maintenance of nutrition by consumption of its own tissues, as in times of excessive fasting. Also called **autophagia**.

**autophony** *n.* the hearing of one's own voice reverberating inside one's head. Autophony is usually caused by diseases of the middle ear, such as serous OTITIS MEDIA, a condition called **patulous eustachian tube** in which the eustachian tube remains open, or SUPERIOR CANAL DEHISCENCE. Also called **autophonia**; **autophonic response**.

**autoplasty** *n.* **1.** adaptation to reality by modifying one's own behavioral patterns, rather than by altering one's environment. Autoplastic behavior can be negative and psychologically harmful, as in the development of neurotic behavior, or positive and psychologically healthy, as in the tendency toward more adaptive thinking and action following psychotherapeutic intervention. Also called **autoplastic development**. **2.** surgical repair using tissue from another part of the patient's body. Compare ALLOPLASTY. —**autoplastic** *adj.*

**autopoesis** *n.* a system, often a COGNITIVE ARCHITECTURE, in which the constituent modular components support, nurture, and maintain each other.

**autopsy** *n.* a procedure in which the body of a dead person is examined in an effort to determine the exact cause and time of death. For legal, religious, and cultural rea-

sons, an autopsy generally cannot be performed without permission of the next of kin or an order of the public authorities. The procedure usually requires a detailed dissection of body tissues, laboratory tests, and other techniques when the death occurs under suspicious circumstances. Also called **postmortem examination**. See also PSYCHOLOGICAL AUTOPSY.

**autopsychic delusion** a delusion about one's personality. It is thus distinguished from an ALLOPSYCHIC DELUSION, which refers to the outside world, and a SOMATIC DELUSION, which refers to one's own body. [defined by German neurologist Karl Wernicke (1848–1905)]

**autopsychosis** *n.* a delusional condition in which the individual maintains distorted ideas about himself or herself, such as being the world's savior, the devil incarnate, or an unrecognized genius. —**autopsychotic** *adj.*

**autoradiography** *n.* a histological technique that reveals the distribution of radioactive chemicals in tissues or in analytical media, such as electrophoretic plates. —**autoradiographic** *adj.*

**autoreceptor** *n.* a molecule in the membrane of a presynaptic neuron that regulates the synthesis and release of a neurotransmitter by that neuron by monitoring how much transmitter has been released and "telling" the neuron.

**autoregression** *n.* a pattern of relationship between repeated measures of a variable taken over time, such that the variable as observed at one point in time is predicted by the variable observed at one or more earlier points in time. See TIME-SERIES ANALYSIS.

**autoregressive model (AR model)** a model used to represent TIME SERIES that demonstrate AUTOREGRESSION, that is, where each successive observation depends, at least in part, on one or more previously observed values.

**autoscope** *n.* a device or instrument that records or magnifies small muscular movements.

**autoscopophilia** *n.* sexual pleasure derived from observing oneself disrobing, being nude, or watching oneself during sexual activity. It may involve viewing videos or pictures of these situations.

**autoscopy** *n.* seeing a double of oneself in external space. The image is generally short-lived and hazy, filmy, and colorless. Also called **autosopic phenomenon**. See also DOPPELGÄNGER PHENOMENON; OUT-OF-BODY EXPERIENCE.

**autosexuality** *n.* any form of sexual arousal or stimulation that occurs without the participation of another individual, for example, masturbation, sexual dreams, or sexual fantasies.

**autoshaping** *n.* a form of conditioning in which a subject that has been given reinforcement following a stimulus, regardless of its response to that stimulus, consistently performs an irrelevant behavior. The classic example is a pigeon that receives food after a light goes on, then conditions itself to peck at the light even though the pecking is not necessary to receive the food.

**autosomal** *adj.* denoting a genetic characteristic located on or transmitted by an AUTOSOME.

**autosomal aberration** any disorder of structure, function, or both that is associated with an alteration in the structure or number of any of the pairs of chromo-

somes that are not sex chromosomes (see AUTOSOME). An example of such a disorder is DOWN SYNDROME. Also called **autosomal abnormality**; **autosomal anomaly**.

**autosomal dominant** see DOMINANT ALLELE.

**autosomal recessive** see RECESSIVE ALLELE.

**autosomal trisomy of group G** the condition in which either of the chromosome pairs 21 or 22 (known as group G) includes an additional autosome. The most common of these two autosome abnormalities is trisomy 21; see DOWN SYNDROME.

**autosome** *n.* any chromosome that is not a SEX CHROMOSOME. A human normally has a total of 44 autosomes (arranged in 22 HOMOLOGOUS pairs) in the nucleus of each body cell, although irregular numbers may occur through the loss or addition of one or more autosomes. If a homologous pair of autosomes has an extra chromosome, the condition is called **trisomy**. If one member of a homologous pair is absent, the condition is called **monosomy**.

**autostereogram** *n.* a two-dimensional arrangement of repeated elements that produces a perception of three-dimensional depth when viewed correctly. See RANDOM-DOT STEREOGRAM; STEREOGRAM.

**autostereotyping** *n.* incorporating STEREOTYPES about the groups to which one belongs into one's own SELF-CONCEPT. Also called **self-stereotyping**. See GROUP IDENTIFICATION. —**autostereotype** *vb.*

**autostimulation theory** a widely held supposition that REM SLEEP in newborn infants facilitates early development of the visual system. It is also thought to explain why REM sleep decreases as infants are exposed to more and more interesting visual stimuli while awake.

**autosuggestibility** *n.* susceptibility to being influenced by one's own suggestions, as in SELF-HYPNOSIS.

**autosuggestion** *n.* the process of making positive suggestions to oneself for such purposes as improving morale, inducing relaxation, or promoting recovery from illness. Also called **self-suggestion**. See also AUTOGENIC TRAINING; SELF-AFFIRMATION.

**autotomy** *n.* **1.** in animal behavior, the casting off of a body part, as, for example, when a lizard sheds its tail to escape from a predator. **2.** SELF-MUTILATION or the cutting off by an individual of his or her body parts.

**autotopagnosia** *n.* a type of AGNOSIA involving loss or impairment of the ability to recognize (i.e., point to) parts of one's own body. It is generally associated with a left parietal lobe neoplasm. Also called **autopagnosia**. Compare SOMATOTOPAGNOSIA.

**auxiliary** **1.** *adj.* subsidiary or supporting. **2.** *n.* a person or thing that provides support, usually in a subsidiary capacity. **3.** *n.* see AUXILIARY VERB.

**auxiliary ego** in PSYCHODRAMA, a group member, other than the therapist, who assumes the role of a significant figure in the PROTAGONIST's life.

**auxiliary inversion** in grammar, the reversal of the usual order of SUBJECT and AUXILIARY VERB in a declarative sentence to create a question so that, for example, *The poodle is barking* becomes *Is the poodle barking?* Such constructions are of major interest in GENERATIVE GRAMMAR and PSYCHOLINGUISTICS. See INTERROGATIVE.

**auxiliary organ** see EXECUTIVE ORGAN.



**auxiliary therapist** a therapist who takes part in CO-THERAPY.

**auxiliary verb** a verb that is used to indicate the TENSE, MOOD, or VOICE of another verb, such as *have* in *The ship had sunk*, *do* in *Do you pray?*, and *be* in *I was met by a friend*. Other common auxiliary verbs in English are *can*, *could*, *shall*, *should*, *will*, *would*, *may*, *might*, and *must*. Also called **auxiliary**.

**ava** *n.* see KAVA.

**availability** *n.* the presence of information in memory storage. Availability is not the same as and should be distinguished from **accessibility**, which refers to the ability of a portion of information to be retrieved from memory storage at any given time.

**availability heuristic** *n.* a common strategy for making judgments about likelihood of occurrence in which the individual bases such judgments on the salience of the information held in his or her memory about the particular type of event: The more available and relevant information there is, the more likely the event is judged to be. Use of this strategy may lead to errors of judgment when information that is highly available in memory (e.g., about well-publicized events, such as plane crashes) leads people to believe that those kinds of events are more probable than they actually are, or when the relative unavailability of information (e.g., about less well-publicized causes of death, as from diabetes) leads people to believe that those kinds of events are less probable than they are. The tendency to make such errors is known as the **availability bias**. Compare REPRESENTATIVENESS HEURISTIC. [described in 1973 by Amos TVERSKY and Daniel KAHNEMAN]

**available-case analysis** see PAIRWISE DELETION.

**avalanche conduction** the spreading of nerve impulses from a receptor to a number of other neurons, resulting in an effect that is disproportionate to the initial stimulus, as occurs in a seizure.

**avatar** *n.* see ALTER EGO.

**Aventyl** *n.* a trade name for NORTRIPTYLINE.

**average** *n.* see MEAN.

**average child** see SOCIOMETRIC STATUS.

**average deviation** see MEAN DEVIATION.

**average error** the typical degree to which a series of observations are inaccurate with respect to an absolute criterion (e.g., a standard weight or length) or a relative criterion (e.g., the mean of the observations within a given condition).

**average evoked potential (AEP)** the summated electrical responses of the brain (see EVOKED POTENTIAL) to repeated presentations of the same stimulus. Since any individual potential typically shows considerable random fluctuations, this technique is used to better distinguish the actual response from background "noise." Also called **average evoked response (AER)**.

**aversion** *n.* a physiological or emotional response indicating dislike for a stimulus. It is usually accompanied by withdrawal from or avoidance of the objectionable stimulus (an **aversion reaction**). —**aversive** *adj.*

**aversion conditioning** the process by which a noxious or unpleasant stimulus is paired with an undesired behavior. This technique may be used therapeutically, for exam-

ple, in the treatment of substance abuse, in which case it is called **aversion therapy**. Also called **aversive conditioning**.

**aversion therapy** a form of BEHAVIOR THERAPY in which the client is conditioned to change or eliminate undesirable behavior or symptoms by associating them with noxious or unpleasant experiences, such as a bitter taste (for nail biting) or nausea (for alcoholism). Also called **aversive therapy**; **deterrent therapy**.

**aversive conditioning** see AVERSION CONDITIONING.

**aversive control** the use of an aversive stimulus or consequence, such as punishment or negative reinforcement, to control behavior.

**aversive event** see AVERSIVE STIMULUS.

**aversive racism** a form of racial PREJUDICE felt by individuals who outwardly endorse egalitarian attitudes and values but nonetheless experience negative emotions in the presence of members of certain racial groups, particularly in ambiguous circumstances. For example, if a White employer who supports equality nonetheless favors White candidates over Black candidates in job interviews when all the individuals' qualifications for the position are unclear, then he or she is demonstrating aversive racism. See also MODERN RACISM.

**aversive stimulus** any stimulus or occurrence that evokes avoidance or escape behavior. Also called **aversive event**. See also AVOIDANCE CONDITIONING.

**aversive system** NEUROTICISM as represented by an individual's relative sensitivity to negative or punishing (i.e., aversive) cues and stimuli and his or her processes for avoiding them. Compare APPETITIVE SYSTEM. See also BEHAVIORAL INHIBITION SYSTEM. [proposed by British psychologist Jeffrey Alan Gray (1934–2004)]

**aversive therapy** see AVERSION THERAPY.

**Aveyron boy** see WILD BOY OF AVEYRON.

**avian influenza** a highly contagious viral disease among domestic fowl and other birds, colloquially known as **bird flu**. It is usually spread by migratory birds, which can carry the virus asymptotically. Cross-transmission to humans has been rare (requiring close contact with infected birds), but there is potential for mutation, which could lead to increased bird-to-human transmission and human-to-human transmission. In humans, typical symptoms include fever, cough, sore throat, muscle aches, eye infections, and pneumonia; it can be fatal.

**aviation clinical psychology program** a program developed at the Aeromedical Research Laboratory at Fort Rucker, Alabama (established in 1962). The Laboratory directs medical research, provides training support to Army aviation and airborne activities, and trains aviation psychologists.

**aviation psychology** a specialty in APPLIED PSYCHOLOGY that focuses on understanding human behavior, emotions, and mental states as they relate to the operation and control of aviation systems and influence the safety and efficiency of flight.

**aviophobia** *n.* see FEAR OF FLYING.

**AVLT** abbreviation for Auditory Verbal Learning Test. See REY AUDITORY VERBAL LEARNING TEST.

**AVM** abbreviation for ARTERIOVENOUS MALFORMATION.

**avoidance** *n.* the practice or an instance of keeping away

from particular situations, environments, individuals, or things because of either (a) the anticipated negative consequence of such an encounter or (b) anxious or painful feelings associated with them. Psychology brings several theoretical perspectives to the study of avoidance: its use as a means of coping; its use as a response to fear or shame; its existence as a personality style or predisposition; and its existence as a component in ANXIETY DISORDERS. See APPROACH–AVOIDANCE CONFLICT.

**avoidance–avoidance conflict** a situation involving a choice between two equally objectionable alternatives, for example, when an individual must choose between unemployment and a salary cut. Also called **double-avoidance conflict**. See also APPROACH–APPROACH CONFLICT; APPROACH–AVOIDANCE CONFLICT.

**avoidance behavior** any act or series of actions that enables an individual to avoid or anticipate unpleasant or painful situations, stimuli, or events, including conditioned aversive stimuli. See AVOIDANCE CONDITIONING. Compare ESCAPE BEHAVIOR.

**avoidance conditioning** the establishment of behavior that prevents or postpones aversive stimulation. In a typical conditioning experiment, a buzzer is sounded, then a shock is applied to the subject (e.g., a dog) until it performs a particular act (e.g., jumping over a fence). After several trials, the dog jumps as soon as the buzzer sounds, avoiding the shock. Also called **avoidance learning**; **avoidance training**. See also ESCAPE CONDITIONING.

**avoidance coping** any strategy for managing a stressful situation in which a person does not address the problem directly but instead disengages from the situation and averts attention from it. In other words, the individual turns away from the processing of threatening information. Examples of avoidance coping include ESCAPISM, wishful thinking, self-isolation, undue emotional restraint, and using drugs or alcohol. While generally viewed more unfavorably than the converse APPROACH COPING, avoidant strategies may provide some benefit by reducing stress and preventing anxiety from becoming overwhelming. [identified in 1986 by Susan H. Roth (1948– ), U.S. personality psychologist, and Lawrence J. Cohen (1958– ), U.S. clinical psychologist]

**avoidance gradient** the variation in the strength of a drive as a function of the organism's proximity to an AVERSIVE STIMULUS. For example, a rat's withdrawal behavior increases in intensity as it nears a feared stimulus (e.g., an electric shock). The avoidance gradient appears steeper than the APPROACH GRADIENT. [originally proposed by Neal E. MILLER]

**avoidance learning** see AVOIDANCE CONDITIONING.

**avoidance of intimacy** the tendency of some individuals to shun closeness in interpersonal relations. People who avoid intimacy are reluctant and often fearful to become physically or emotionally close to another person, tend to have superficial relationships, and often report feeling lonely. In ATTACHMENT THEORY, avoidance of intimacy is considered the defining characteristic of an avoidant attachment style in adulthood.

**avoidance response** a response in which an organism anticipates an aversive stimulus and consequently attempts to prevent contact with this stimulus. The avoidance response is a form of abient behavior (see ABIENCE). Also called **avoidance reaction**.

**avoidance training** see AVOIDANCE CONDITIONING.

**avoidance without warning signal** see SIDMAN AVOIDANCE SCHEDULE.

**avoidant attachment** in the STRANGE SITUATION, a form of INSECURE ATTACHMENT in which infants do not seek proximity to their parent after separation. Instead, the infant does not appear distressed by the separation and avoids the returning parent.

**avoidant attachment style** see ANXIOUS–AVOIDANT ATTACHMENT.

**avoidant marriage** a long-lasting marriage in which the partners seldom argue because they have “agreed to disagree” and accept their differences of opinions with no apparent rancor.

**avoidant paruresis** see PARURESIS.

**avoidant personality** a personality trait characterized by feeling uncomfortable when psychologically close to others, resulting in a tendency not to form intimate relations.

**avoidant personality disorder** a personality disorder characterized by (a) hypersensitivity to rejection and criticism, (b) a desire for uncritical acceptance, (c) social withdrawal in spite of a desire for affection and acceptance, and (d) low self-esteem. This pattern is long-standing and severe enough to cause objective distress and seriously impair the ability to work and maintain relationships. It is included in both *DSM–IV–TR* and *DSM–5*. [first defined in 1969 by Theodore MILLON]

**avolition** *n.* failure to engage in goal-directed behavior, occasionally occurring in severe MAJOR DEPRESSIVE EPISODES.

**AVP** abbreviation for arginine VASOPRESSIN.

**awareness** *n.* perception or knowledge of something. Accurate reportability of something perceived or known is widely used as a behavioral index of conscious awareness. However, it is possible to be aware of something without being explicitly conscious of it (e.g., see BLINDSIGHT). See also CONSCIOUSNESS; SELF-AWARENESS.

**awareness training** an approach in psychology and education that stresses self-awareness, self-realization, exploration, and interpersonal sensitivity. Awareness training is associated with such writers as German-born U.S. psychiatrist Frederick (Fritz) S. Perls (1893–1970) and U.S. psychologist William C. Schutz (1925–2002).

**awe** *n.* the experience of admiration and elevation in response to physical beauty, displays of exceptional ability, or moral goodness. The awe-inspiring stimulus is experienced as “vast” and difficult to comprehend.

**awfulize** *vb.* see CATASTROPHIZE. —**awfulizing** *n.*

**AWOL** acronym for ABSENCE WITHOUT LEAVE.

**Axenfeld–Rieger syndrome** an autosomal dominant, developmental spectrum disorder characterized by cornea and iris defects and glaucoma leading to blindness. Other associated developmental defects commonly involve the teeth and facial bones. Researchers have identified three types of Axenfeld–Rieger syndrome according to genetic cause: **Type 1** is caused by mutations in the *PITX2* gene, and **Type 3** is caused by mutations in the *FOXC1* gene. The gene that causes **Type 2** has not yet been identified, but it is located on chromosome 13. [initially reported in 1920 by

Karl Theodor Paul Polykarpus **Axenfeld** (1867–1930) and in 1935 by Herwigh **Rieger** (1898–1986), German ophthalmologists]

**axial** *adj.* relating to, along, or otherwise involving an AXIS, particularly the long axis or central part of the body.

**axial gradient** the difference in development or metabolic rate of tissues along a body axis. See also ANTERIOR–POSTERIOR DEVELOPMENT GRADIENT.

**axiom** *n.* in logic and philosophy, a universally accepted proposition that is not capable of proof or disproof. An axiom can be used as the starting point for a chain of DEDUCTIVE REASONING. Also called **postulate**. [from Greek *axioma*, “worthy thing”] —**axiomatic** *adj.*

**axis** *n.* (*pl.* **axes**) **1.** in DSM–IV–TR, any of the dimensions that are helpful for describing individual behavior and thus facilitate CLINICAL ASSESSMENT. DSM–IV–TR (but not DSM–5) uses a MULTIAxIAL CLASSIFICATION based on five axes: clinical disorders (Axis I), personality disorders and mental retardation (Axis II), GENERAL MEDICAL CONDITIONS (Axis III), psychosocial and environmental problems (Axis IV), and global assessment of functioning (Axis V). **2.** an imaginary line that bisects the body or an organ in a particular plane. For example, the **long** or (**cephalocaudal**) **axis** runs in the median plane, dividing the body into right and left halves. **3.** the second cervical vertebra, on which the skull rotates. **4.** see NEURAL AXIS. **5.** a system made up of interrelated parts, as in the HYPOTHALAMIC–PITUITARY–ADRENAL AXIS. **6.** a fixed reference line in a coordinate system. See also ABSCISSA; ORDINATE.

**axis cylinder** the central core of an AXON, consisting of cytoplasm (or **axoplasm**) surrounded by the plasma membrane (or **axolemma**).

**axo-axonal synapse** a SYNAPSE between two nerve cells in which the nerve impulse travels from one AXON to the other axon, rather than between axon and dendrite (**axodendritic synapse**) or axon and cell body (**axosomatic synapse**).

**axolemma** *n.* see AXIS CYLINDER.

**axon** *n.* the long, thin, hollow, cylindrical extension of a NEURON that normally carries a nerve impulse away from the CELL BODY. An axon often branches extensively and may be surrounded by a protective MYELIN SHEATH. Each branch of an axon ends in a **terminal button** (also called **synaptic bouton** or **knob**, among numerous other synonyms) from which an impulse is transmitted, through discharge of a NEUROTRANSMITTER, across a SYNAPSE to a neighboring neuron. Also called **nerve fiber**. —**axonal** *adj.*

**axonal bundle** a group of parallel AXONS. Also called **fasciculus**.

**axonal myelination** see MYELINATION.

**axonal transport** the transportation of materials along the AXON of a neuron via the flow of the jellylike fluid (**axoplasm**) it contains. Transport may be directed away from the CELL BODY (anterograde) or back toward the cell body (retrograde). Also called **axoplasmic flow**; **axoplasmic transport**.

**axonal varicosities** enlarged areas of an AXON that contain SYNAPTIC VESICLES and release neurotransmitter molecules.

**axon collateral** a branch of a neuron's AXON.

**axon hillock** a cone-shaped part of the CELL BODY of a neuron from which the AXON originates. Depolarization must reach a critical threshold at the axon hillock for the axon to propagate a nerve impulse.

**axon reflex** a peripheral nerve reflex, often associated with pain, in which stimulation of nerve fibers causes impulses to pass up these fibers to their endings, where substances are released.

**axoplasm** *n.* see AXIS CYLINDER; AXONAL TRANSPORT. —**axoplasmic** *adj.*

**axoplasmic flow (axoplasmic transport)** see AXONAL TRANSPORT.

**axosomatic synapse** see AXO-AXONAL SYNAPSE.

**axotomy** *n.* the severing of an AXON. This type of denervation is often used in experimental studies of neurophysiology or as a model of certain diseases of the nervous system.

**ayahuasca** *n.* a powerful hallucinogenic beverage made from the stems of a tropical South American woody vine, *Banisteriopsis caapi*, often with leaves from the plant *Psychotria viridis*. Ayahuasca has been used for centuries by indigenous peoples of the Amazon for religious, spiritual, and medicinal purposes and more recently in the United States and Europe for similar reasons. The pharmacologically active ingredients are HARMINE and **harmaline** from *B. caapi* and dimethyltryptamine (see DMT) from *P. viridis*. In smaller doses, these ingredients have psychedelic and euphoric effects but in larger doses cause nausea, vomiting, and TINNITUS. Also called **caapi**; **yagé**.

**Ayurveda** *n.* a holistic Hindu system of traditional healing, originating and practiced primarily in the Indian subcontinent, that has spread to some extent in Western cultures. It includes diet and herbal remedies and emphasizes the use of body, mind, and spirit in disease prevention and treatment.

**azapirone** *n.* any of a class of nonbenzodiazepine ANXIOLYTICS of which the prototype is BUSPIRONE. They relieve anxiety by acting as PARTIAL AGONISTS at the 5-HT<sub>1A</sub> serotonin receptor (see SEROTONIN AGONIST). Azapirones produce less sedation than the BENZODIAZEPINES, and they seem to lack the abuse potential of these drugs. However, their onset of action is 2 to 3 weeks, and they cannot therefore be used to manage acute or paroxysmal anxiety. Also called **azapirodecanedione**.

**azathioprine** *n.* a drug used to suppress the immune response. It is the most widely used drug in support of organ transplantation and potentially severe cases of immune reactions. U.S. trade name (among others): **Imuran**.

**azoospermia** *n.* absence of viable sperm in the semen, usually as a failure of spermatogenesis.

# Bb

**baah-ji** *n.* see BAH-TSCHI.

**babbling** *n.* prespeech sounds, such as *dadada*, made by infants from around 6 months of age. Babbling is usually regarded as practice in vocalization, which facilitates later speech development. See **BABY TALK**; **PRESPEECH DEVELOPMENT**. —**babble** *vb.*

**Babinski reflex** the reflex occurring in a healthy infant in which the big toe extends upward and the other toes fan out when the sole of the foot is gently stimulated. This response is elicited in newborns to monitor central nervous system development. The Babinski reflex is normal up to about 2 years of age; in adults, it is an indication of neurological disorder and called **Babinski's sign**. [Joseph E. **Babinski** (1857–1932), French neurologist]

**Babkin reflex** a neonatal reflex in which infants open their mouths and twist their heads in response to pressure on their palms. [Boris Petrovich **Babkin** (1877–1950), Russian-born Canadian neurologist]

**Babor's Type A–Type B distinction** a two-part typology used to group substance abusers, particularly those who abuse alcohol, for research purposes and to determine appropriate treatment options for them. **Type A** substance abusers have fewer childhood risk factors and start drinking or taking drugs later in life than **Type B** substance abusers, who have more severe problems related to their substance use, worse psychopathological functioning, and more stress. [developed by U.S. psychologist Thomas E. **Babor** (1944– )]

**baby blues** a colloquial name for the transient depressive symptoms experienced by many women during the first 10 days after giving birth. It should be distinguished from **POSTPARTUM DEPRESSION**. Also called **maternity blues**; **postpartum blues**.

**baby brain** a colloquial term for the memory deficits, reasoning and spatial learning difficulties, and other cognitive problems popularly believed to be experienced by pregnant women. Although often attributed to increases in hormone levels and external stressors, baby brain remains controversial among medical professionals, many of whom dispute not just its supposed characteristics but its very existence. Critics contend that the phenomenon actually results from sleep deprivation and inaccurate self-reports of problems. Additionally, empirical research is limited and contradictory. Although some studies provide support for the phenomenon, showing temporarily diminished brain volume in women during pregnancy and a smaller **HIPPOCAMPUS** in pregnant than in nonpregnant rats, others indicate that pregnancy does not adversely affect cognition and may actually enhance it. Also called **pregnancy brain**.

**babyfacedness** *n.* the attribute of having an adult face with configural features resembling those of an infant, that is, large eyes, full cheeks, a round shape, a protruding forehead, and a small nose and chin. Research has shown that babyfaced adults are often assumed to possess childlike qualities, such as higher levels of innocence and lower lev-

els of competence. This assumption and its influence upon how babyfaced people are treated by others is termed the **babyface overgeneralization effect**.

**baby talk** **1.** the type of speech used by a young child. **2.** the type of speech used by adults and older children when talking to infants or very young children. See **INFANT-DIRECTED SPEECH**.

**BAC** abbreviation for **BLOOD ALCOHOL CONCENTRATION**.

**backbone** *n.* see **SPINAL COLUMN**.

**back-clipping** *n.* see **CLIPPING**.

**backcrossing** *n.* the process of crossbreeding a **HYBRID** animal or plant with a member of the genetic line from which the hybrid was originally derived. The offspring of the mating is known as a **backcross**.

**back-formation** *n.* the creation of a new word on the mistaken assumption that an existing word must be derived from it. This usually involves the elimination of an apparent affix or inflection, as in the creation of the verb *enthuse* from *enthusiasm*. The term is also applied to a word formed in this way. Also called **inverse derivation**; **retrogressive formation**. See also **CLIPPING**.

**background** *n.* **1.** in perception, any aspect of the environment that forms a setting for the primary stimulus or stimuli. See also **FIGURE-GROUND**. **2.** in general, the sum total of a person's upbringing, education, training, and experience.

**background variable** see **SUBJECT VARIABLE**.

**back-propagation algorithms (backprop algorithms)** see **PERCEPTRON**.

**back-to-back stem-and-leaf plot** a variation of a **STEM-AND-LEAF PLOT** in which the trailing digits (leaves) from two data sets are displayed on either side of the same central column of initial values (stem). The leaf values from one data set are given on the right-hand side while those of the second group are shown on the left-hand side. For example, consider the following hypothetical sets of test scores obtained by participants on two different occasions:

79 79 83 83 86 87 92 99

and

80 81 82 83 87 87 90 99

The back-to-back stem-and-leaf plot for these values is

| 7 | 9 9

0 1 2 3 7 7 | 8 | 3 3 6 7

0 9 | 9 | 2 9

**backtrack search** a **GRAPH** search strategy that considers states in a graph recursively. If the present state is not

the goal state, then its first child (node) is examined. If this child is not the goal state, then its first child is taken. If there are no children of a state, then the next sibling of the present state is considered. If there are no further siblings of a state, then the sibling of the state's parent has to be considered. This process continues until either a goal state is found or there are no further states to examine. States, their siblings, and their children are usually (but not necessarily) considered in a left-to-right format.

**back-translation** *n.* see TRANSLATION AND BACK-TRANSLATION.

**backup reinforcer** in BEHAVIOR MODIFICATION, a reward given to a client or patient in return for tokens he or she has earned. See also TOKEN ECONOMY.

**backward association** the formation of an associative link between one item and an item that precedes it in a series or sequence. Compare FORWARD ASSOCIATION.

**backward chaining** see CHAINING.

**backward conditioning** a procedure in which an UNCONDITIONED STIMULUS is consistently presented before a NEUTRAL STIMULUS. Generally, this arrangement is not thought to produce a change in the effect of a neutral stimulus. Occasionally, however, the neutral stimulus may take on inhibitory functions, presumably because its occurrence signals that the unconditioned stimulus is completed or will not occur at all. It may also take on excitatory functions as a result of PSEUDOCONDITIONING. Also called **backward pairing**. Compare FORWARD CONDITIONING.

**backward displacement** in parapsychology experiments using ZENER CARDS or similar targets, a result in which the participant's "call" or guess matches the outcome of the previous trial in the series rather than the current one. If this effect occurs consistently, it may be taken as evidence of RETROCOGNITION. Compare FORWARD DISPLACEMENT.

**backward elimination** a technique used in REGRESSION ANALYSIS in which the goal is to forecast an outcome or response variable according to a subset of predictor variables narrowed down from a large initial set. In backward elimination, all available predictors are included originally and then examined one at a time, with any predictors that do not contribute in a statistically meaningful manner systematically dropped until a predetermined criterion is reached. Also called **backward deletion**; **backward selection**; **stepdown selection**. See also STEPWISE REGRESSION.

**backward masking** see MASKING.

**backward pairing** see BACKWARD CONDITIONING.

**backward reading** reading letters or words in reverse order, for example, *deb* for *bed*, or *Car my is this* for *This is my car*.

**backward search** a problem-solving strategy in which the solver works backward from the end goal of the problem to the beginning. An example would be finding the path through a maze by working from the end of the maze to the beginning. See also WORKING BACKWARD.

**baclofen** *n.* a skeletal MUSCLE RELAXANT that inhibits transmission of synaptic reflexes at the spinal cord level. A GABA<sub>B</sub> RECEPTOR agonist, it is often used in the treatment of reversible spasticity associated with multiple sclerosis or spinal cord injury. Baclofen has also been found to inhibit

the rewarding properties of drugs with abuse potential (opiates, cocaine, etc.). U.S. trade name: **Lioresal**.

**Baconian method** the inductive method of scientific investigation first set out by Francis BACON. The method involves the inference of general laws or principles from particular instances observed under controlled conditions (i.e., in experiments). To make sure that any such generalization is valid, the observer must seek not only positive instances of an association between things in which one event or state brings about another, but also negative instances in which the event or state fails to occur in the absence of the other (see METHOD OF EXCLUSION; MILL'S CANONS). Finally, the observer tries to formulate an explanation for the causal connection so established. See INDUCTIVE REASONING.

**bacteremia** *n.* see SEPTICEMIA.

**bacterial endocarditis** inflammation of the heart lining (endocardium) due to bacterial infection and causing damage to the heart valves and impaired pumping action of the heart. Fever and other systemic symptoms ensue, including embolism and heart failure. The infection can be acquired by unhygienic intravenous drug administration or abuse.

**bacterial meningitis** inflammation of the MENINGES, which form a protective covering for the brain and spinal cord, caused by bacterial infection, most commonly *Neisseria meningitidis* (the meningococcus), *Haemophilus influenzae*, or *Streptococcus pneumoniae* (the pneumococcus). **Meningococcal meningitis** is highly contagious because the bacteria are present in the throat as well as the cerebrospinal fluid. Common symptoms of bacterial meningitis, which can result in severe morbidity or mortality, include fever, headache, nausea, weakness, and confusion. See also MENINGITIS; TUBERCULOUS MENINGITIS.

**bacterium** *n.* (*pl. bacteria*) a unicellular, prokaryotic microorganism, that is, an organism whose chromosome is not contained in a nuclear envelope. Bacteria are considered to represent an earlier stage in the evolution of life than eukaryotes (organisms whose chromosomes are contained in nuclear envelopes, i.e., all organisms except bacteria). In humans, many bacteria cause disease (e.g., tetanus, syphilis, tuberculosis), whereas others are beneficial (e.g., preventing the growth of harmful microbes in the large intestine and enhancing the IMMUNE RESPONSE). —**bacterial** *adj.*

**bad breast** in the psychoanalytic theory of Melanie KLEIN, the internalized representation (see INTROJECTION) of the mother's breast as absent or unsatisfying. According to Klein, the infant first experiences the mother and the nourishing breast as PART-OBJECTS with positive qualities—the GOOD BREAST—and negative qualities—the bad breast. Klein thought that the development of these internalized representations of the breast was the first manifestation of SPLITTING.

**bad faith** an individual's denial of his or her freedom as a human being or unwillingness to accept the undetermined and unforced nature of his or her actions. This often entails a denial of responsibility for the consequences of one's actions and choices or hiding the truth from oneself intentionally. See also EXISTENTIAL PSYCHOTHERAPY. [proposed by French existentialist philosopher Jean-Paul Sartre (1905–1980)]

**bad is stronger than good** the tendency for negative

events, information, or feedback to have significantly more impact or influence on emotions, thoughts, or behavior than an equivalent positive event, information, or feedback. See POSITIVE–NEGATIVE ASYMMETRY; TRAIT NEGATIVITY BIAS.

**bad me** in the SELF-SYSTEM theory of Harry Stack SULLIVAN, the internalized personification of impulses and behaviors that are considered to be negative by the self and, therefore, need to be hidden or disguised from others or from the self. In a child, for instance, the bad me may arise out of a sense of parental disapproval that in turn gives rise to anxiety and self-doubt. Compare GOOD ME; NOT ME.

**bad object** in the psychoanalytic theory of Melanie KLEIN, an introjected PART-OBJECT perceived as having negative qualities (see INTROJECTION). It is an early object representation that derives from SPLITTING of the object into parts containing negative qualities (i.e., the bad object) and positive qualities (i.e., the GOOD OBJECT). The creation of the bad object is understood as a means of managing internal anxiety over destructive impulses arising from frustration. The ego projects these impulses into an object and therefore often feels it to be an external threat or persecutor.

**bad trip** see TRIP.

**bah-tschi (bah-tsi; baah-ji)** *n.* a CULTURE-BOUND SYNDROME found in Thailand, with symptoms similar to those of LATAH.

**BAI** abbreviation for BECK ANXIETY INVENTORY.

**bait shyness** an alternative but less common name for CONDITIONED TASTE AVERSION.

**BAL** abbreviation for blood alcohol level. See BLOOD ALCOHOL CONCENTRATION.

**balance 1.** *n.* a harmonious relationship or equilibrium of opposing forces or contrasting elements. See AUTONOMIC BALANCE; BALANCE THEORY; HOMEOSTASIS. **2.** *n.* the SENSE OF EQUILIBRIUM mediated by the VESTIBULAR SYSTEM of the inner ear. **3.** *vb.* to adjust forces to maintain something at a level from which it would ordinarily deviate.

**balance control** see BALANCE TRAINING.

**balanced bilingual** a person who has proficiency in two languages such that his or her skills in each language match those of a native speaker of the same age. Compare UNBALANCED BILINGUAL. See BILINGUALISM.

**balanced design** any research design in which the number of observations or measurements obtained in each experimental condition is equal. For example, a health researcher interested in exercise and depression would be using a balanced design if he or she examined 50 people who exercise less than 30 minutes per day, 50 people who exercise between 30 and 60 minutes per day, and 50 people who exercise more than 60 minutes per day.

**balanced Latin square** a type of study design in which multiple conditions or treatments are administered to the same participants over time. It is a form of LATIN SQUARE that must fulfill three criteria: Each treatment must occur once with each participant, each treatment must occur the same number of times for each time period or trial, and each treatment must precede and follow every other treatment an equal number of times. For example, consider the following balanced Latin square for an experimental design involving four treatments (A, B, C, and D) and four people:

	Treatment Order			
	1	2	3	4
Participant 1	A	B	D	C
Participant 2	B	C	A	D
Participant 3	C	D	B	A
Participant 4	D	A	C	B

As shown, one person receives the treatments in the sequence A, B, D, and then C; a second person receives them in the sequence B, C, A, and D; a third person receives them in the sequence C, D, B, and A; and a fourth person receives them in the sequence D, A, C, and B.

**balanced scale** a test or survey in which, for each possible response, there is a response that means the opposite. A rating scale with the four alternatives *very poor*, *poor*, *good*, and *very good* is an example, as is a set of survey questions in which half of the questions characterize a particular trait (e.g., perceived stress level) in one direction (e.g., low) and the other half characterize the trait in the opposite direction (e.g., high).

**balance theory** a particular COGNITIVE CONSISTENCY THEORY specifying that people prefer elements within a cognitive system to be internally consistent with one another (i.e., balanced). Balanced systems are assumed to be more stable and psychologically pleasant than imbalanced systems. The theory has been primarily specified and tested within the context of systems involving three elements. These systems are sometimes referred to as **P-O-X triads**, in which P = person (i.e., self), O = other person, and X = some stimulus or event. [first proposed in 1946 by Fritz HEIDER]

**balance training** a form of physical or occupational therapy for individuals who experience difficulty with **balance control** (maintaining balance when standing, walking, or performing other activities). It involves a series of exercises designed to enhance muscular control and improve interpretation of information from the senses and may make use of trainer bicycles, tricycles with body supports and foot attachments, stilts, pogo sticks, rocker boards, and a rubber bouncing tube used like a trampoline. Balance training is also used by many athletes to enhance fitness, coordination, and performance.

**Baldwin effect** the influence on intraspecies evolution of behavior change and learning. An individual member of the species acquires a new ability that enables better adaptation to the environment and hence increases probability of survival; the propensity for acquiring this characteristic is conferred in turn on descendants of that species member until a genetic variation occurs and the characteristic itself becomes hereditary. The Baldwin effect was originally called **organic selection**. [described in 1896 by James Mark BALDWIN]

**Baldwin's figure** a horizontal line with a square at each end. Small squares at the ends of the line make the line look longer than when large squares are at the ends of the line. Also called **Baldwin's illusion**. [James Mark BALDWIN]

**Bálint's syndrome** a spatial and attentional disorder resulting from bilateral lesions in the parieto-occipital regions of the brain. It consists of inability to visually guide the hand to an object (OPTIC ATAXIA), inability to change visual gaze (OCULOMOTOR APRAXIA), and inability to recognize multiple stimuli in a scene and understand their na-

ture as a whole (simultanagnosia; see VISUAL AGNOSIA). [first described in 1909 by Rudolf **Bálint** (1874–1929), Hungarian physician]

**Ballet's disease** a disorder marked by the loss of movements of the eye and pupil while autonomic responses remain normal. The condition is associated with hyperthyroid disorders, such as exophthalmic goiter (see EXOPHTHALMOS). Also called **Ballet's sign**; **ophthalmoplegia externa**. [Gilbert **Ballet** (1853–1916), French neurologist]

**ballet technique** a structured form of DANCE THERAPY.

**ballismus** *n.* involuntary throwing or flinging movements of the limbs, caused by severe muscle contractions due to neurological damage. It may involve both sides of the body or, in the case of **hemiballismus** (or **hemiballism**), one side only. Also called **ballism**.

**ballistic** *adj.* describing a movement (or part of a movement) in which the motion, once initiated, is not altered by feedback-based corrections. Ballistic is sometimes also used, incorrectly, to describe any rapid movement.

**Baltimore Longitudinal Study of Aging (BLSA)** the intramural scientific study of aging conducted by the National Institute on Aging. Over 1,400 volunteers ranging in age from their 20s to their 90s are tested at regular intervals throughout their lives. The study, which has been ongoing since 1958, examines changes due to age and changes due to disease and other causes.

**B and D** abbreviation for BONDAGE AND DISCIPLINE.

**banding** *n.* an approach to setting cutoff scores in PERSONNEL SELECTION. Several ranges of scores known as **score bands** are identified, usually on the basis of the STANDARD ERROR OF MEASUREMENT for the test or PREDICTOR VARIABLE. Rather than being considered individually, all candidates who score within the same band are considered equally qualified. Consequently, hiring decisions are made from within band ranges, in contrast to traditional approaches that choose the highest scorer first, the next highest scorer second, and so forth.

**bandpass filter** see FILTER.

**band symmetry** see SYMMETRY.

**bandwagon effect** the tendency for people in social and sometimes political situations to align themselves with the majority opinion and do or believe things because many other people appear to be doing or believing the same.

**bandwidth** *n.* **1.** a range of frequencies, usually expressed in hertz (cycles per second). In INFORMATION THEORY, it is a measure of the amount of information that a communication channel can transmit per unit of time. **2.** the range of information available from measuring instruments. Greater bandwidth is generally associated with lower accuracy (fidelity). **3.** a window or range of data values that contains a point of interest. The term is often used in NONPARAMETRIC REGRESSION and estimation problems.

**bandwidth selectivity** see FREQUENCY SELECTIVITY.

**bangungut** *n.* a CULTURE-BOUND SYNDROME observed mainly among young, healthy, Filipino males. The individual is often overheard screaming or moaning during sleep, apparently experiencing a terrifying nightmare; this is followed by unexpected death. Also called **oriental nightmare-death syndrome**.

**banner advertisement** a relatively small advertise-

ment displayed on a web page, often inducing consumers to click on the advertisement (typically a small graphic) to go to another website to learn more about the product.

**baquet** *n.* a large, shallow, covered tub containing water, iron filings, ground glass, and bottles arranged in patterns from which metal rods protrude, used by Franz Anton MESMER in his attempts to cure patients with a variety of hysterical symptoms. Mesmer had his patients place the rods on ailing parts of their bodies so that they would experience the supposed healing power of magnetism. See ANIMAL MAGNETISM; MESMERISM.

**bar-** combining form see BARO-.

**baragnosis** *n.* an inability to judge the weights of objects held in the hand. It is usually a result of damage to the primary somatosensory cortex. Compare BAROGNOSIS.

**Bárány test** a test designed to reveal whether the SEMICIRCULAR CANALS of the inner ear are functioning properly. The patient is rotated in a special chair—the **Bárány chair**—with his or her head in each of the planes that bring the three canals vertical to the direction of rotation. The resulting NYSTAGMUS (involuntary movements of the eyes) indicates whether the canals are functioning properly. Also called **Bárány method**. [Robert **Bárány** (1876–1936), Austrian physician]

**barber's-pole effect** the perception that a rotating vertical cylinder with spiral markings (a barber's pole) appears to be moving up, rather than simply rotating.

**barbiturate** *n.* any of a family of drugs derived from barbituric acid that depress activity of the central nervous system (see CNS DEPRESSANT) and were previously widely used as anxiolytics, sedatives, hypnotics, and general anesthetics. They typically induce profound tolerance and withdrawal symptoms and depress respiration. Moreover, they can depress breathing completely—hence their use by individuals wishing to commit suicide. Barbiturates are commonly categorized according to their rates of action (including onset of effect, absorption, and excretion) as long acting, intermediate acting, short acting, or ultra-short acting. Their use became common in the 1930s, but they were rapidly supplanted in the 1970s by the BENZODIAZEPINES, which lack the lethality associated with overdose of the barbiturates. The group includes AMOBARBITAL, BUTABARBITAL, PENTOBARBITAL, PHENOBARBITAL, PRIMIDONE, and THIOPENTAL, among others. The prototype of the group, **barbital**, was introduced into medical practice in 1903. See SEDATIVE, HYPNOTIC, AND ANXIOLYTIC DRUG.

**Bard–Cannon theory** see CANNON–BARD THEORY.

**Bardet–Biedl syndrome (BBS)** an autosomal recessive genetic disorder characterized by progressive visual impairment due to deterioration of the retina, leading to night blindness, loss of peripheral vision, and blurred central vision. Additional symptoms can include some degree of obesity, polydactyly (extra fingers or toes), hypogonadism (small testicles), intellectual disability or developmental delay, and impaired speech. At least 14 genes are known to be associated with Bardet–Biedl syndrome, with about 45% of cases caused by mutations of either the *BBS1* or *BBS10* gene. See also LAURENCE–MOON–BARDET–BIEDL SYNDROME. [described in 1920 by George **Bardet** (1885–1970), French physician, and in 1922 by Artur **Biedl** (1869–1933), Romanian-born Austrian physician]

**bar display** in ergonomics, a machine display in which fluctuating values of a system attribute are indicated by

the length of rectangular bars of equal width. See also OBJECT DISPLAY.

**Barefoot v. Estelle** a 1983 case resulting in a decision in which the U.S. Supreme Court upheld a death sentence after a psychiatrist testified at trial that the likelihood the defendant would reoffend was 100% and absolute, although the psychiatrist had never examined the defendant.

**baresthesia** *n.* the sensation of weight or pressure.

**bargaining** *n.* the process in which two parties attempt to resolve their conflicting interests by trading resources in return for some benefits. Compare NEGOTIATION. —**bar-gain** *vb.*

**bargaining stage** the third of the five STAGES OF GRIEF described by Elisabeth KÜBLER-ROSS. It is characterized by an attempt to negotiate a deal with God or fate that would delay one's own death or that of an important other, or that would mitigate or end other great loss or trauma.

**bar graph** a graph in which bars of varying height with spaces between them are used to display data for variables defined by qualities or categories. For example, to show the political affiliations of Americans, the different parties (e.g., Democrat, Republican, Independent) would be listed on the *x*-axis, and the height of the bar rising above each party would represent the number or proportion of people in that category. Also called **bar chart**; **bar diagram**. See also HISTOGRAM.

**bar hustler** see MALE HOMOSEXUAL PROSTITUTION.

**bariatrics** *n.* a field of medicine that focuses on the study of OBESITY: its causes, prevention, and treatment.

**barK** abbreviation for BETA-ADRENERGIC RECEPTOR KINASE.

**Barnum effect** the tendency to believe that vague predictions or general personality descriptions, such as those offered by astrology, have specific applications to oneself. Coinage of the term has been attributed to Paul Everett MEEHL; it alludes to a remark allegedly made by U.S. showman Phineas T. Barnum (1810–1891) to the effect that “There’s a sucker born every minute.” The effect was termed the **fallacy of personal validation** by U.S. psychologist Bertram Robin Forer (1914–2000), who first studied it in 1949.

**baro-** (**bar-**) *combining form* pressure or weight.

**barognosis** *n.* the ability to estimate the weights of objects held in the hand. Compare BARAGNOSIS.

**Barona equation** an equation that uses demographic variables (such as age, education, and occupational history) to estimate IQ prior to brain injury or disease. [Andres Barona (1945– ), U.S. psychologist]

**baroreceptor** *n.* a pressure receptor in the heart or a major artery that detects changes in blood pressure and communicates that information to the brain via the autonomic nervous system. Also called **baroeceptor**.

**barotitis** *n.* a disorder of the ear due to exposure to differing atmospheric pressures.

**Barr body** see SEX CHROMATIN. [Murray L. Barr (1908–1995), Canadian anatomist]

**bar reflex** a pathological phenomenon in which the lateral or vertical movement of one leg of a recumbent individual is followed by a similar movement of the other leg. This is usually a diagnostic sign of damage or disease in the anterior region of the FRONTAL LOBE.

**barrier** *n.* something that restricts, impedes, or blocks progress or the achievement of an ultimate objective or end. In psychological contexts, barriers are mental, emotional, or behavioral limitations in individuals and groups.

**barrier-free environment** a built space that is free of obstacles to individuals with physical and cognitive disabilities and permits safe, uninhibited movements. Environmental barriers can include street curbs, revolving doors or doors too narrow to admit wheelchairs, inaccessible toilets and washbowls, and elevator buttons that cannot be read by people with visual impairment. See also UNIVERSAL DESIGN.

**Barron–Welsh Art Scale (BWAS)** an assessment of aesthetic preference in which participants indicate *like* or *dislike* for each of 86 black-and-white figures selected to differentiate between the judgment of CRITERION GROUPS of artists and nonartists. The figures vary in complexity from simple line drawings of geometric figures to detailed, multi-line abstractions. Although available as a separate instrument, the Barron–Welsh scale is part of the larger WELSH FIGURE PREFERENCE TEST of personality characteristics; indeed, performance on the BWAS has been interpreted variously as an index of creativity and a reflection of underlying personality variables. [originally developed in 1952 by Frank X. Barron (1922–2002) and George S. Welsh (1918–1990), U.S. psychologists]

**BARS** acronym for BEHAVIORALLY ANCHORED RATING SCALE.

**Barthel Index** a form of FUNCTIONAL STATUS measurement that includes 10 items assessing an individual's ability to perform ACTIVITIES OF DAILY LIVING independently. An individual is rated on a point scale regarding the degree of assistance required to perform each item, and the ratings are then combined to yield a total score. [Dorothea W. Barthel, 20th-century U.S. psychologist]

**Bartholin's glands** see VESTIBULAR GLANDS. [Caspar Bartholin (1655–1738), Danish anatomist]

**Bartlett technique** see REPEATED REPRODUCTION. [Frederic C. BARTLETT]

**Bartlett test for equality of variance** a procedure used to determine whether variation across two or more groups is equivalent, this being a critical assumption in ANALYSIS OF VARIANCE and many other parametric methods. The Bartlett test is sensitive to scores that are not from a NORMAL DISTRIBUTION. [Maurice Stevenson Bartlett (1910–2002), British statistician]

**Bartley v. Kremens** a lawsuit resulting in a Pennsylvania court decision (1976) that extended DUE PROCESS protection and provision of legal counsel to children committed to mental facilities by their parents.

**baryphony** *n.* speech characterized by a thick, heavy voice quality. Also called **baryphonia**.

**BAS** abbreviation for BEHAVIORAL APPROACH SYSTEM.

**basal age** the highest MENTAL AGE level at which a participant can answer all items on a standardized test correctly. The concept of mental ages is used relatively rarely in current testing. Compare CEILING AGE.

**basal cell** see TYPE IV CELL.

**basal dendrite** any of several DENDRITES on a PYRAMIDAL CELL that extend horizontally from the CELL BODY. Compare APICAL DENDRITE.



**basal forebrain** a region of the ventral FOREBRAIN near the corpus callosum containing CHOLINERGIC neurons that project widely to the cerebral cortex and hippocampus and are thought to be important in aspects of memory, learning, and attention. See BASAL NUCLEUS OF MEYNERT.

**basal ganglia** a group of nuclei (neuron cell bodies) deep within the cerebral hemispheres of the brain that includes the CAUDATE NUCLEUS, PUTAMEN, GLOBUS PALLIDUS, SUBSTANTIA NIGRA, and SUBTHALAMIC NUCLEUS. The putamen and globus pallidus are together known as the **lenticular** (or **lentiform**) **nucleus**, the lenticular nucleus and caudate nucleus are together known as the **corpus striatum**, and the caudate nucleus and putamen are together called the **striatum**. The basal ganglia are involved in the generation of goal-directed voluntary movement. Also called **basal nuclei**.

**basal magnocellular nucleus** see BASAL NUCLEUS OF MEYNERT.

**basal metabolism** the minimum energy expenditure required to maintain the vital functions of the body while awake but at rest and not expending energy for thermoregulation. **Basal metabolic rate (BMR)** is measured in kilojoules (or calories) expended per kilogram of body weight or per square meter of body surface per hour.

**basal nuclei** see BASAL GANGLIA.

**basal nucleus of Meynert** a collection of neurons in the BASAL FOREBRAIN that modulates the activity of many areas of the neocortex by providing CHOLINERGIC innervation. It is implicated in Alzheimer's disease. Also called **basal magnocellular nucleus**; **Meynert's nucleus**; **nucleus basalis magnocellularis**. [Theodor H. Meynert (1833–1892), Austrian neurologist]

**basal reader approach** a method of reading instruction through the use of a series of books. The vocabulary, content, and sequence of skills to be taught are thus determined by the authors.

**basal skin resistance** see SKIN RESISTANCE.

**base 1.** *n.* the lowest or most fundamental part of something. **2.** *adj.* elemental, or having a primitive or basic nature.

**baseline** *n.* **1.** data or information obtained prior to or at the onset of a study (e.g., before introduction of an intervention) that serves as a basis for comparison with data collected at a later point in time so as to assess the effects of particular manipulations or treatments. For example, a memory researcher may measure how many words from a list participants remember initially and then compare that figure to the number of words they remember following the use of a new mnemonic technique (i.e., the experimental manipulation). **2.** more generally, any stable level of performance used as a yardstick to assess the effects of particular manipulations or changes.

**baseline assessment 1.** a process of obtaining information about a participant's status (e.g., ability level, psychological well-being) before exposure to an intervention, treatment, or other study manipulation. The information so obtained is compared to data gathered during the course of the research in order to identify any effects associated with the study conditions. **2.** the measurement of characteristics of humans and other animals at a particular point in development in order to evaluate natural changes in these characteristics over time.

**baseline characteristic** any of various qualities of a participant that are assessed prior to a study or intervention as they may potentially influence outcome measures. For example, a researcher evaluating the effect of a new stress-reduction technique on health status may examine such baseline characteristics as sex, age, and ethnicity.

**baseline functioning** see PREMORBID FUNCTIONING.

**baseline measure** an observation of a participant's response before the administration of any experimental intervention.

**baseline performance** the measured rate of a behavior before introduction of an intervention, which allows comparison and assessment of the effects of the intervention. For example, a baseline for being off task is established before an intervention aimed at increasing on-task classroom behavior is delivered.

**base pair** see DNA.

**base rate 1.** the naturally occurring frequency of a phenomenon in a population. An example is the percentage of students at a particular college who have major depressive disorder. This rate is often contrasted with the rate of the phenomenon under the influence of some changed condition in order to determine the degree to which the change influences the phenomenon. **2.** in PERSONNEL PSYCHOLOGY, the percentage of job applicants who would succeed in the job if all were hired. Base rates are used to measure the effectiveness of EMPLOYMENT TESTS.

**base-rate fallacy** a decision-making error in which information about the rate of occurrence of some trait in a population (the base-rate information) is ignored or not given appropriate weight. For example, given a choice of the two categories, people might categorize a man as an engineer, rather than a lawyer, if they heard that he enjoyed physics at school—even if they knew that he was drawn from a population consisting of 90% lawyers and 10% engineers. See REPRESENTATIVENESS HEURISTIC.

**bases of an attitude** the types of information from which an attitude is derived. Traditionally, researchers have distinguished between three categories of bases: The **affective basis** refers to the emotions, feelings, and moods associated with the ATTITUDE OBJECT; the **cognitive basis** refers to beliefs about evaluative attributes associated with the attitude object; and the **behavioral basis** refers to responses, such as past behaviors and future intentions, associated with the attitude object. Also called **components of an attitude**. See also TRIPARTITE MODEL OF ATTITUDES.

**base structure** see DEEP STRUCTURE.

**bashful bladder syndrome** see PARURESIS.

**basic anxiety** in EGO PSYCHOLOGY, a feeling of being helpless, abandoned, and endangered in a hostile world. According to Karen D. HORNEY, it arises from the infant's helplessness and dependence on his or her parents or from parental indifference. Defenses against basic anxiety and hostility may produce NEUROTIC NEEDS and NEUROTIC TRENDS, such as a submissive attitude, the need to exert power over others, or withdrawal from relationships. See also BASIC HOSTILITY.

**basic category** see BASIC-LEVEL CATEGORY.

**basic conflict** in EGO PSYCHOLOGY, the conflict between a person's dominant NEUROTIC TREND and his or her incompatible, nondominant NEUROTIC NEEDS, which must be kept repressed. [first described by Karen D. HORNEY]

**basic emotion** see PRIMARY EMOTION.

**basic encounter** a meaningful experience in one person's relating to another that is characterized by mutual trust and empathy. The development and occurrence of such encounters in therapy and counseling contexts are considered to be beneficial to the therapeutic process and outcome for the client. See also CLIENT-CENTERED THERAPY.

**basic hostility** in EGO PSYCHOLOGY, a feeling of hostility and resentment toward the parents that develops as a result of the BASIC ANXIETY that the infant feels at being dependent on them. To the extent that the infant fears the parents, basic hostility and anxiety are repressed and give rise to NEUROTIC NEEDS and NEUROTIC TRENDS. [defined by Karen D. HORNEY]

**BASIC ID** see MULTIMODAL THERAPY.

**basic-level category** a category formed at the level that people find most natural and appropriate in their normal, everyday experience of the things so categorized. A basic-level category (e.g., *bird*, *table*) will be broader than the more specific SUBORDINATE CATEGORIES into which it can be divided (e.g., *hawk*, *dining table*) but less abstract than the SUPERORDINATE CATEGORY into which it can be subsumed (e.g., *animals*, *furniture*). A basic-level category will usually meet the following criteria: (a) It represents a level of CATEGORIZATION at which high resemblance among members of the category co-occurs with low resemblance with members of different categories; (b) it represents the highest level at which members have a similar general shape and is therefore the highest level at which a single mental image can stand for the entire category; and (c) it represents the highest level at which numerous attributes can be listed, most of which will apply to most members of the category (see FAMILY RESEMBLANCE). The name of the basic-level category will generally be the term most frequently applied to the things in question in natural language, the term earliest learned, and the term that is most readily remembered. Also called **basic category**; **natural category**.

**basic mistake** in the psychology of Alfred ADLER, a factor arising in early childhood that affects a person's lifestyle in later life and that may need to be corrected in order to resolve conflicts.

**basic mistrust** see BASIC TRUST VERSUS MISTRUST.

**basic need** see PHYSIOLOGICAL NEED.

**Basic Nordic Sleep Questionnaire (BNSQ)** a standardized questionnaire that uses a 5-point quantitative scale, ranging from *never* (1) to *every night* (5), for measuring the frequency of occurrence during the previous 3 months of various sleep disturbances and complaints. The questionnaire was initially developed in 1988 by the Scandinavian Sleep Research Society for use in Denmark, Norway, Sweden, Finland, and Iceland (i.e., the Nordic countries).

**basic personality** a distinctive pattern of thought, feeling, and behavior supposedly found in people raised in the same culture, largely as a result of their subjection to the same child-rearing practices. The basic personality is in turn held to be responsible for many of a culture's distinctive institutions, such as its religion and folklore. Also called **basic personality structure**; **basic personality type**. See also CULTURAL DETERMINISM; NATIONAL CHARACTER. [proposed by U.S. psychoanalyst and psychocultural theorist Abram Kardiner (1891–1981)]

**basic reflex** any of the infant reflexes of sucking, eye

movement, grasping, and sound orientation. According to PIAGETIAN THEORY, basic reflexes are a feature of the first substage of the SENSORIMOTOR STAGE, in which infants know the world only in terms of their inherited action patterns.

**basic research** research conducted to obtain greater understanding of a phenomenon, explore a theory, or advance knowledge, with no consideration of any direct practical application. Also called **pure research**. Compare APPLIED RESEARCH.

**basic rest–activity cycle (BRAC)** cyclic alternations between neurophysiological activity and nonactivity during waking and sleep, thought typically to involve a 90-minute cycle. [first described in 1961 by U.S. physiologist and sleep researcher Nathaniel Kleitman (1895–1999)]

**basic rule** the fundamental rule of psychoanalysis that the patient must attempt to put all spontaneous thoughts, feelings, and memories into words without censorship, so that they can be analyzed to reveal unconscious wishes, conflicts, and emotions. Also called **fundamental rule**.

**basic science** scientific research or theory that is concerned with knowledge of fundamental phenomena and the laws that govern them, regardless of the potential applications of such knowledge. Also called **fundamental science**; **pure science**. Compare APPLIED SCIENCE.

**basic skills** in education, reading, writing, and arithmetic. Proficiency in the basic skills has traditionally been viewed as essential for scholastic achievement.

**basic-skills testing** **1.** a standardized, often state-regulated assessment of BASIC SKILLS. **2.** an examination of an individual's ability to perform and understand fundamental tasks.

**basic technique (BT)** in parapsychology experiments using ZENER CARDS, the basic procedure in which each card is removed from the deck and laid aside after being "called," or guessed, by the participant. The cards are not checked until the entire pack has been guessed in this way. See SCREEN TOUCH MATCHING. See also DOWN THROUGH; UP THROUGH.

**basic trust versus mistrust** the first of ERIKSON'S EIGHT STAGES OF PSYCHOSOCIAL DEVELOPMENT, between birth and 18 months of age. During this stage, the infant either comes to view other people and himself or herself as trustworthy or comes to develop a fundamental distrust of his or her environment. The growth of basic trust, considered essential for the later development of self-esteem and healthy interpersonal relationships, is attributed to a primary caregiver who is responsively attuned to the infant's individual needs while conveying the quality of trustworthiness, whereas the growth of basic mistrust is attributed to neglect, lack of love, or inconsistent treatment. The child must experience both trust and mistrust to know how to truly trust.

**basilar artery** an artery formed by the union of the two vertebral arteries. Its branches supply blood to the brainstem and to posterior portions of the cerebral hemispheres.

**basilar membrane** a fibrous membrane within the COCHLEA that supports the ORGAN OF CORTI. In response to sound, the basilar membrane vibrates; this leads to stimulation of the HAIR CELLS—the auditory receptors within the organ of Corti. The mechanical properties of the basilar membrane vary over its length (34 mm in humans), giving

rise to a pattern of movement known as a **traveling wave**, or **Békésy traveling wave**. The location of the maximum movement depends on the frequency of the sound. This fundamental aspect of mammalian hearing was discovered by Georg von BÉKÉSY.

**basket cell** a type of neuron found in the cerebellum.

**basket ending** any of the nerve endings that are found around hair follicles and are responsible for sensations of contact and pressure.

**basking in reflected glory (BIRGing)** the tendency to enhance one's self-esteem by heightening one's association with a successful or prestigious group. The opposite of this is **cutting off reflected failure (CORFing)**, or distancing oneself from an unsuccessful or low-status group. For example, fans of a sports team may visit the team's website after a winning game, whereas the same fans may avoid such contact when the team loses. Similarly, people with yard signs endorsing the successful candidate in a presidential election often display them longer after the election than do people with signs endorsing unsuccessful opponents.

**basolateral group** one of the two main groups of nuclei in the AMYGDALA within the brain and the largest portion of the amygdaloid complex. Its nuclei receive neuromodulatory input from various neurotransmitter systems in the basal forebrain and brainstem, are connected particularly with higher order sensory and limbic association areas, and project to the central amygdala. They are implicated in fear conditioning and emotional learning. Also called **basolateral complex**. See also COR-TICOMEDIAL GROUP.

**BAT** acronym for BEHAVIORAL APPROACH TASK.

**Batesian mimicry** a form of mimicry in which a species that is nontoxic or palatable to predators mimics the physical shape or coloration of a toxic species. For example, some species of flies have black and yellow coloration similar to bees and wasps with stingers. When predators learn to avoid noxious prey and form generalizations about similar-looking animals, then nontoxic animals are more likely to survive by mimicking the toxic species. [Henry Walter **Bates** (1825–1892), British naturalist]

**bath therapy** the use of water immersion in therapy. See also HYDROTHERAPY.

**bathy-** combining form deep.

**bathesthesia** *n.* awareness of sensations in the deep (subcutaneous) tissues of the body. Also called **deep-pressure sensitivity**; **deep sensibility**.

**Batson v. Kentucky** a legal case resulting in a U.S. Supreme Court ruling that it is unconstitutional to exercise PEREMPTORY CHALLENGES during VOIR DIRE for the purpose of removing jurors on account of their race.

**battered-child syndrome (BCS)** the effects on a child of intentional and repeated physical abuse by parents or other caregivers. In addition to sustaining physical injuries, the child is at increased risk of experiencing longer-term problems, such as depression, POSTTRAUMATIC STRESS DISORDER, substance abuse, decreased self-esteem, and sexual and other behavioral difficulties. See also CHILD ABUSE. [term introduced in 1962 by German-born U.S. pediatrician C. Henry Kempe (1922–1984) and colleagues]

**battered-woman syndrome (BWS)** the psychological effects of being physically abused by a spouse or domes-

tic partner. The syndrome includes LEARNED HELPLESSNESS in relation to the abusive spouse, as well as symptoms of posttraumatic stress. The incidence of domestic violence toward women played a role in the origins of this term; however, it is now understood that men may be the victims of violence by a domestic partner and may also exhibit the effects of this syndrome. See also CYCLE OF VIOLENCE. [term introduced in 1979 by U.S. clinical and forensic psychologist Lenore E. Walker (1942– )]

**battered women** women who are physically abused by their spouses or domestic partners. Woman beating is considered to surpass rape as the most underreported act of violent assault in the United States. Current data suggest that domestic violence against women is common and occurs in all social classes and ethnic and religious groups, as well as between same-sex partners. While the gender-based focus of this term reflects the higher incidence of domestic violence toward women, men may also be abused by domestic partners. See also INTIMATE PARTNER VIOLENCE.

**batterer's excuses** rationalizations given by individuals who beat their spouses or domestic partners. These may include claims of provocation, or that beating a spouse or partner is acceptable in the batterer's culture, or that the batterer was angry. The victim of battering may come to believe in the batterer's excuses, and such self-blame or other justifications for the abuser's behavior can make it more difficult for the person to leave the relationship without adequate support. See also BLAMING THE VICTIM; CYCLE OF VIOLENCE.

**battle fatigue** see COMBAT STRESS REACTION.

**battlefield recovery** stressful tasks associated with the aftermath of an armed conflict, such as recovering casualties and bodies and identifying and burying the dead.

**battle/garrison dimensions** the dimensions of the risk (low to high) and types of mission (routine to unique) for a variety of operational settings, ranging from garrison (peacetime) to battlefield (combat). The dimensions are influenced by training, previous exposure, and the cohesiveness of units.

**battle inoculation** training in simulated operational conditions (such as fire from real weapons) to prepare soldiers for deployment in combat. The battlefield performance of a soldier is directly related to the quality and amount of realistic unit and individual training that the soldier has received. Training must be related to the wartime mission of a unit and to the conditions it can expect to face. Live-fire training prepares soldiers for the shock and noise of combat. It not only helps to inoculate soldiers to the stresses of operations (including combat) but also enables them to learn methods for coping with their reactions to these stresses. Previous operational experience (especially in combat) also helps to prepare soldiers for future situations. See also STRESS TRAINING.

**battle of the experts** a scenario in which EXPERT WITNESSES from opposing sides of a legal dispute disagree over an issue that has to be decided to resolve the dispute. Such contradictory testimony is often of little help to the judge or jury in reaching a decision in the case.

**battle shock** psychological impairment resulting from COMBAT STRESS REACTIONS. The expression was used in the Israeli Yom Kippur war to describe the condition of a combat STRESS CASUALTY who was unable to tolerate further military combat.

**Bayesian** *adj.* denoting an approach to statistical inference and probability that enables previously known (a priori) information about a population characteristic of interest to be incorporated into the analysis. In Bayesian methods, estimated quantities are based in part on empirical data (i.e., what was actually observed) and in part on collective or individual knowledge about what to expect in the population (as captured in a PRIOR DISTRIBUTION). See also POSTERIOR DISTRIBUTION. [Thomas **Bayes** (1702–1761), British mathematician and theologian]

**Bayesian inference** a method of drawing conclusions about a characteristic of a population using both sample data and previously known information about that characteristic. It relies on BAYES THEOREM to derive POSTERIOR DISTRIBUTIONS from obtained observations and PRIOR DISTRIBUTIONS. Compare FREQUENTIST INFERENCE. [Thomas **Bayes**]

**Bayesian information criterion (BIC)** in BAYESIAN statistics, a summary value used in comparing the relative fit of one model to another for a given set of data. Although adding to the complexity of a model often will improve fit to a set of data, the Bayesian information criterion adds a penalty for each addition, such that relative model fit also is judged in terms of model parsimony (simplicity). [Thomas **Bayes**]

**Bayes theorem** a formula for calculating the probability that an event will occur that allows for the acquisition of new information regarding that event. For example, consider the probability that an individual will have a stroke within the next year. Using Bayes theorem, one could take an estimate of this probability based on general population data for that individual's age group (i.e., the PRIOR PROBABILITY) and revise it to account for the results of that person's stress tests and other cardiological markers, creating what is known as the POSTERIOR PROBABILITY. [Thomas **Bayes**]

**Bayley Scales of Infant and Toddler Development** scales for assessing the developmental status of infants and young children ages 1 month to 42 months. Test stimuli, such as form boards, blocks, shapes, household objects (e.g., utensils), and other common items, are used to engage the child in specific tasks of increasing difficulty and elicit particular responses. The Bayley scales currently have five components. Tasks from the **Mental scale** are designed to evaluate such functions as perception, memory, and learning; those from the **Motor scale** measure gross and fine motor abilities, such as crawling, sitting, grasping, and object manipulation. The **Behavior Rating scale** (formerly called the **Infant Behavior Record**) contains detailed descriptions of specific categories of behavior that are graded on a 5-point scale. It supplements the Mental and Motor scales and provides an assessment of overall attention and arousal, orientation and engagement, emotion regulation, and motor quality. The final two components, the **Social–Emotional scale** and the **Adaptive Behavior scale**, use questionnaires to obtain parent or caregiver perceptions of their child's development. The Bayley scales were originally published in 1969 and subsequently revised in 1993; the most recent version is the **Bayley–III**, published in 2005. [developed by Nancy BAYLEY]

**BBB/G syndrome** see OPITZ G/BBB SYNDROME.

**BBS** acronym for BARDET–BIEDEL SYNDROME.

**B cell** see LYMPHOCYTE.

**BCI** abbreviation for BRAIN–COMPUTER INTERFACE.

**Bcl-2** *n.* a family of genes whose protein products regulate PROGRAMMED CELL DEATH.

**B coefficient** see REGRESSION COEFFICIENT.

**B-cognition** *n.* see BEING COGNITION.

**BCS** abbreviation for BATTERED–CHILD SYNDROME.

**BDAE** abbreviation for Boston Diagnostic Aphasia Examination. See BOSTON NAMING TEST.

**BDD** abbreviation for BODY DYSMORPHIC DISORDER.

**BDI** abbreviation for BECK DEPRESSION INVENTORY.

**BDNF** abbreviation for BRAIN-DERIVED NEUROTROPHIC FACTOR.

**BDS** abbreviation for BLESSED DEMENTIA SCALE.

**BEAM** abbreviation for BRAIN ELECTRICAL ACTIVITY MAPPING.

**beat** *n.* **1.** a periodic change in loudness produced by superimposing two tones with similar frequencies. For example, the loudness of a 500 Hz tone and a 503 Hz tone when sounded together will fluctuate three times per second—the **beat rate**. **2.** the periodic change in AMPLITUDE produced by superimposing two sinusoidal signals that are relatively close in frequency. See also ROUGHNESS.

**beating fantasy** in the classical psychoanalysis of Sigmund FREUD, a male or female child's fantasy of being beaten by his or her father or mother. For both sexes, the fantasy is interpreted as an expression of the child's oedipal desires toward the father and is said to be based on the child's belief that the father beats the mother in the PRIMAL SCENE. Thus, the fantasy of being beaten provides sexual arousal.

**Bechara Gambling Task** see IOWA GAMBLING TASK.

**Beck Anxiety Inventory (BAI)** a 21-item self-report measure used to assess the severity of anxiety in adults and to discriminate anxiety from depression. [Aaron T. BECK]

**Beck Depression Inventory (BDI)** a self-report questionnaire designed to assess the severity of depressive symptoms in adolescents and adults. Extensively used in both clinical and research settings, it consists of 21 item groups, each of which includes four statements of increasing severity. Each group reflects a symptom or attitude associated with depression (e.g., loss of energy, self-dislike), and each statement has a numerical value from 0 to 3. Participants choose the statement within each group that most accurately reflects how they have felt within the past 2 weeks. The BDI was originally published in 1961; the most recent version is the **BDI–II**, published in 1996. [Aaron T. BECK and colleagues]

**Beck Hopelessness Scale (BHS)** a scale of 20 true–false statements used to predict suicide risk by measuring an individual's attitudes about the future, loss of motivation, and expectations. [Aaron T. BECK]

**Beck Scale for Suicide Ideation (BSS)** a measure of the necessity for detailed questioning about a patient's intentions, administered to patients who are considered to be at risk of suicide. [Aaron T. BECK]

**Beck therapy** see COGNITIVE THERAPY. [Aaron T. BECK]

**Beckwith–Wiedemann syndrome** a growth disorder marked by enlarged tongue, large abdominal hernia, and enlarged viscera. Newborns may be born with an om-

phalocele (an opening in the wall of the abdomen) and develop hypoglycemia (low blood sugar). Although children with this disorder are at increased risk for developing cancer, the majority reach adulthood with normal height and intelligence. The cause is usually unknown, but up to 15% of cases occur in families with more than one affected member. In those cases, it appears to be an autosomal dominant pattern of inheritance and involves genes located on the short arm of chromosome 11 (locus 11p15). [described in the 1960s by John Bruce **Beckwith** (1933– ), U.S. physician, and Hans Rudolf **Wiedemann** (1915–2006), German pediatrician]

**Bedlam** *n.* the popular name for the Hospital of Saint Mary of Bethlehem in Bishopsgate, London, founded as a monastery in 1247 and converted into an asylum for the insane by Henry VIII in 1547. Many of the inmates were in a state of frenzy, and as they were shackled, starved, beaten, and exhibited to the public for a penny a look, general turmoil prevailed. The word itself thus became synonymous with wild confusion or frenzy. Sometimes the term **bedlamism** was used for psychotic behavior, and the term **bedlamite** for a psychotic individual.

**bed-sharing** *n.* a type of **COSLEEPING** in which an infant or young child sleeps with one or both parents in the same bed. Bed-sharing with infants is discouraged by the American Academy of Pediatrics and the U.S. Consumer Product Safety Commission because of the associated safety hazards and increased risk of **SUDDEN INFANT DEATH SYNDROME**. Also called **family bed**. Compare **COBEDDING**.

**bedsore** *n.* see **PRESSURE ULCER**.

**bed-wetting** *n.* the involuntary discharge of urine during sleep. Bed-wetting is considered problematic if it occurs in children older than 4 or 5 years of age; it is twice as common in boys. Also called **sleep enuresis**. See also **ELIMINATION DISORDER**; **ENURESIS**.

**bee communication** the use of a set pattern of movements by a bee to communicate to other bees the direction and approximate distance to a source of food or a nest site. It comprises both a **round dance** and a **waggle dance** in the form of a figure 8; the intensity of these dances communicates the relative quality of a resource. The direction of the straight portion of the waggle dance with respect to gravity in the hive indicates the direction of the resource with respect to the sun. This **dancing language** is often cited as an example of bees' ability to communicate about objects distant in time and space, but alternative explanations suggest that other signals (e.g., odors) are equally important in locating food sources.

**before–after design** see **PRETEST–POSTTEST DESIGN**.

**begging** *n.* a series of vocalizations, often accompanied by mouth or bill opening, used by young nonhuman animals to entice their parents to feed them. In some species, each offspring has a distinct, individual form of begging that is used by parents for offspring recognition. Parents often give more food to the offspring with the most intense form of begging. In **COURTSHIP**, some adult females engage in begging, receiving food from a potential mate and in some cases reducing the male's aggression.

**behavior** *n.* **1.** an organism's activities in response to external or internal stimuli, including objectively observable activities, introspectively observable activities (see **COVERT BEHAVIOR**), and nonconscious processes. **2.** more restrictively, any action or function that can be objectively ob-

served or measured in response to controlled stimuli. Historically, behaviorists contrasted objective behavior with mental activities, which were considered subjective and thus unsuitable for scientific study. See **BEHAVIORISM**. —**behavioral** *adj.*

**behavioral activation** an intervention that explicitly aims to increase an individual's engagement in valued life activities through guided goal setting to bring about improvements in thoughts, mood, and quality of life.

**behavioral approach system (BAS)** in **REINFORCEMENT SENSITIVITY THEORY**, the physiological mechanism believed to control appetitive motivation. It is theorized to be sensitive to signals of reward, nonpunishment, and escape from punishment. Activity in this system causes the individual to begin (or to increase) movement toward goals. It has also been held that this system is responsible for the experience of positive feelings such as hope, elation, and happiness in response to these signals and that having a strong or chronically active BAS tends to result in extraversion. Also called **behavioral activation system**. Compare **BEHAVIORAL INHIBITION SYSTEM**. [described by British psychologist Jeffrey Alan Gray (1934–2004)]

**behavioral approach task (BAT)** an assessment technique that observes an individual approach a feared situation until he or she is unable to go further. The BAT is used to assess levels of avoidance and fear of specific situations associated with phobias. It may also be used to corroborate information obtained in the **CLINICAL INTERVIEW** and to measure treatment progress and outcome. Variables that can be measured using the BAT include physical symptoms (e.g., increased heart rate), escape or avoidance strategies, and subjective ratings of fear. Also called **behavioral approach test**; **behavioral avoidance test**.

**behavioral assessment** the systematic study and evaluation of an individual's behavior using a wide variety of techniques, including direct observation, interviews, and self-monitoring. When used to identify patterns indicative of disorder, the procedure is called **behavioral diagnosis** and is essential in deciding upon the use of specific behavioral or cognitive behavioral interventions.

**behavioral avoidance test** see **BEHAVIORAL APPROACH TASK**.

**behavioral baseline** a **STEADY STATE** of behavior against which the effects of introducing an **INDEPENDENT VARIABLE** may be compared. For example, a child may throw between six and eight tantrums per week over the course of several weeks. This level of tantrums could then serve as a behavioral baseline to assess the effectiveness of a treatment regimen. Also called **behavior baseline**.

**behavioral cardiology** see **CARDIAC PSYCHOLOGY**.

**behavioral coaching** the act of assisting an individual to change cognitive or physical behavior, or both, through demonstration, observation, and feedback.

**behavioral confirmation** the process by which the actions of one person (the target) come to reinforce the expectations of another person (the perceiver) during the course of their social interaction. Behavioral confirmation processes are used to explain how expectations and beliefs, including **STEREOTYPES**, come to affect reality. It is often considered a special case of the **SELF-FULFILLING PROPHECY** or **EXPECTANCY EFFECT**, but behavioral confirmation differs from these terms primarily in emphasizing that the target's actual elicited behavior serves to confirm the perceiver's in-

initial beliefs. See also **CONFIRMATION BIAS**, [coined by Canadian-born U.S. psychologist Mark Snyder (1947– )]

**behavioral congruence** consistency between the aims, attitudes, and values professed by an individual or group and their observable behaviors. In personality research, for example, behavioral congruence occurs when individuals' **SELF-RATINGS** are consistent with their actions, whereas in organizational contexts, it describes the situation in which employees' personal goals and work-related behaviors are consistent with organizational goals.

**behavioral consultation 1.** indirect problem-solving services provided to an individual or organization by a specialized consultant utilizing **BEHAVIOR THEORY**. **2.** in **SCHOOL PSYCHOLOGY**, a model developed in the 1970s by U.S. educational psychologist John R. Bergan (1931– ) to address academic, social, or behavioral problems in students. The model combines **APPLIED BEHAVIOR ANALYSIS** with a step-by-step problem-solving approach to develop interventions and evaluate outcomes. The interventions are provided indirectly by a consulting school psychologist to a **consultee**—that is, to a teacher or other school professional—who directly applies them to students in need. A widely used adaptation of the model, **conjoint behavioral consultation**, was developed by U.S. educational psychologists Susan M. Sheridan (1960– ) and Thomas R. Kratochwill. It engages both teachers and parents collaboratively as consultees in the problem-solving process, with the guidance and support of a consulting school psychologist. See also **MENTAL HEALTH CONSULTATION**.

**behavioral contagion** the rapid copying of the activities of one or a few people by others in the vicinity, often with little analysis of the situation. For example, audience members who all applaud or rise to a standing ovation after an initial person does, regardless of whether they actually enjoyed the performance, are demonstrating behavioral contagion. Also called **behavior contagion**. See also **EMOTIONAL CONTAGION**; **MASS CONTAGION**; **SOCIAL CONTAGION**.

**behavioral contingency** the relationship between a specific response and the frequency, regularity, and level of reinforcement for that response.

**behavioral contract** see **BEHAVIOR CONTRACT**.

**behavioral contrast** in research, an increased response for a more favorable reward following exposure to a less favorable reinforcer (**positive contrast**), or a decreased response for a less favorable reward following exposure to a more favorable reinforcer (**negative contrast**). The phenomenon illustrates that the effects of reinforcement depend on context.

**behavioral coping** any strategy in which a person manages a stressful event or situation by modifying his or her actions. As with the converse **COGNITIVE COPING**, behavioral coping has several forms, including seeking social support or otherwise obtaining help from others, directly attempting to resolve the problematic situation, adjusting customary activities (e.g., by beginning an exercise routine, going on vacation), and expressing emotions.

**behavioral counseling** a system of counseling in which the primary focus is on changing client behavior through **SELF-MANAGEMENT**, **OPERANT CONDITIONING**, and related techniques. Specific behaviors are targeted for modification, and intervention strategies and environmental changes are then established in order to bring about the desired modification.

**behavioral couples therapy** a **COUPLES THERAPY** that focuses on interrupting negative interaction patterns through instruction, modeling, rehearsal, feedback, positive behavior exchange, and structured problem solving. This therapy can be conducted with individual couples or in a couples group format. When practiced with legally married partners, it is called **behavioral marital therapy**, though some practitioners use this term interchangeably with behavioral couples therapy. See also **COGNITIVE BEHAVIORAL COUPLES THERAPY**; **COMMUNICATION SKILLS TRAINING**; **INTEGRATIVE BEHAVIORAL COUPLES THERAPY**.

**behavioral criterion** an aspect of actual (rather than self-reported) behavior that must exist in a person for an accurate diagnosis to be made. Also called **behavior criterion**.

**behavioral deficit** the lack of certain age-specific aspects of behavior in an individual, who is therefore not developmentally on target. Also called **behavior deficit**.

**behavioral diagnosis** see **BEHAVIORAL ASSESSMENT**.

**behavioral disorder** see **BEHAVIOR DISORDER**.

**behavioral dynamics** the internal motivational patterns or causes underlying overt behavior.

**behavioral ecology** the study of the interaction between the environment and the behavior of organisms within that environment. Behavioral ecology is primarily concerned with adaptive aspects of nonhuman **ANIMAL BEHAVIOR**, especially within a natural environment. Research formerly focused on the acquisition and use of resources, but more recent research has also studied the adaptive significance of **SOCIAL INTERACTIONS**, blending behavioral ecology with **SOCIOBIOLOGY**.

**behavioral economics** an interdisciplinary field concerned with understanding how **HEURISTICS**, biases, and other psychological variables influence economic behavior. In contrast to the standard view within traditional economics that people are rational actors who always make choices to maximize their well-being, behavioral economists view human rationality as limited and subject to personal, social, and situational influences (see **BOUNDED RATIONALITY**). Thus, they seek to devise more realistic, psychologically plausible models of economic behavior to account for a variety of decision-making anomalies and market inconsistencies that have been observed, such as **loss aversion** (the tendency to go to disproportionately great lengths to avoid perceived losses), **temporal discounting** (the tendency to prefer small rewards received sooner to larger ones received later), the **ENDOWMENT EFFECT**, the **FRAMING effect**, the **magnitude effect** (the tendency to discount smaller gains more rapidly than larger ones), the **sign effect** (the tendency to discount gains more rapidly than losses), the **status-quo bias** (the tendency to keep things as they are and avoid making changes), and the **sunk-costs effect** (the tendency to continue a course of action in which one has already invested money, time, or effort). [derived primarily from the work of Daniel KAHNEMAN and Amos TVERSKY]

**behavioral embryology** the study of the behavior of embryos. Embryonic chickens and ducks display sensitivity to different types of sensory stimuli before hatching, and motor movements similar to those needed for feeding can be seen. Embryonic rats also display many sensory and motor capacities, as well as learning, prior to birth.

**behavioral endocrinology** the study of the relation-

ships between the functioning of the endocrine glands and neuroendocrine cells (see **NEUROENDOCRINOLOGY**) and behavior. A variety of endocrine glands, including the hypothalamus, the pituitary gland, and the adrenal glands, have been shown to affect behavior. For example, gonadal secretion of sex hormones influences sexual behavior, and secretion of corticosteroids by the adrenal glands influences physiological and behavioral responses to stress.

**behavioral engineering** the use of technology to modify behavior, as in the use of metronomes to reduce stuttering. The term is also used as a synonym for **BEHAVIOR MODIFICATION** itself.

**behavioral family therapy** a family treatment that is characterized by behavioral analysis of presenting problems and a focus on overt behavior change through application of learning-based behavioral principles and techniques of **BEHAVIOR THERAPY**. Techniques used to modify targeted behavior patterns include behavior contracts, instruction, modeling, and rehearsal.

**behavioral finance** a field, closely related to **BEHAVIORAL ECONOMICS**, that studies the impact of emotion, cognitive biases, and other psychological factors on financial decision making and hence on financial markets. In particular, behavioral finance emphasizes the role such factors play in irrational investment behavior (e.g., under- or over-reaction to financial information) and its consequences in market fluctuations (e.g., financial bubbles, panics). See also **MENTAL ACCOUNTING**.

**behavioral genetics** the study of familial or hereditary behavior patterns and of the genetic mechanisms of behavior traits. Also called **behavior genetics**.

**behavioral geography** the study of the cognitive processes by which humans form an understanding of their environment and the influence of these processes and this understanding on behavior. Researchers in the field are particularly interested in the analysis of **COGNITIVE MAPS**, seeking to answer such questions as how well these maps correspond to the environments they represent and how people utilize them in understanding their surroundings and in making decisions about how to behave. For example, some **behavioral geographers** attempt to explain criminal activity or risk taking (e.g., living in flood plains) in terms of such an approach.

**behavioral group therapy** a form of **GROUP THERAPY** that applies learning-based behavioral principles and techniques, including modeling, rehearsal, social reinforcement, **SYSTEMATIC DESENSITIZATION**, and other methods of **BEHAVIOR THERAPY**, in the context of a group. See also **COGNITIVE BEHAVIORAL GROUP THERAPY**.

**behavioral health** an interdisciplinary subspecialty of **BEHAVIORAL MEDICINE** that promotes a philosophy emphasizing individual responsibility in the maintenance of one's own health and in the prevention of illness and dysfunction by means of self-initiated activities (jogging, exercising, healthy eating, not smoking, etc.). [proposed by U.S. psychologist Joseph D. Matarazzo (1925– )]

**behavioral health care** see **MENTAL HEALTH CARE**.

**behavioral hierarchy** see **BEHAVIOR HIERARCHY**.

**behavioral homeostasis** an organism's tendency to maintain stability or equilibrium through various behavioral processes. For example, temperature regulation is achieved via shivering, sweating, or panting, and satiety is achieved by the initiation and then cessation of feeding be-

havior. Also called **behavior homeostasis**. See also **HOMEOSTASIS**.

**behavioral homology** functional similarity (i.e., common behavior) across species, suggestive of a shared ancestral origin. Also called **behavior homology**.

**behavioral immunogen** a behavior or lifestyle associated with a decreased risk of illness and with longer life. Examples of behavioral immunogens are moderate consumption of alcohol, regular exercise, adequate sleep, and a healthy diet. Compare **BEHAVIORAL PATHOGEN**.

**behavioral incident** a single, separate behavioral event with a clearly defined start and finish (e.g., brushing one's teeth), which may be combined with other events to form a **BEHAVIORAL SEQUENCE** (e.g., a morning grooming routine of brushing one's teeth, washing one's face, and combing one's hair).

**behavioral inhibition** a temperamental predisposition characterized by restraint in engaging with the world combined with a tendency to scrutinize the environment for potential threats and to avoid or withdraw from unfamiliar situations or people. It is often related to **SOCIAL ANXIETY** and a predisposition for greater physiological reactivity to novel situations. [first described by U.S. psychologists Jerome KAGAN and J. Steven Reznick (1951– )]

**behavioral inhibition system (BIS)** in **REINFORCEMENT SENSITIVITY THEORY**, the physiological mechanism believed to control aversive motivation. It is theorized to be sensitive to signals of punishment and nonreward. Activity in this system suppresses behavior that may lead to negative or painful outcomes and inhibits movement toward goals. It has also been held that this system is responsible for the experience of negative feelings such as fear, anxiety, frustration, and sadness in response to these signals and that having a strong or chronically active BIS tends to result in introversion. Compare **BEHAVIORAL APPROACH SYSTEM**. [described by British psychologist Jeffrey Alan Gray (1934–2004)]

**behavioral integration** 1. the combination of separate individual behaviors into a synchronized or coordinated behavioral unit. 2. a model for environmentally sound behavior that specifies the relevant cognitions and affects and their interactions. Also called **behavior integration**.

**behavioral interview** an approach to clinical interviewing that focuses on relating a problem behavior to antecedent stimuli and the consequences of reinforcement.

**behaviorally anchored rating scale (BARS)** a behavior-based measure used in evaluating job performance. Employees are evaluated on each performance dimension by comparing their job behaviors with specific behavior examples that anchor each level of performance. The task of the rater is to find that point on the scale that is most typical of the employee's performance on the dimension. BARS can also be used to evaluate the performance of job applicants in a **SITUATIONAL INTERVIEW**. Compare **BEHAVIORAL OBSERVATION SCALE**; **MIXED-STANDARD SCALE**. See also **CRITICAL-INCIDENT TECHNIQUE**.

**behavioral marital therapy** see **BEHAVIORAL COUPLES THERAPY**.

**behavioral medicine** a field that applies behavioral theories and methods to the prevention and treatment of medical and psychological disorders. Areas of application include chronic illness, lifestyle issues (e.g., substance

abuse, obesity), SOMATOFORM DISORDERS, and the like. Behavioral medicine is an interdisciplinary field in which physicians, psychologists, psychiatrists, social workers, and others work together in patient care; it includes strong integration of biological, psychosocial, behavioral, and interpersonal perspectives in developing biopsychosocial models of illnesses and interventions to treat and manage them as well as to promote healthy behaviors. See also BEHAVIORAL HEALTH.

**behavioral mimicry** see MIMICRY.

**behavioral model** a conceptualization of psychological disorders in terms of overt behavior patterns produced by learning and the influence of REINFORCEMENT CONTINGENCIES. Treatment techniques, including SYSTEMATIC DESENSITIZATION and MODELING, focus on modifying ineffective or maladaptive patterns.

**behavioral modeling** **1.** a training technique in which workers are instructed on and then shown a skill or problem-solving method that they then practice using ROLE PLAY or a computer simulation. **2.** any conscious or non-conscious imitation of the behavior of another person.

**behavioral momentum** the resistance to change through time of some activity in the face of manipulations intended to disrupt that activity. The more difficult it is to disrupt an activity, the greater its behavioral momentum.

**behavioral neurochemistry** the study of the relationships between behavior and biochemical influences, including the effects of drugs on metabolic processes within the brain and the roles of different NEUROTRANSMITTERS and neuroregulatory substances.

**behavioral neuropsychology** a subspecialty of CLINICAL NEUROPSYCHOLOGY that integrates behavior therapy techniques into the treatment of individuals with brain damage.

**behavioral neuroscience** a branch of NEUROSCIENCE and BIOLOGICAL PSYCHOLOGY that seeks to understand and characterize the specific neural circuitry and mechanisms underlying behavioral propensities or capacities.

**behavioral observation scale (BOS)** a behavior-based measure used in evaluating job performance. The person carrying out the rating uses one or more scales to gauge the frequency with which the employee has demonstrated effective behaviors in the job. A modified version of this measure also is used in other contexts, such as psychological research and clinical assessment. Compare BEHAVIORALLY ANCHORED RATING SCALE; MIXED-STANDARD SCALE. See also CRITICAL-INCIDENT TECHNIQUE.

**behavioral pathogen** a behavior or lifestyle that may increase the risk of developing illness or disability and may reduce life expectancy. Examples of behavioral pathogens are smoking, drug abuse, poor diet, unprotected sexual activity, and a sedentary lifestyle. Compare BEHAVIORAL IMMUNOGEN.

**behavioral pattern** see BEHAVIOR PATTERN.

**behavioral pediatrics** a multidisciplinary specialty that is often part of PEDIATRIC PSYCHOLOGY, clinical child psychology, and HEALTH PSYCHOLOGY. Practitioners address such problems as habit disorders, oppositional behavior, sleep and eating disorders, and physical health problems (e.g., traumatic brain injury). In the medical literature, the specialty is also called **developmental-behavioral pediatrics**.

**behavioral pharmacology** a branch of PHARMACOLOGY concerned with the physiological and behavioral mechanisms by which drugs operate, encompassing not only the effects of drugs on behavior but also how behavioral factors contribute to the actions of drugs and the ways in which they are used.

**behavioral phenotype** a pattern of observable motor, cognitive, linguistic, and social abnormalities that is consistently associated with a disorder. In some cases, the behavioral phenotype may constitute a discrete psychological disorder; in others, the abnormalities are usually not regarded as symptoms of a psychological disorder.

**behavioral plasticity** the degree to which behavior can be influenced and modified by social experience and learning. High plasticity leaves ample room for change, whereas low plasticity involves inflexible behavior patterns.

**behavioral procedure** any psychological procedure based on the principles and techniques of BEHAVIOR THEORY. It may be used in basic research or in applied settings. See APPLIED BEHAVIOR ANALYSIS.

**behavioral psychology** an approach to understanding psychological phenomena that focuses on observable aspects of behavior and makes use of BEHAVIOR THEORY for explanation. See also BEHAVIORISM.

**behavioral psychotherapy** see BEHAVIOR THERAPY.

**behavioral rehearsal** see BEHAVIOR REHEARSAL.

**behavioral relaxation training** a form of relaxation training and BEHAVIOR THERAPY that emphasizes labeling of sensations, modeling, reinforcement, and therapist feedback. See also PROGRESSIVE RELAXATION.

**behavioral repertoire** see REPERTOIRE.

**behavioral risk factor** any specific behavior or pattern of behaviors (e.g., overeating or smoking) that increases an individual's likelihood of developing a disorder, disease, or syndrome.

**behavioral science** any of various disciplines that use systematic observation and experimentation in the scientific study of human and nonhuman animal actions and reactions. Psychology, sociology, and anthropology are examples.

**behavioral segment** see BEHAVIOR SEGMENT.

**behavioral self-control training** a technique in BEHAVIOR THERAPY that uses self-monitoring, self-evaluation, self-reinforcement, coaching, behavior contracts, and relapse prevention approaches to help clients achieve active coping strategies, to increase their sense of mastery, and to decrease undesired habits (e.g., nail biting). See also BEHAVIORAL WEIGHT CONTROL THERAPY.

**behavioral sequence** a combination of BEHAVIORAL INCIDENTS directed toward a particular goal or outcome (e.g., getting ready for work in the morning). Also called **behavior episode**.

**behavioral sex therapy** a form of SEX THERAPY that uses BEHAVIOR THERAPY methods to bring about changes to behavioral sequences that hinder healthy sexual functioning. Behavioral sequences can include those that are relationship based (e.g., communication behaviors) or specifically sexually based (e.g., avoidance of sexual stimuli).

**behavioral sink** the destructive behaviors among non-human animals that occur with overcrowding; these in-



clude increased aggression and decreased maternal behavior. This was an unexpected finding of studies in 1962 by U.S. experimental psychologist John B. Calhoun (1917–1995) in which rats were given unlimited food and water and allowed to reproduce without intervention. Population density increased rapidly, and the animals displayed increasingly pathological behavior.

**behavioral sleep medicine (BSM)** a growing clinical specialty area combining aspects of health psychology and sleep disorders medicine. Practitioners include psychologists, physicians, nurse practitioners, and other health care professionals certified in the discipline who seek to understand the cognitive and behavioral factors that contribute to the development and maintenance of adult and pediatric sleep disorders and who use this knowledge to provide empirically validated, nonpharmacological interventions. For example, a BSM practitioner would help a client with insomnia to fall asleep faster, wake up less frequently, and sleep more efficiently using specialized behavioral and cognitive techniques that normalize the person's sleep schedule and condition him or her to see the bedroom as a restful place.

**behavioral specialization** in animal behavior, adaptation to the conditions and challenges of a specific environment as applied to the selection of habitats, food, and mates. For example, when foraging for foods in competition with other species, those individuals that specialize in a few types of foods, known as "specialists," are usually more efficient in finding and processing food than are generalists. Finches in the Galápagos Islands have diverged, some specializing on insects, others on seeds. Within each of these broad groupings, some specialize on larger and others on smaller food items. Although behavioral specialization provides a competitive advantage in stable environments, generalists can respond more quickly to changing environments. Highly endangered species tend to show specialization.

**behavioral study of obedience** the experimental analysis, especially as carried out by Stanley MILGRAM in the 1960s, of individuals' willingness to obey the orders of an authority. In Milgram's experiment, each participant played the role of a teacher who was instructed to deliver painful electric shocks to other "participants" for each failure to answer a question correctly. The latter were in fact CONFEDERATES who did not actually receive shocks for their many deliberate errors. Milgram found that a substantial number of participants (65%) were completely obedient, delivering what they believed were shocks of increasing intensity despite the protestations and apparent suffering of the victims. See also AGENTIC STATE; DESTRUCTIVE OBEDIENCE.

**behavioral technology** experimentally established procedures (influenced by scientific behavior analysis) that are designed to produce behavioral change.

**behavioral teratology** the study of impairments in behavior that are produced by embryonic or fetal exposure to toxic substances that affect the developing organism (see TERATOGEN).

**behavioral theory of leadership** any of various models that define and explain leadership in terms of the actions leaders take to influence others rather than in terms of their motivations, traits, or past experiences. In these models, leadership is viewed as a behavioral response that can be learned. See also LEADERSHIP THEORIES.

**behavioral toxicity** an adverse behavioral change produced by psychotropic drugs, for example, insomnia, sedation, impaired psychomotor activity, or changes in mental status.

**behavioral toxicology** the study of the behavioral impact of toxic exposure. There is increasing evidence that many toxins produce subtle behavioral changes, often in neurosensory functioning, at levels far below thresholds for detectable neurological damage. Perhaps the best known example is lead, which is now banned from gasoline and interior paint in many countries because of its low-level toxicological effects on the behavior of developing children.

**behavioral weight control therapy** any intervention that uses the principles and techniques of BEHAVIOR THERAPY to help clients change eating and exercise habits to achieve and maintain a healthy weight. Practiced in group or individual sessions, these techniques include self-monitoring, behavior contracts, environmental change (e.g., eating seated and only in a specific room), and reinforcement (e.g., social or monetary). See also BEHAVIORAL SELF-CONTROL TRAINING.

**behavior analysis** the decomposition of behavior into its component parts or processes. This approach to psychology is based on the EXPERIMENTAL ANALYSIS OF BEHAVIOR, in which behavior is the subject matter for research rather than an indicator of underlying psychological entities or processes. Emphasis is placed on interactions between behavior and the environment. See APPLIED BEHAVIOR ANALYSIS. [originally developed by B. F. SKINNER]

**behavior-based safety** an approach in SAFETY ENGINEERING based on the premise that human behavior is learned and habitual and can thus be modified to avoid error and accidents. Its main application is in the field of TRAINING SYSTEMS DESIGN, where the aim is to devise training programs that ingrain good safety habits. Additional applications include the design of organizational mechanisms to enhance workers' involvement in safety programs and the design of machines or equipment to accord with the behaviors and habits of workers or consumers.

**behavior baseline** see BEHAVIORAL BASELINE.

**behavior chaining** see CHAINING.

**behavior change 1.** a systematic approach to changing behavior through the use of OPERANT CONDITIONING. **2.** any alteration or adjustment of behavior that affects a patient's functioning, brought about by psychotherapeutic or other interventions or occurring spontaneously.

**behavior checklist** a list of actions, responses, or other behaviors that are to be recorded each time they are observed, as by an experimental investigator, study participant, or clinician.

**behavior coding** a method of recording observations in which defined labels are used by specially trained individuals to denote specific qualities and characteristics of behaviors as they are witnessed. For example, a developmental researcher might use the following coding scheme for infant vocalizations: (a) vowels; (b) syllables (i.e., consonant-vowel transitions); (c) babbling (a sequence of repeated syllables); and (d) other (e.g., crying, laughing, vegetative sounds such as cooing). Behavior coding systems typically are specific to a given study and the behaviors under investigation.

**behavior-constraint theory** the concept that an in-

dividual may acquire **LEARNED HELPLESSNESS** when repeated efforts fail to gain control over excessive or undesirable environmental stimuli.

**behavior contract** an agreement between therapist and client in which the client agrees to carry out certain behaviors, usually between sessions but sometimes during the session as well. Also called **behavioral contract**. See also **CONTRACT**; **CONTINGENCY CONTRACT**.

**behavior control** **1.** the use of conditioning, therapeutic techniques, or other methods to steer individual or group behavior in a desired direction. For example, behavior control may be used to help children with conduct problems engage in more appropriate actions at school and at home. In some contexts, the term also refers to the misuse of certain treatments (e.g., drugs) to manage institutionalized individuals, particularly patients with mental illnesses. **2.** see **FATE CONTROL**.

**behavior criterion** see **BEHAVIORAL CRITERION**.

**behavior deficit** see **BEHAVIORAL DEFICIT**.

**behavior determinant** any factor that produces a behavioral effect.

**behavior diary** a detailed log of a person's activities or responses as recorded by a trained observer or the individual himself or herself, usually on a regular basis over a specified interval of time. For example, a behavior diary might be used to log a study participant's activities over a 24-hour period.

**behavior disorder** any persistent and repetitive pattern of behavior that violates societal norms or rules, seriously impairs a person's functioning, or creates distress in others. The term is used in a very general sense to cover a wide range of disorders or syndromes. Also called **behavioral disorder**. See also **PRIMARY BEHAVIOR DISORDER**.

**behavior disorders of childhood and adolescence** observable behaviors in young people that deviate from the norm. The term is often used in **SPECIAL EDUCATION** and school placement.

**behavior dysfunctions classification** the classification of personal problems on the basis of behaviors rather than symptoms or hypothetical constructs. Such a classification leads the clinician to work on helping the patient change behaviors rather than treating syndromes or diseases.

**behavior episode** see **BEHAVIORAL SEQUENCE**.

**behavior field** any set of stimuli or conditions, or accumulation of factors, that produces a behavioral effect.

**behavior genetics** see **BEHAVIORAL GENETICS**.

**behavior hierarchy** a ranking of possible responses based on the relative probabilities of their being elicited, with more probable behaviors ranked higher than less probable behaviors. Also called **behavioral hierarchy**.

**behavior homeostasis** see **BEHAVIORAL HOMEOSTASIS**.

**behavior homology** see **BEHAVIORAL HOMOLOGY**.

**behavior integration** see **BEHAVIORAL INTEGRATION**.

**behaviorism** *n.* an approach to psychology, formulated in 1913 by John B. WATSON, based on the study of objective, observable facts rather than subjective, qualitative processes, such as feelings, motives, and consciousness. To

make psychology a naturalistic science, Watson proposed to limit it to quantitative events, such as stimulus–response relationships, effects of conditioning, physiological processes, and a study of human and animal behavior, all of which can best be investigated through laboratory experiments that yield objective measures under controlled conditions. Historically, behaviorists held that mind was not a proper topic for scientific study since mental events are subjective and not independently verifiable. With its emphasis on activity as an adaptive function, behaviorism is seen as an outgrowth of **FUNCTIONALISM**. See **DESCRIPTIVE BEHAVIORISM**; **METHODOLOGICAL BEHAVIORISM**; **NEOBHAVIORISM**; **RADICAL BEHAVIORISM**.

**behaviorist** *n.* a person who espouses the principles of **BEHAVIORISM** and whose activities are deliberately guided by those principles. See also **BEHAVIOR ANALYSIS**; **BEHAVIOR MODIFICATION**.

**behavior management** the use of **APPLIED BEHAVIOR ANALYSIS** to produce significant change in human behavior. See also **ORGANIZATIONAL BEHAVIOR MANAGEMENT**.

**behavior mapping** a technique of studying the activities of individuals within a space by noting what happens where. The degree of variability of behavior, as well as its association with certain types of environmental features, is a useful starting point to build or test hypotheses about, for example, architectural design. See also **ARCHITECTURAL PROGRAMMING**.

**behavior modification** the use of **OPERANT CONDITIONING**, **BIOFEEDBACK**, **MODELING**, **AVERSION CONDITIONING**, **RECIPROCAL INHIBITION**, or other learning techniques as a means of changing human behavior. For example, behavioral modification is used in clinical contexts to improve adaptation and alleviate symptoms and in organizational contexts to encourage employees to adopt safe work practices. The term is often used synonymously with **BEHAVIOR THERAPY**.

**behavior observation** the recording or evaluation of the ongoing behavior of one or more research participants by one or more observers. Behavior observation may be carried out live or through video media and often involves the use of rating scales, checklists, or charts.

**behavior pattern** a complex arrangement of two or more responses that occur in a prescribed order. Behavior patterns are also referred to as **chains of behavior**, highlighting their nature as a complex linking of simpler segments of behavior. They may be formed via the **OPERANT CONDITIONING** of various segments presented in the appropriate order. Also called **behavioral pattern**.

**behavior problem** a pattern of disruptive behavior that generally falls within social norms and does not seriously impair a person's functioning.

**behavior rating** use of a scale to assess the degree to which an individual displays one or more behaviors in a given situation.

**Behavior Rating scale** see **BAYLEY SCALES OF INFANT AND TODDLER DEVELOPMENT**.

**behavior record** a collection of observations of an organism's behavior within a specified time frame. In animal studies, this involves documenting all observable actions of an individual within a defined period of time. In educational psychology, a behavioral record is a teacher's written observations of a student's behavior and personality (see **ANECDOTAL RECORD**).

**behavior rehearsal** a technique used in BEHAVIOR THERAPY or COGNITIVE BEHAVIOR THERAPY for modifying or enhancing social or interpersonal skills. The therapist introduces effective interpersonal strategies or behavior patterns to be practiced and rehearsed by the client until these are ready to be used in a real-life situation. The technique is also commonly used in ASSERTIVENESS TRAINING. Also called **behavioral rehearsal**.

**behavior reversal** a method of BEHAVIOR MODIFICATION in which the client, supervised by the therapist, practices desirable responses to interpersonal conflicts that are often opposite to his or her usual behavior.

**behavior sampling** a data collection method in which the behaviors of one or more individuals are observed and recorded during a designated period of time. Observations can be made in either a natural or a research setting, and they may be conducted over multiple time periods with or without the awareness of the individual being observed.

**behavior segment** a distinct response that, when linked with other responses, forms a BEHAVIOR PATTERN or chain. Also called **behavioral segment**.

**behavior setting** the geographical, physical, and social situation as it affects relationships and behavior. See also ECOLOGICAL PSYCHOLOGY. [identified by U.S. developmental psychologist Roger G. Barker (1903–1990)]

**behavior shaping** see SHAPING.

**behavior system** **1.** the different activities that can be undertaken to reach the same goal or carry out the same function; for example, communication is achieved through writing, speaking, or gestures. **2.** the expression of important motives (e.g., hunger, sex, aggression), which varies between cultures and among individuals within the same culture who have had different training and experiences. Also called **activity system**.

**behavior theory** the assumption that behavior, including its acquisition, development, and maintenance, can be adequately explained by stimuli- and response-based principles of learning. Behavior theory attempts to describe environmental influences on behavior, often using controlled studies with laboratory animals. It encompasses historical approaches to formal theorizing, such as those of Clark L. HULL and Kenneth W. SPENCE, and the operant theory of B. F. SKINNER, as well as contemporary approaches to behavior. Also called **general behavior theory**.

**behavior therapy** a form of psychotherapy that applies the principles of learning, OPERANT CONDITIONING, and CLASSICAL CONDITIONING to eliminate symptoms and modify ineffective or maladaptive patterns of behavior. The focus of this therapy is upon the behavior itself and the CONTINGENCIES and environmental factors that reinforce it, rather than exploration of the underlying psychological causes of the behavior. A wide variety of techniques are used in behavior therapy, such as BEHAVIOR REHEARSAL, BIOFEEDBACK, MODELING, and SYSTEMATIC DESENSITIZATION. Also called **behavioral psychotherapy; conditioning therapy**.

**Behrens–Fisher problem** the problem of comparing the means of two samples drawn from different populations when the variances of these populations are not assumed to be equal. In other words, the problem involves the difficulty of making statistical inferences in the absence of equal population variances. The Behrens–Fisher problem may be addressed in many ways, such as by using a T

TEST to estimate a PROBABILITY LEVEL ( $p$  value) or by using CONFIDENCE INTERVALS to estimate the range of uncertainty around the mean difference. [W. U. Behrens; Ronald Aylmer FISHER]

**being-beyond-the-world** *n.* in EXISTENTIAL PSYCHOLOGY, the potential for human beings to transcend the limitations of BEING-IN-THE-WORLD, usually through selfless love. See also DASEIN. [introduced by Swiss existential psychologist Ludwig Binswanger (1881–1966)]

**being cognition (B-cognition)** **1.** in the humanistic psychology of Abraham MASLOW, an exceptional type of cognition that can be distinguished from one's everyday perception of reality (**deficiency cognition** or **D-cognition**). Being cognition involves a dialectical blending of two ways of experiencing: In the first, a person is aware of the whole universe and the interrelatedness of everything within it, including the perceiver; in the second, a person becomes entirely focused on a single object (e.g., a natural phenomenon, a work of art, or a loved person) to the extent that the rest of the universe, including the perceiver, seems to disappear. According to Maslow, self-actualizers (see SELF-ACTUALIZATION) frequently experience being cognitions. See also PEAK EXPERIENCE; TIMELESS MOMENT. **2.** awareness of the inner core of one's existence, that is, one's self or identity.

**being-in-the-world** *n.* in theories and clinical approaches derived from EXISTENTIALISM, the particular type of being characteristic of humans, in contrast to the type of being of nonhuman animals, inanimate objects, or abstractions. The term is roughly synonymous with DASEIN, the term used by German philosopher Martin Heidegger (1889–1976). The word *being* is meant to emphasize that human existence is an activity more than a state or condition. Similarly, *world* is meant to convey a much richer and more meaningful ground for human life than would be conveyed by a more sterile term, such as *environment*. Being-in-the-world is by its very nature oriented toward meaning and growth; while it characterizes the type of being of all humans, it is also unique for every person and can be seen to be offering an explanation of what in other psychological traditions might be called IDENTITY or SELF. Compare BEING-BEYOND-THE-WORLD. See also WORLD DESIGN.

**being love (B-love)** in Abraham MASLOW's humanistic psychology, a form of love characterized by mutuality, genuine concern for another's welfare and pleasure, and reduced dependency, selfishness, and jealousy. B-love is one of the qualities Maslow ascribes to self-actualizers (see SELF-ACTUALIZATION). Compare DEFICIENCY LOVE.

**being motivation** see METAMOTIVATION.

**being–not being** the fundamental issue that, according to German philosopher Martin Heidegger (1889–1976), motivates human beings, namely, the question of existence and nonexistence (personhood and mortality). See DASEIN.

**being psychology** a psychological perspective that deals with “persons insofar as they are ends-in-themselves.” It is concerned with acknowledgment of the sacred, the unique, and the incomparable in individual human beings. See also HUMANISTIC PSYCHOLOGY; SELF-ACTUALIZATION. [developed by Abraham MASLOW]

**being value** see METANEED.

**Békésy audiometer** the first automatic AUDIOMETER with patient-controlled push-button responses and an ink

recorder to graph the audiogram throughout the testing process. It yields tracings for continuous and interrupted tones at controlled frequencies. [Georg von BÉKÉSY]

**Békésy traveling wave** see BASILAR MEMBRANE. [Georg von BÉKÉSY]

**Bekhterev's nystagmus** a form of NYSTAGMUS that develops after the loss of a second LABYRINTH. Nystagmus occurs after the destruction of the first of the two labyrinths but eventually subsides, only to recur as a compensatory effect after loss of the second labyrinth. Also called **compensatory nystagmus**. [Vladimir M. BEKHTEREV]

**bel** (symbol: B) *n.* see DECIBEL.

**belief** *n.* 1. acceptance of the truth, reality, or validity of something (e.g., a phenomenon, a person's veracity), particularly in the absence of substantiation. 2. an association of some characteristic or attribute, usually evaluative in nature, with an ATTITUDE OBJECT (e.g., this car is reliable).

**belief bias** the tendency to be influenced by one's knowledge about the world in evaluating conclusions and to accept them as true because they are believable rather than because they are logically valid. Belief bias is most often assessed with syllogistic reasoning tasks in which the believability of the conclusion conflicts with logical validity. For example, given the syllogisms *All flowers have petals; roses have petals; therefore, roses are flowers* and *All fish can swim; tuna are fish; therefore, tuna can swim*, an individual is more likely to rely upon prior knowledge and personal beliefs and to accept both conclusions as valid when in fact only the second is logically valid.

**belief-desire reasoning** the process by which one explains and predicts another's behavior on the basis of one's understanding of the other's desires and beliefs. Belief-desire reasoning is the basis for THEORY OF MIND. See also MINDBLINDNESS.

**belief in a just world** see JUST-WORLD HYPOTHESIS.

**belief perseverance** the tendency to maintain a belief even after the information that originally gave rise to it has been refuted or otherwise shown to be inaccurate.

**belief system** a set of two or more beliefs, attitudes, or both that are associated with one another in memory. See also ATTITUDE SYSTEM.

**belittling** *n.* acting, speaking, or thinking in a way intended to lessen the perceived value or status of the target. —**belittle** *vb.*

**belladonna alkaloid** any substance obtained from the shrub *Atropa belladonna* (commonly known as **belladonna** or **deadly nightshade**). Such substances were known to the ancient Hindus and were used in the Middle Ages as poisons (the genus is named for Atropos, eldest of the mythological Fates, who cuts the thread of life). Their pharmacology was unknown until the 1860s, when they were found to affect heart rate, salivary secretion, and other body functions. ATROPINE and SCOPOLAMINE are the best known examples.

**belladonna delirium** delirium due to the effects on the central nervous system of large doses of belladonna alkaloids, such as atropine and scopolamine. Symptoms, in addition to delirium, include hallucinations and overactive coordinated limb movements.

**belladonna poisoning** poisoning due to ingestion of berries of the belladonna plant, *Atropa belladonna* (also

called deadly nightshade). These contain atropine, which paralyzes the PARASYMPATHETIC NERVOUS SYSTEM. The symptoms include visual hallucinations, mutism, dilated pupils, unresponsiveness, and disorientation.

**bell and pad** a device used in treatments aimed at controlling nocturnal enuresis (bed-wetting) in children. If the child begins to lose bladder control while asleep, an electric circuit within a bed pad sets off an alarm upon initial detection of the urine, thus awakening the child before he or she wets the entire bed.

**bell curve** the characteristic curve obtained by plotting a graph of a NORMAL DISTRIBUTION. With a large rounded central peak tapering off on either side, it resembles a cross-sectional representation of a bell. Also called **bell-shaped curve**.

**belle indifférence** see LA BELLE INDIFFÉRENCE.

**Bellevue scale** see WECHSLER ADULT INTELLIGENCE SCALE.

**Bell-Magendie law** the principle that the VENTRAL ROOTS of the spinal cord are motor in function and the DORSAL ROOTS are sensory. [Charles **Bell** (1774–1842), Scottish surgeon and anatomist; François **Magendie** (1783–1855), French physiologist]

**Bell's mania** see LETHAL CATATONIA. [Luther Vose **Bell** (1806–1862), U.S. physician]

**Bell's palsy** paralysis of the FACIAL NERVE, causing weakness of the muscles on one side of the face and resulting in a distorted expression, inability to close the eye, and often taste loss and sensitivity to sound. [Charles **Bell** (1774–1842), Scottish surgeon and anatomist]

**Bell's phenomenon** the upward and outward movement of the eye that normally occurs when attempting to close the eye. It is seen most prominently in individuals with Bell's palsy when they attempt to close the eye on the affected side. [Charles **Bell**]

**belonging** *n.* the feeling of being accepted and approved by a group or by society as a whole. Also called **belongingness**.

**belongingness principle** see PRINCIPLE OF BELONGINGNESS.

**below average** denoting a range of intellectual functioning that is just below the average range, roughly between 80 and 90 on most IQ scales, and is inconsistent with the presence of intellectual disability. Such a range may also be described as **low normal** or **dull normal**, but *below average* is now the preferred term.

**below-average effect** the tendency of a person to underestimate his or her intellectual and social abilities relative to others. The below-average effect is common when the skill in question is relatively hard (e.g., sculpting human figures from clay), whereas the opposite ABOVE-AVERAGE EFFECT generally occurs when the skill in question is relatively easy (e.g., operating a computer mouse). Also called **worse-than-average effect**.

**Bem Sex Role Inventory (BSRI)** a questionnaire listing 20 characteristics considered in American society to be more desirable for men (e.g., leadership ability, forcefulness), 20 characteristics considered more desirable for women (e.g., gentleness, affectionateness), and 20 neutral characteristics considered desirable for either sex (e.g., truthfulness, happiness). Participants indicate how well each of the 60 characteristics describes themselves using a

scale ranging from 1 (*never or almost never true*) to 7 (*always or almost always true*). Responses are scored and individuals subsequently categorized as masculine (high on traits associated with masculinity and low on those associated with femininity), feminine (high on traits associated with femininity and low on those associated with masculinity), androgynous (high on both types of traits), or undifferentiated (low on both types of traits). In measuring a person's adherence to culturally specified standards of desirable behavior for men and women (see SEX ROLE), the BSRI was intended to eschew the traditional dichotomy of masculinity and femininity in favor of a more flexible, situationally responsive conceptualization. See also **MASCULINITY-FEMININITY TEST**. [developed in 1974 by Sandra Lipsitz Bem (1944–2014), U.S. psychologist]

**Benadryl** *n.* a trade name for DIPHENHYDRAMINE.

**benchmark** *n.* a measure of best performance for a particular process or outcome, which can be used as a reference to improve performance in other settings.

**benchmark job** a specific job that is used as a reference point for the purpose of evaluation or comparison. Jobs chosen as benchmarks tend to be well known, remain consistent across diverse organizations and industries, and have readily available external market data. They can therefore be and are used to create job descriptions, set pay levels, and measure performance. See CLASSIFICATION METHOD; FACTOR-COMPARISON METHOD.

**bench trial** a trial in which the judge, not a jury, decides the defendant's guilt or innocence.

**Bender Visual-Motor Gestalt Test** a VISUOCONSTRUCTIVE TEST in which the participant first copies line drawings of 16 geometric figures onto blank pieces of paper (Copy Phase) and then redraws them from memory (Recall Phase). All reproductions are scored on a 5-point scale, ranging from 0 (*no resemblance*) to 4 (*nearly perfect*). The test is appropriate for individuals ages 4 years and older and is used to assess visual-motor functioning and perceptual ability. It is sometimes also used, albeit controversially, in conjunction with personality tests to determine the presence of emotional and psychological disturbances, such as schizophrenia. Originally developed in 1938 with 9 figures, the test (often shortened to **Bender-Gestalt**) is now in its second edition (published in 2003). [Lauretta Bender (1897–1987), U.S. psychiatrist]

**bends** *n.* see DECOMPRESSION SICKNESS.

**benefectance** *n.* a combination of benevolence and effectiveness. According to the U.S. social psychologist who coined the term, Anthony G. Greenwald (1939– ), people routinely distort memories of their own prior actions so as to enhance their own sense of benefectance. That is, they engage in motivated distortion of information so as to appear to themselves and others as morally good, well intentioned, competent, and successful. See POSITIVE ILLUSION.

**Benham's top** a disk with a black and white design that appears to consist of colored rings when rotated. See FECHNER'S COLORS. [Charles E. Benham (1860–1929), British scientist]

**benign** *adj.* **1.** in mental health, denoting a disorder or illness that is not serious and has a favorable prognosis. **2.** denoting a disease condition that is relatively mild, transient, or not associated with serious pathology. Compare MALIGNANT.

**benign familial macrocephaly** see MACROCEPHALY.

**benign senescence (benign senescent forgetfulness)** see AGE-ASSOCIATED MEMORY IMPAIRMENT.

**benign stupor** **1.** a state of unresponsiveness, immobility, and indifference to one's surroundings that is unlikely to be permanent. **2.** PSYCHOMOTOR RETARDATION and apathy that often occur in severe MAJOR DEPRESSIVE EPISODES.

**benny** *n.* (*pl. bennies*) slang for an amphetamine tablet. See AMPHETAMINES.

**Benton Visual Retention Test (BVRT)** a drawing and recall task in which the participant is briefly shown cards containing two or three geometric designs and then asked to reproduce them from memory. The test assesses visual perception, short-term visual memory, and visuo-constructional ability; it is scored for the number of correct reproductions and for the number and types of errors. Developed originally in 1946 by Arthur L. BENTON, the test underwent several revisions and is now in its fifth edition (published in 1991). Also called **Benton Revised Visual Retention Test (BRVRT)**.

**Benzedrine** *n.* a trade name for racemic AMPHETAMINE; that is, a mixture of levoamphetamine and dextroamphetamine.

**benzene** *n.* a volatile solvent that, when chronically inhaled, can cause kidney failure and death. See INHALANT.

**benzisoazole** *n.* a class of ATYPICAL ANTIPSYCHOTICS that include RISPERIDONE and ILOPERIDONE.

**benzodiazepine** *n.* any of a family of drugs that depress central nervous system activity (CNS DEPRESSANTS) and also produce sedation and relaxation of skeletal muscles. Benzodiazepines include the prototype CHLORDIAZEPOXIDE; other anxiolytics such as ALPRAZOLAM, CLONAZEPAM, and DIAZEPAM; and hypnotics such as ESTAZOLAM, FLURAZEPAM, QUIAZEPAM, TEMAZEPAM, and TRIAZOLAM. They are commonly used in the treatment of generalized anxiety, panic disorder, and insomnia and are useful in the management of acute withdrawal from alcohol and of seizure disorders. Clinically introduced in the 1960s, they rapidly supplanted the barbiturates, largely due to their significantly lower toxicity in overdose. Members of the group show considerable variation in ABUSE POTENTIAL, and prolonged use can lead to tolerance and psychological and physical dependence.

**benzodiazepine agonist** any drug that facilitates the binding of benzodiazepines to subunits of the benzodiazepine receptor complex (see GABA<sub>A</sub> RECEPTOR).

**benzodiazepine antagonist** any agent that prevents the binding of benzodiazepines and related chemicals to the benzodiazepine receptor site on the GABA<sub>A</sub> RECEPTOR complex. Benzodiazepine antagonists in clinical use include FLUMAZENIL.

**benzothiadiazide** *n.* see THIAZIDE DIURETIC.

**benztropine** *n.* an ANTICHOLINERGIC DRUG used in the management of adverse side effects of conventional antipsychotic drugs and as an adjunct in the treatment of Parkinson's disease. U.S. trade name: **Cogentin**.

**berdache** *n.* see TWO-SPIRIT.

**bereavement** *n.* the condition of having lost a loved one to death. The bereaved person may experience emotional pain and distress (see GRIEF; TRAUMATIC GRIEF) and may or may not express this distress to others (see MOURNING; DIS-ENFRANCHISED GRIEF); individual grief and mourning re-

sponses vary. Bereavement may also signify a change in social status (e.g., from wife to widow). —**bereaved** *adj.*

**bereavement exclusion** in *DSM-IV-TR*, a statement that rules out, as symptoms of a MAJOR DEPRESSIVE EPISODE, an individual's responses to the death of a loved one (e.g., sadness) unless they last longer than 2 months after the death, markedly impair function, or are accompanied by such symptoms as SUICIDAL IDEATION. *DSM-5* has replaced this exclusion with a broader statement that characterizes an individual's normal responses to various types of significant loss (e.g., bereavement, financial ruin, disability) as nonetheless meriting careful clinical consideration of the possibility that they may co-occur with a major depressive episode. See also PERSISTENT COMPLEX BEREAVEMENT DISORDER.

**bereavement program** any of a variety of treatment services (e.g., support groups, GRIEF COUNSELING) offered to individuals coping with the death of a loved one.

**bereavement therapy** therapy or counseling provided to individuals who are experiencing loss following the death of a loved one. The therapy may address issues of separation, grieving, and carrying on with life. See also GRIEF COUNSELING.

**Bereitschaftspotential (BP)** *n.* see READINESS POTENTIAL.

**Berger rhythm** see ALPHA WAVE. [Hans **Berger** (1873–1944), German neuropsychiatrist]

**beriberi** *n.* a nutritional disease caused by thiamine (vitamin B<sub>1</sub>) deficiency and characterized by neurological symptoms and cardiovascular abnormalities. See also WERNICKE'S ENCEPHALOPATHY.

**Berkeley Growth Study** a study seeking to understand the mental abilities relevant at different ages of life, as well as their importance. A group of participants was followed beginning at 21 months of age for a period of over 50 years (from 1928 to 1982). [conducted by Nancy BAYLEY]

**Bernoulli distribution** a theoretical distribution of the number of trials required before the first success is obtained in a Bernoulli process (see BERNOULLI TRIAL). Such a distribution is defined by two values: 0 and 1. Usually a value of 0 is used to denote a failure (i.e., the item of interest does not occur) and a value of 1 is used to denote a success (i.e., the item of interest does occur). On this basis, the likelihood of a success is denoted as  $p$  and the likelihood of a failure is denoted as  $q = 1 - p$ . For example, a single toss of a coin has a Bernoulli distribution with  $p = 0.5$  (where 0 = heads and 1 = tails). A Bernoulli distribution is a special case of a BINOMIAL DISTRIBUTION. [Jacques **Bernoulli** (1654–1705), Swiss mathematician and scientist]

**Bernoulli trial** a single experiment in which the only two possible outcomes are success or failure. Usually a value of 0 is used to denote a failure (i.e., the item of interest does not occur) and a value of 1 is used to denote a success (i.e., the item does occur). A sequence of Bernoulli trials is known as a **Bernoulli process**. See also BERNOULLI DISTRIBUTION. [Jacques **Bernoulli**]

**Berry syndrome** see TREACHER COLLINS SYNDROME. [reported in 1889 by George Andreas **Berry** (1853–1929), British physician]

**berserk** **1.** *adj.* destructive or violent. **2.** *n.* one who is destructive or violent. The term is derived from an Old Norse

word literally meaning “bearshirt,” used to describe ancient Norse warriors who wore bearskins during battle and fought with great strength and fury. The term is now rather archaic.

**Bessel's correction** an adjustment used to reduce bias when calculating the VARIANCE and STANDARD DEVIATION in a sample. Specifically, it is the use of  $n - 1$  instead of  $n$  in the denominator of the computational formulas used to compute these values, where  $n$  is the number of observations in the sample. [Friedrich Wilhelm **Bessel** (1784–1846), German-born Russian astronomer and mathematician]

**BEST** acronym for BIOGRAPHICAL EVALUATION AND SCREENING OF TROOPS.

**best-first search** a problem-solving strategy in which various possible paths to a solution are evaluated in terms of the likelihood that they will prove successful and the path judged most promising is attempted first. See HEURISTIC SEARCH.

**best fit** the theoretical pattern that best accounts for the relationships among variables in a data set. For example, a REGRESSION EQUATION having the best fit to sample data is the one that minimizes differences between observed and predicted values. On a SCATTERPLOT, a line of best fit provides a visual depiction of this pattern, allowing extrapolation to values not part of the original data set. It is important to note that the best-fitting pattern is not necessarily the one that generated the observed data, as other patterns not considered may provide a superior fit.

**best frequency (BF)** see TONOTOPIC ORGANIZATION; TUNING CURVE.

**bestiality** *n.* sexual excitement or gratification obtained by a human through anal or genital intercourse or other sexual contact with a nonhuman animal. Also called **zoocrastia**; **zoocrasty**. See also SODOMY; ZOOPHILIA.

**best interests of the child** a standard used by courts to make child custody decisions, namely, that the potential for the child to lead a happy and successful life should be given greater weight than the rights of either parent or caregiver.

**beta** (symbol:  $\beta$ ) *n.* **1.** the likeliness of committing a TYPE II ERROR in research. **2.** the effect of a predictor variable on an outcome variable, such as in REGRESSION ANALYSIS or STRUCTURAL EQUATION MODELING.

**beta-adrenergic receptor** a receptor that binds NOR-EPINEPHRINE. There are two main types, designated  $\beta_1$  and  $\beta_2$ . The former mediate stimulation of heart muscle, causing a faster and stronger heartbeat. The latter are associated with relaxation of smooth muscle, causing (for example) dilation of blood vessels and widening of airways. Also called **beta adrenoceptor**; **beta adrenoreceptor**; **beta receptor**. Compare ALPHA-ADRENERGIC RECEPTOR.

**beta-adrenergic receptor kinase (barK)** a CYCLIC AMP-dependent enzyme that is responsible for inactivating BETA-ADRENERGIC RECEPTORS, thereby inhibiting the ability of these receptors to activate SECOND MESSENGERS within the cell. It is a member of a family of G PROTEIN-coupled receptor kinases that work only when receptors are occupied by an agonist.

**beta-adrenoreceptor blocking agent** see ADRENERGIC BLOCKING AGENT.

**beta alcoholism** see JELLINEK'S ALCOHOLISM SPECIES.

**bета-amyloid (β-amyloid)** *n.* a protein that accumulates—via aberrant processing of **amyloid precursor protein (APP)**—in the brains of patients with Alzheimer's disease, forming **AMYLOID PLAQUES** and contributing to neuronal impairment and eventual loss. Significant progress has been made toward developing therapies that target this processing pathway, and several promising pharmacological agents are now in advanced-stage clinical trials.

**bета blocker** see **ADRENERGIC BLOCKING AGENT**.

**bета coefficient** the multiplicative constant in a **REGRESSION ANALYSIS** that indicates the change in an outcome variable associated with the change in a predictor variable after each has been standardized to have a distribution with a mean of 0 and a **STANDARD DEVIATION** of 1. A beta coefficient controls for the effect of other predictors included in the analysis and thus allows for direct comparison of the individual variables despite differences in measurement scales (e.g., salary measured in dollars and educational degree measured in years of schooling). Also called **bета weight**.

**bета distribution** a family of **PROBABILITY DISTRIBUTIONS** whose values range from 0 to 1 and whose shape is defined by two quantities (parameters) referred to as  $\alpha$  and  $\beta$ . A beta distribution provides the likelihood of obtaining each of the possible values within the 0, 1 range.

**bета-endorphin** *n.* a neuropeptide involved in pain and hunger that produces its analgesic effects by binding to **OPIOID RECEPTORS** and disinhibiting dopamine pathways. It is one of a number of **ENDOGENOUS OPIOIDS**. See **ENDORPHIN**.

**bета error** see **TYPE II ERROR**.

**Beta examination** see **ARMY TESTS**.

**bета-glucuronidase deficiency** deficiency of the enzyme  $\beta$ -glucuronidase, which is involved in the breakdown of complex carbohydrates (see **MUCOPOLYSACCHARIDOSIS**). This deficiency is characterized by enlarged liver or spleen, dermatan sulphate in the urine, bone malformations, white-cell inclusions, and intellectual disability. The condition occurs because of mutations in the *GUSB* gene in the short arm of chromosome 7. Also called **mucopolysaccharidosis Type VII; Sly syndrome**.

**bета level** the likeliness of failing to reject the **NULL HYPOTHESIS** when it is in fact false, that is, the probability of making a **TYPE II ERROR**. The beta level for a given statistical procedure is related to the **POWER** of that procedure ( $\beta \text{ level} = 1 - \text{power}$ ).

**bета movement** see **APPARENT MOVEMENT**.

**bета receptor** see **BETA-ADRENERGIC RECEPTOR**.

**bета rhythm** see **BETA WAVE**.

**bета-secretase (β-secretase)** *n.* an enzyme that cleaves amyloid precursor protein forming **BETA-AMYLOID**, accumulation of which in brain tissue can lead to Alzheimer's disease.

**Beta test** see **ARMY TESTS**.

**bета wave** in electroencephalography, the type of **BRAIN WAVE** (frequency 13–30 Hz) associated with alert wakefulness and intense mental activity. Also called **bета rhythm**.

**bета weight** see **BETA COEFFICIENT**.

**betel nut** the seed of the areca palm (*Areca catechu*),

which is chewed as a stimulant by local populations of India and the islands of the Indian and Pacific Oceans. It contains the drug **ARECOLINE**.

**bethanechol** *n.* a **CHOLINERGIC DRUG** used to stimulate the bladder in the management of such conditions as lower **MOTOR NEURON** disease and postoperative or postpartum urinary retention. U.S. trade name: **Urecholine**.

**betrayal** *n.* any act committed by one relationship partner that violates the other's expectations of that partner (e.g., that he or she is trustworthy and has regard for the other's well-being). Although the term *betrayal* is commonly associated with infidelity, most researchers use it in a broader sense to include such acts as lying, disloyalty, revealing secrets to outsiders, intentionally harmful behavior, lack of support, or broken promises. Betrayals can evoke strong emotions in victims and perpetrators and are usually harmful to relationships, sometimes leading directly to their termination. Alternatively, reparative actions by the perpetrator, such as an apology, can foster forgiveness by the victim, which allows the relationship to continue.

**betrayal trauma theory** a conceptual model for explaining why some children are unable to access memories of prior sexual or physical abuse. According to the theory, this sort of **REPRESSION** occurs when the perpetrator of the abuse is an adult on whom the child is emotionally dependent, and it develops out of the child's need to preserve the **ATTACHMENT BOND**; hence the child is unable to access the stored memories of the abuse while the need for attachment is still strong. [first proposed in 1991 by U.S. cognitive psychologist Jennifer J. Freyd (1957– )]

**better-than-average effect** see **ABOVE-AVERAGE EFFECT**.

**between-dimension consistency** see **CROSS-DIMENSION ATTITUDE CONSISTENCY**.

**between-groups design** see **BETWEEN-SUBJECTS DESIGN**.

**between-groups variance** the variation in experimental scores that is attributable only to membership in different groups and exposure to different experimental conditions. It is reflected in the **ANALYSIS OF VARIANCE** by the degree to which the several group means differ from one another and is compared with the **WITHIN-GROUPS VARIANCE** to obtain an **F RATIO**. Also called **between-subjects variance**.

**between-subjects analysis of variance** an examination of the variance in a set of data obtained from a study in which a different group of participants is randomly assigned to each condition. In this procedure, the researcher determines how much of the variance in the obtained data is due to the influence of the variables under investigation and how much is due to random differences among the group members. For example, a researcher studying how amount of daily walking (e.g., none, 30 minutes, 60 minutes, 90 minutes) affects quality of sleep might divide participants into different groups that each walk for one of the specified lengths of time and then evaluate the results using a between-subjects analysis of variance. Compare **WITHIN-SUBJECTS ANALYSIS OF VARIANCE**.

**between-subjects design** a study in which individuals are assigned to only one treatment or experimental condition and each person provides only one score for data analysis. For example, in a between-subjects design investigating the efficacy of three different drugs for treating de-

pression, one group of depressed individuals would receive one of the drugs, a different group would receive another one of the drugs, and yet another group would receive the remaining drug. Thus, the researcher is comparing the effect each medication has on a different set of people. Also called **between-groups design**; **independent-groups design**. Compare WITHIN-SUBJECTS DESIGN.

**between-subjects factor** in an ANALYSIS OF VARIANCE, an INDEPENDENT VARIABLE with multiple levels, each of which is assigned to or experienced by a distinct group of participants. In a study examining weight loss, for example, the different amounts of daily exercise under investigation would be a between-subjects factor if each was undertaken by a different set of people. Also called **between-subjects variable**.

**between-subjects variance** see BETWEEN-GROUPS VARIANCE.

**Betz cell** a type of large PYRAMIDAL CELL found in the fifth layer of the cerebral cortex (see CORTICAL LAYERS), mainly in MOTOR CORTEX. Betz cells are associated with muscle movement and have a low threshold of stimulation. [Vladimir A. **Betz** (1834–1894), Russian anatomist]

**BEV** abbreviation for BLACK ENGLISH Vernacular.

**Bewusstseinslage** *n.* state of consciousness (German): a term used by followers of the WÜRZBURG SCHOOL to denote mental experiences or activities that cannot readily be analyzed into a chain of associations based on images or sensations. See IMAGELESS THOUGHT.

**beyondism** *n.* a secular “religion” devised by Raymond B. CATTELL on the basis of EVOLUTIONARY THEORY. Beyondism holds that evolution will lead to the advancement of humanity; therefore, anything that furthers evolution is good, and anything that hinders it is not good. If allowed to operate freely, evolutionary processes will solve many of the world’s problems through evolutionary competition, leading to the survival of some civilizations and the extinction of others. Because of this belief, and its support for voluntary EUGENICS, beyondism received much criticism as racist. See POLITICAL GENETICS.

**beyond reasonable doubt** the standard of PROOF required in a criminal trial. To convict a defendant, a jury must be convinced of the defendant’s guilt “beyond a reasonable doubt,” meaning there is no justifiable, rational cause for jury members to doubt the defendant’s guilt. This standard is considered to be equivalent to a moral certainty but is less than an absolute certainty.

**Bezold–Brücke phenomenon** the perception that bright illumination makes yellowish stimuli appear closer to yellow and bluish stimuli closer to blue. [Johann Friedrich W. von **Bezold** (1837–1907), German physicist; Ernst Wilhelm von **Brücke** (1819–1892), German physiologist]

**BF** abbreviation for best frequency. See TONOTOPIC ORGANIZATION; TUNING CURVE.

**B fiber** a myelinated nerve fiber (axon) of the autonomic nervous system. B fibers are approximately 2 mm or less in diameter and transmit impulses to the SYMPATHETIC CHAIN. See also A FIBER; C FIBER.

**BFOQ** abbreviation for BONA FIDE OCCUPATIONAL QUALIFICATION.

**bhang** *n.* the mildest preparation of CANNABIS, consisting of the whole *Cannabis sativa* plant, dried and powdered.

**BHS** abbreviation for BECK HOPELESSNESS SCALE.

**bi- (bin-)** *prefix* two, twice, or double.

**BIA** abbreviation for BODY IMAGE ASSESSMENT.

**bias** *n.* **1.** partiality; an inclination or predisposition for or against something. See also PREJUDICE. **2.** any tendency or preference, such as a RESPONSE BIAS or TEST BIAS. **3.** systematic error arising during SAMPLING, data collection, or data analysis. See BIASED ESTIMATOR; BIASED SAMPLING. **4.** any deviation of a measured or calculated quantity from its actual (true) value, such that the measurement or calculation is unrepresentative of the item of interest. —**biased** *adj.*

**bias blind spot** the tendency of people to see themselves as less susceptible to nonconscious predispositions and cognitive influences than others. For example, people often consider their own political views to be objective and purely fact based, whereas they believe those who hold opposing political views are influenced by prejudice and party opinion. This bias stems from the fact that a person generally relies on INTROSPECTION when assessing his or her own biases but relies on overt behavior when assessing bias in others. See also OBJECTIVITY ILLUSION. [introduced in 2002 by U.S. psychologists Emily Pronin, Daniel Y. Lin, and Lee Ross]

**biased elaboration** the tendency to generate a particular valence of evaluative responses preferentially when elaborating attitude-relevant information. See also BIASING FACTOR; ELABORATION; OBJECTIVE ELABORATION.

**biased estimator** a value obtained from sample data that consistently under- or overestimates the true quantity in the larger population of interest. In other words, a biased estimator is one whose value on average differs from the value of the PARAMETER it purports to represent. Also called **biased statistic**. Compare UNBIASED ESTIMATOR.

**biased sampling** selecting individuals or other study units from a population in such a manner that the resulting sample is not representative of the population. Compare UNBIASED SAMPLING. See also SAMPLING BIAS.

**biased scanning** a hypothetical process in which people alter or maintain a particular SELF-CONCEPT by searching the contents of their memory in a selective manner, focusing on memories that fit a predetermined impression. The theory assumes that people have a wide range of implicit memories, enabling them to support different views of the self by selectively remembering certain events.

**biased statistic** see BIASED ESTIMATOR.

**biasing factor** a variable that serves to bias the valence of ELABORATION of attitude-relevant information. See also BIASED ELABORATION; MULTIPLE ROLES IN PERSUASION.

**biastophilia** *n.* a PARAPHILLIA involving sexual arousal and excitement based on surprising or attacking a stranger sexually.

**bias–variance tradeoff** the situation in which increasing the complexity of a model to better account for the observed relationships among a set of variables reduces the precision of any estimated values subsequently derived from that model. That is, the model becomes so specific to the particular sample from which it was derived that it no longer is an accurate representation of the larger population of interest. Researchers therefore tend to seek a balance, opting for either greater intricacy or greater certainty as circumstances warrant.



**bibliotherapy** *n.* a form of therapy that uses structured reading material. Bibliotherapy is often used as an adjunct to psychotherapy for such purposes as reinforcing specific in-session concepts or strategies or enhancing lifestyle changes. Carefully chosen readings are also used by some individuals as SELF-HELP tools to foster personal growth and development, for example, by facilitating communication and open discussion of problems or enhancing self-concept.

**BIC** abbreviation for BAYESIAN INFORMATION CRITERION.

**bicalutamide** *n.* see ANTIANDROGEN.

**bicameralism** *n.* a highly controversial theory of primitive human mentality (posited to predate the development of consciousness) in which cognitive functions are divided between one hemisphere of the brain that “speaks” or “orders,” specifically through auditory hallucination, and another hemisphere that “listens” or “obeys.” The concept, proposed by U.S. psychologist Julian Jaynes (1920–1997) in his 1976 book *The Origins of Consciousness in the Breakdown of the Bicameral Mind*, has not received significant attention in neuropsychological research, although analogies have been drawn to neurological models describing the differing functions of the right and left hemispheres of the brain. The evolutionary aspect of the hypothesis contradicts current evidence about the origins of brain structures for consciousness and language.

**bicuculline** *n.* an alkaloid derived from the plant *Dicentra cucullaria* that acts as a competitive GABA ANTAGONIST at GABA<sub>A</sub> RECEPTORS and has strong convulsant effects. It has no modern clinical applications but may be used experimentally in laboratory animals for various research purposes.

**bidialectism** *n.* the regular use of two or more DIALECTS of a language by a person or within a SPEECH COMMUNITY. Also called **bidialectalism**. See also CODE SWITCHING; DIGLOSSIA. —**bidialectal** *adj.*

**bidirectionality of structure and function** the reciprocal interaction during development of some physical characteristic of an organism (e.g., brain cells) and the function emanating from that structure (e.g., the electrical firing of those cells). Such bidirectionality implies that development is not governed simply by a reading-out of the genetic code but is a dynamic process involving interaction at all levels of organization, from the genetic through the cultural.

**Bidwell's ghost** a second visual AFTERIMAGE that appears in a hue complementary to the stimulus. Also called **Purkinje afterimage**. [Shelford Bidwell (1848–1909), British physicist]

**Bielschowsky's disease** a condition marked by temporary loss of the ability to move the eyes in a vertical direction, up or down, in a synchronized manner. [Alfred Bielschowsky (1871–1940), German ophthalmologist]

**Biemond syndrome** a disorder that combines intellectual disability, obesity, HYPOGONADISM, abnormalities in the iris (a hole, split, or cleft), and excess fingers or toes. [A. Biemond, 20th-century French physician]

**bigamy** *n.* the crime of marrying someone when already married to someone else. In cultures that permit individuals to have more than one spouse, this practice should be referred to as POLYGAMY and not bigamy. Compare MONOGAMY. —**bigamist** *n.* —**bigamous** *adj.*

**Big Brothers Big Sisters of America** a volunteer association in which individuals act as mentors and positive role models to children typically from single-parent families. The Big Brother and Big Sister programs were created separately, and the two organizations merged in 1977.

**Big Five personality model** a model of the primary dimensions of individual differences in personality. The dimensions are usually labeled EXTRAVERSION, NEUROTICISM, AGREEABLENESS, CONSCIENTIOUSNESS, and OPENNESS TO EXPERIENCE, though the labels vary somewhat among researchers. See also FIVE-FACTOR PERSONALITY MODEL. [described by (among others) U.S. psychologists Lewis R. Goldberg (1932– ) and Gerard T. Saucier]

**big lie** a PROPAGANDA device in which a false statement of extreme magnitude is constantly repeated to persuade the public. The assumption is that a big lie is less likely to be challenged than a lesser one because people will assume that evidence exists to support a statement of such magnitude. Josef Goebbels, the propaganda minister in Nazi Germany, repeatedly used this technique when he charged the Nazis' enemies with heinous crimes.

**bigorexia** *n.* see MUSCLE DYSMORPHIA.

**bigram** *n.* any two-letter combination. In PSYCHOLINGUISTICS research, the term typically refers to a within-word consecutive character sequence (e.g., *paper* contains the bigrams *pa*, *ap*, *pe*, and *er*), whereas in learning and memory research, it generally refers to a freestanding nonword (e.g., TL, KE).

**Big Sister program** see BIG BROTHERS BIG SISTERS OF AMERICA.

**BIID** abbreviation for BODY INTEGRITY IDENTITY DISORDER.

**bilabial** **1.** *adj.* pertaining to the two lips. **2.** *adj.* denoting a speech sound made with both lips, which stop or modify the airstream, for example, [b], [p], [m], or [w]. **3.** *n.* a bilabial speech sound. See LABIAL.

**bilateral** *adj.* denoting or relating to both sides of the body or an organ. For example, **bilateral symmetry** is the symmetrical arrangement of an organism's body such that the right and left halves are approximately mirror images of one another; **bilateral transfer** is the TRANSFER OF TRAINING or patterns of performance for a skill from one side of the body, where the skill (e.g., handwriting) was originally learned and primarily used, to the other side of the body. —**bilaterally** *adv.*

**bilateral descent** in anthropology, a system of descent or inheritance in which both the male and the female lines of descent are recognized. Also called **bilineal descent**. Compare UNILATERAL DESCENT. See also DESCENT GROUP; MATRIARCHY; PATRIARCHY.

**bilateral lesion** a lesion that involves both sides of an organ, especially both cerebral hemispheres, which can arise directly through injury or disease or secondarily through such mechanisms as EDEMA.

**Bildungsroman** *n.* a type of novel that describes the formation of the leading character's self in the course of development (usually through a series of stages) from childhood to adulthood. The genre was established in Germany by Johann Wolfgang von Goethe's *Wilhelm Meister's Apprenticeship* (1795–1796) and has remained central to the German literary tradition. It was therefore an essential part of the intellectual climate in which the early psychoanalysts were educated and did their work. It might be ar-

gued that the classic “stage theories,” such as Sigmund FREUD’s psychosexual stages, Erik ERIKSON’s psychosocial stages, Carl JUNG’s process of individuation, and Jean PIAGET’s stages of cognitive development, grew out of this tradition. [German, literally: “education novel”; coined by German philosopher Wilhelm Dilthey (1833–1911) in a biography of German philosopher Friedrich Schleiermacher (1768–1834)]

**bilineal descent** see BILATERAL DESCENT.

**bilingual education** instruction in two languages, typically in one’s native language and in the dominant language of the country in which one is educated. In **transitional bilingual education**, as students gain fluency, they shift to instruction solely in their nonnative language, usually within 2 to 3 years. In **TOTAL IMMERSION** bilingual programs, the emphasis is solely on second-language acquisition for both native and nonnative speakers. For example, in the United States, immersion programs are most often conducted in either French or Spanish and may include **ENGLISH AS A SECOND LANGUAGE** learners along with native English-speaking students.

**bilingualism** *n.* the regular use of two or more languages by a person or within a **SPEECH COMMUNITY**. See **ADDITIVE BILINGUALISM**; **BILITERACY**; **EARLY BILINGUALISM**; **ELITE BILINGUALISM**; **FOLK BILINGUALISM**. —**bilingual** *adj.*

**bilirubin** *n.* an orange-yellow bile pigment produced from breakdown products of the hemoglobin of red blood cells. Bilirubin is excreted in bile, feces, and urine. An excess of bilirubin is often a sign of a liver disorder (or, in babies, liver immaturity or incompatibility with the mother’s blood group) and may cause deposits of yellowish pigments in the skin and other tissues, a condition known as **JAUNDICE**. See also **HEPATITIS**.

**bilirubin encephalopathy** a degenerative disease of the brain caused by deposition of the bile pigment **BILIRUBIN** in the basal ganglia and brainstem nuclei. The condition results from disorders in producing or breaking down bilirubin in the liver. This may be seen in newborns who are unable to metabolize bilirubin adequately.

**bilis** *n.* a **CULTURE-BOUND SYNDROME** found among Latino groups, who attribute it to extremely strong anger or rage. Symptoms include abrupt nervous tension, headache, screaming, stomach disturbances, vomiting, loss of weight, tremors, chronic tiredness, and—in extreme cases—loss of consciousness or death. The extreme anger is said to disturb the center of balance of hot and cold in the body, which upsets the material and spiritual aspects of the person. Also called **colera**; **muina**.

**biliteracy** *n.* the ability to read and write in two or more languages. See **BILINGUALISM**. —**biliterate** *adj.*

**bill of rights** in health care, a document stating the entitlements a patient has with respect to providers, institutions, and **THIRD-PARTY PAYERS**. See **PATIENTS’ RIGHTS**.

**bimanual coordination** coordination of the movements of the two hands.

**bimanual interference** problems encountered when the two hands must each perform different movements or the same movement with different timing (e.g., in piano playing).

**bimodal distribution** a set of scores with two peaks or **MODES** around which values tend to cluster, such that the frequencies at first increase and then decrease around each

peak. For example, when graphing the heights of a sample of adolescents, one would obtain a bimodal distribution if most people were either 5’7” or 5’9” tall. See also **MULTIMODAL DISTRIBUTION**; **UNIMODAL DISTRIBUTION**.

**bin-** *prefix* see **BI-**.

**binary choice** in decision making, a choice in which there are only two alternatives (e.g., yes or no, do or don’t do).

**binary feature** in linguistics, a feature of the phonemic system of a language that has two mutually exclusive aspects, such as voiced–unvoiced (in English) or aspirated–unaspirated (in Hindi). Such features have a critical contrastive function, working rather like an on–off switch to distinguish one **PHONEME** from another; in English, for instance, the otherwise very similar sounds [b] and [p] are recognized as distinct phonemes because the former is **VOICED** and the latter **UNVOICED**. Binary opposition of this kind is a key concept in the structuralist interpretation of language and in the wider structuralist movement generally (see **STRUCTURALISM**). See also **MINIMAL PAIR**. [first described by Russian linguist Roman Jakobson (1896–1982)]

**binary hue** a hue that appears to be a mixture of two **unique hues**. Orange is a binary hue composed of red and yellow, which are considered unique because they are not produced by color mixing.

**binary system** a structure or organization composed of two elements or two kinds of elements. In computer science, it is a logical structure composed of two values, commonly called 0 and 1, based on the “off” and “on” modes of electrical circuits and devices. The principle of binary contrast is also of great importance in **STRUCTURALISM**, particularly in structural linguistics. See **BINARY FEATURE**; **MINIMAL PAIR**.

**binary trial** a single experiment in which there are only two possible outcomes. For example, consider a behavioral researcher observing aggression in a group of schoolchildren during recess. If he or she makes a record every 1 minute, then each such period may be considered a binary trial, with *aggression present* or *aggression absent* as its only two possible outcomes.

**binary variable** see **DICHOTOMOUS VARIABLE**.

**binasal hemianopia** the loss of vision in both the right half of the left visual field and the left half of the right visual field. It is caused by injury (compression) of the **OPTIC CHIASM**. See **HEMIANOPIA**.

**binaural** *adj.* pertaining to or perceived by both ears. Compare **MONAURAL**.

**binaural beat** a periodic fluctuation in apparent position or in loudness when two tones differing slightly in frequency are presented to each ear separately but simultaneously. Binaural beats are not present in the stimulus but result from the **BINAURAL INTERACTION** between the tones that occurs within the auditory system.

**binaural cue** any difference in the sound arriving at the two ears from a given sound source (**interaural difference**) that acts as a cue to permit **AUDITORY LOCALIZATION**. The common cues are interaural level differences (ILD), interaural time differences (ITD), and (closely related to ITD) interaural phase differences (IPD). Also called **binaural difference**.

**binaural fusion** see **FUSION**.

**binaural hearing** see BINAURAL.

**binaural interaction** the interaction in the nervous system of signals from the two ears. It is especially important for localizing auditory stimuli.

**binaural masking level difference** see MASKING LEVEL DIFFERENCE.

**binaural summation effect** see SUMMATION EFFECT.

**binding affinity** the tendency of a particular LIGAND (e.g., neurotransmitter or drug) to bind to a particular receptor, measured by the percentage of receptors occupied by the ligand.

**binding hypothesis** a theory that offers a solution to the BINDING PROBLEM, proposing that the neural mechanism responsible for drawing together disparate information (e.g., different features of an object) from separate cortical areas and “binding” it into unified percepts is temporal synchrony: that is, the simultaneous firing of action potentials from individual neurons—each coding different properties—is the means by which they are organized into a single representation. Many suggest that feature binding is critical for conscious object perception.

**binding problem** the theoretical issue of how the brain perceives and represents different features, or conjunctions of properties, as one object or event. This is problematic because different attributes of a stimulus (e.g., hue, form, spatial location, motion) are analyzed by different areas of the cerebral cortex and yet are experienced in consciousness as a unity; the binding problem is relevant in all areas of knowledge representation, including such complex cognitive representations as THEORY OF MIND.

**Binet–Simon Scale** see STANFORD–BINET INTELLIGENCE SCALE.

**binge drinking** **1.** a single occasion of intense, extremely heavy drinking that results in intoxication. **2.** a pattern of alcohol consumption characterized by the setting aside of repeated periods of time for intense, extremely heavy drinking, with or without sobriety in between. **3.** for most men, ingesting five or more alcoholic drinks within 2 hours; for most women, four or more.

**binge eating** consuming abnormally large quantities of food in a discrete time period with a concurrent sense of loss of control. Recurrent binge eating is associated with numerous adverse consequences, such as increased risk of obesity and its medical sequelae, as well as depression and other mental health problems. When the behavior is chronic and pervasive, it is diagnosed as a binge-eating disorder. See also BULIMIA NERVOSA.

**binge-eating disorder** a disorder marked by recurring discrete periods of uncontrolled consumption of abnormally large quantities of food and by distress associated with this behavior. There is an absence of inappropriate compensatory behaviors (e.g., vomiting, laxative misuse, excessive exercise, fasting). Compare BULIMIA NERVOSA. See also EATING DISORDER.

**binocular** *adj.* relating to the two eyes. Compare MONOCULAR.

**binocular cell** a cortical cell that responds to a stimulus presented to either the left or the right eye. **Monocular cells**, in contrast, require stimulation through a specific eye to generate a response.

**binocular cue** see DEPTH CUE.

**binocular deprivation** the deprivation of light to both eyes, as by sealing the eyelids. Compare MONOCULAR DEPRIVATION.

**binocular disparity** the slight difference between the right and left retinal images. When both eyes focus on an object, the different position of the eyes produces a disparity of visual angle, and a slightly different image is received by each retina. The two images are automatically compared and, if sufficiently similar, are fused, providing an important cue to depth perception. Also called **retinal disparity**.

**binocular flicker** an experimental paradigm in which each eye is stimulated separately with an intermittent light. The phase relationships of the illumination of each eye can be varied to investigate binocular interactions. [devised by Charles Scott SHERRINGTON]

**binocular fusion** see FUSION.

**binocular parallax** the differences in the two retinal images due to separation of the eyes.

**binocular perception** any visual experience enabled by stimulation through both eyes.

**binocular rivalry** the failure of the eyes to fuse stimuli (see FUSION). For example, if horizontal bars are viewed through the left eye and vertical bars through the right eye, the perception is a patchy and fluctuating alternation of the two patterns, rather than a superimposition of the patterns to form a stable checkerboard.

**binocular summation** the phenomenon of increased sensation or increased magnitude of perceptual response that results from stimulation through both eyes, as compared to stimulation through one eye.

**binocular suppression** the ability of stimulation through one eye to inhibit the response or sensitivity to stimulation through the other eye. See BINOCULAR RIVALRY.

**binocular vision** the normal coordinated function of the eyes that permits viewing of the surroundings in three dimensions. See STEREOPSIS.

**binomial distribution** the PROBABILITY DISTRIBUTION for each possible sequence of outcomes on a variable that has only two possible outcomes, with the likelihood of obtaining each outcome remaining constant. For example, a binomial distribution of the results of trying to predict the outcomes of 10 coin tosses would display the probability of observing each possible set of results, including one success and nine failures, two successes and eight failures, and so forth. This distribution is often denoted by  $b(n, \theta)$ .

**binomial nomenclature** see BIOLOGICAL TAXONOMY.

**binomial probability** within a series of independent observations, the probability of observing a particular combination of outcomes for a variable that can assume only one of two values (e.g., 0 or 1; pass or fail) where there is a fixed likelihood of each value occurring. For example, consider a group of 10 individuals selected from a population of persons ages 40 to 45, with each selection unrelated to any other selection. A binomial probability could be calculated to determine the likelihood that seven of those individuals are married while three are not, given known information on the probability of persons of that age being married.

**binomial test** a statistical procedure to determine whether an observed data pattern for a variable that can

have only one of two values (often represented as 0 and 1) matches a theoretical or expected pattern. In other words, it tests whether the categorical proportions in the obtained data differ significantly from their proportions in the population from which they are believed to derive. See also BINOMIAL PROBABILITY.

**binomial variable** a variable for which there are only two outcomes, typically designated 0 and 1, with each possible outcome having a specified likelihood of being observed. Flipping a coin is an example, as it may land on either heads or tails. See also BINOMIAL DISTRIBUTION.

**Binswanger's disease** a progressive VASCULAR DEMENTIA characterized by DEMYELINATION and multiple INFARCTIONS of subcortical white matter associated with hypertension and subsequent arteriosclerosis. Symptoms include loss of cognitive functioning, memory impairment, and changes in mood and behavior. Also called **subcortical arteriosclerotic encephalopathy**. [Otto Ludvig Binswanger (1852–1929), German neurologist]

**bio-** combining form life or living.

**bioacoustics** *n.* the study of acoustic communication and related behavior of nonhuman animals. This can involve study of the mechanisms of sound production and perception, the physical structure of animal signals, the alteration of animal sounds as they pass through different environments, and the influence of animal sounds on the behavior of other animals.

**bioavailability** *n.* the quantity of an administered drug that is available for distribution within the body to the target organ or site after absorption into the bloodstream.

**biochemical approach** **1.** the study of behavioral patterns, including mental disorders, from the standpoint of chemical changes. An example of this approach is the view that a mental disorder can be explained in terms of an excess or deficiency of certain substances in the nervous system, such as SEROTONIN. **2.** the use of psychotropic drugs in the treatment of mental disorders. See PSYCHOPHARMACOTHERAPY.

**biochemical defect** any of numerous chemical imbalances or aberrations in the brain that may be associated with neurological or psychiatric disorder. Such disorders may be related to the production of specific NEUROTRANSMITTERS or the availability of other biochemical substances necessary for brain function.

**biochemical marker** a variation in the chemical activity of an organism that accompanies a disorder, irrespective of whether it directly causes the disorder; an example is demonstrated in the DEXAMETHASONE SUPPRESSION TEST. See also BIOLOGICAL MARKER; CLINICAL MARKER.

**biochemistry** *n.* the study of the chemical substances and processes of living organisms. —**biochemical** *adj.*

**biocybernetics** *n.* the study of communication and self-regulatory activities within biological organisms; it represents an attempt to understand the functioning of living bodies in terms derived from information science. —**biocybernetic** or **biocybernetical** *adj.*

**biodata** *pl. n.* see BIOGRAPHICAL DATA.

**biodynamics** *n.* the study of dynamic processes within living organisms. See DYNAMIC.

**bioecological model** see ECOLOGICAL SYSTEMS THEORY.

**bioecological theory of intelligence** a theory pos-

tulating that intelligence develops as an interaction between biological dispositions and the environment in which these biological dispositions develop. [proposed by U.S. psychologist Stephen J. Ceci (1950– )]

**bioelectric potential** the electric potential of nerve, muscle, and other living tissue.

**bioenergetics** *n.* a form of alternative psychotherapy that combines work with the body and the mind in treating emotional problems. Bioenergetics proposes that body and mind are functionally identical: What happens in the mind reflects what is happening in the body, and vice versa. It uses exercises and postural changes in an attempt to relieve chronic muscular tensions and rigidity attributed to emotional stress and unresolved emotional conflicts. The approach was developed by U.S. physician Alexander Lowen (1910–2008) and is based on the work of Austrian psychoanalyst Wilhelm Reich (1897–1957).

**bioengineering** *n.* the application of engineering principles and science to living organisms and biological processes, particularly in the design, testing, and manufacture of devices that can substitute for impaired body parts or functions. —**bioengineer** *n.*

**bioequivalence** *n.* a measure comparing the relative BIOAVAILABILITY of two forms or preparations of a drug. In bioequivalent drug preparations, the same proportion of unchanged, active drug reaches the systemic circulation. Bioequivalence may be a clinical issue when comparing two preparations of a drug (i.e., immediate-release vs. delayed-release) or when comparing trademarked drugs and their generic counterparts. —**bioequivalent** *adj.*

**bioethics** *n.* the study of ethics and values relevant to the conduct of clinical practice and research in medicine and the life sciences. —**bioethical** *adj.*

**biofeedback** *n.* **1.** information about bodily processes and systems provided by an organism's receptors to enable it to maintain a physiologically desirable internal environment and make adjustments as necessary. **2.** the use of an external monitoring device (e.g., electrocardiograph) to provide an individual with information regarding his or her physiological state. When used to help a person obtain voluntary control over autonomic body functions, such as heart rate or blood pressure, the technique is called **biofeedback training**. It may be applied therapeutically to treat various conditions, including chronic pain and hypertension. See also NEUROFEEDBACK.

**biogenesis** *n.* the origin of living things from other living things. **Biogenetics** is the scientific study of the principles and processes governing the production of living organisms from other living organisms, including the mechanisms of heredity. —**biogenetic** *adj.*

**biogenic** *adj.* **1.** produced by living organisms or biological processes. **2.** necessary for the maintenance of life.

**biogenic amine** any of a group of AMINES that affect bodily processes and nervous system functioning. Biogenic amines are divided into subgroups (e.g., CATECHOLAMINES, INDOLEAMINES) and include the neurotransmitters dopamine, epinephrine, histamine, norepinephrine, and serotonin.

**biogenic amine hypothesis** any of a variety of hypotheses, such as the CATECHOLAMINE HYPOTHESIS and DOPAMINE HYPOTHESIS, that consider abnormalities in the physiology and metabolism of biogenic amines essential to the etiology of certain mental disorders.

**bogram** *n.* a pattern of possible events involved in learning a BIOFEEDBACK experience. The biogram may begin as a conscious memory device but through repeated trials eventually becomes subconscious in a manner similar to other learning experiences acquired through repeated trials.

**biographical data** **1.** information about a patient's history and behavioral patterns, gathered by a therapist or medical professional primarily from the patient but sometimes from others who know or are related to him or her. **2.** information on job candidates for use in personnel selection. The data are usually obtained from application forms or special questionnaires (**biographical inventories**) and include such items as age, sex, education, work experience, and interests. Also called **biodata**.

**Biographical Evaluation and Screening of Troops (BEST)** a program used for the selection and classification of military personnel. Formerly called the **Air Force Medical Evaluation Test (AFMET)**, it is used to identify individuals who are unlikely to complete the Air Force basic training or who might find it difficult to function in a military system.

**biographical inventory** see BIOGRAPHICAL DATA.

**biographical method** the systematic use of personal histories—gathered through such means as interviews, focus groups, observations, and individual reflections and other narratives—in psychological research and analysis. This method emphasizes the placement of the individual within the context of social connections, historical events, and life experiences.

**bioinformatics** *n.* the use of INFORMATICS in medicine and other life sciences, as in the analysis of public health, genomics, and biomedical research data. Also called **biomedical informatics**.

**bioinformational theory** a general theory of emotional-motivational organization, integrating cognitive and psychophysiological levels of analysis. It is concerned with how emotions are elicited and displayed and with how they interact; specifically, information about emotions is contained in associative memory networks that include action information (motor programs) and connections to subcortical motivation circuits. Emotions are viewed as context-specific action or response dispositions activated by input that modifies concepts in the emotion network. The model, originally forwarded in the 1970s as a theory of emotional imagery, was derived from research on fear and anxiety but has since evolved and acquired diverse applications across a variety of behavioral and emotional phenomena.

**biological age** age as determined by changes in bodily structure and performance that are normative at specific ages. Compare CHRONOLOGICAL AGE.

**biological aging** see AGING; PRIMARY AGING; SENESCENCE.

**biological clock** the mechanism within an organism that controls the periodicity of BIOLOGICAL RHYTHMS, including ACTIVITY RHYTHMS, even in the absence of any external cues. For example, a bird housed in constant light will continue to show patterns of activity and rest with approximately 24-hour rhythms due to the action of the biological clock. A biological clock in mammals is located in the SUPRACHIASMATIC NUCLEUS of the hypothalamus. Molecular mechanisms of the CIRCADIAN RHYTHM are the same in insects and mammals. Also called **internal clock**.

**biological determinism** the concept that psychological and behavioral characteristics are entirely the result of constitutional and biological factors. Environmental conditions serve only as occasions for the manifestation of such characteristics. Compare ENVIRONMENTAL DETERMINISM. See DETERMINISM; GENETIC DETERMINISM; NATURE-NURTURE.

**biological drive** an innate motivational state produced by depletion or deprivation of a needed substance (e.g., water, oxygen) in order to impel behavior that will restore physiological equilibrium. See also DRIVE.

**biological factor** any physical, chemical, genetic, or neurological condition associated with psychological disturbances.

**biological fallacy** **1.** the questionable assumption that all human phenomena, including rationality, culture, and ethics, can be explained with reference to strictly biological processes. In this sense, the biological fallacy is one of naturalistic REDUCTIONISM. **2.** in the controversial view of some ecological theorists, the “fallacy” of equating life with the life of individual organisms. The term implies that the vital force referred to as “life” is better understood as inherent in, or as a quality of, the totality of the ecosystem.

**biological family** a person's blood relations as opposed to relations acquired through marriage, adoption, or fostering. See CONSANGUINITY.

**biological intelligence** a level of mental ability of presumed biological origins required primarily for cognitive activity. The term was introduced to differentiate forebrain-functioning ability from traditional concepts of intelligence. Biological intelligence is measured with a battery of tests that also indicate evidence of brain injury. [defined by U.S. psychologist Ward C. Halstead (1908–1969)]

**biological life events** age-related biological changes, such as PUBERTY or menopause (see CLIMACTERIC).

**biologically primary ability** an ability, such as language acquisition, that has been selected for in evolution and is acquired universally. Children typically are highly motivated to perform tasks involving these abilities. Compare BIOLOGICALLY SECONDARY ABILITY. [postulated by U.S. psychologist David C. Geary (1957– )]

**biologically secondary ability** an ability, such as reading, that builds upon a BIOLOGICALLY PRIMARY ABILITY but is principally a cultural invention and often requires repetition and external motivation for its mastery. [postulated by U.S. psychologist David C. Geary (1957– )]

**biological marker** a variation in the physiological processes of an organism that accompanies a disorder, irrespective of whether it directly causes the disorder. Also called **biomarker**. See also BIOCHEMICAL MARKER; CLINICAL MARKER.

**biological measures** assessments or other markers of processes or outcomes that are drawn from bodily activity or other natural biological systems or events. Such measures include assessments of cardiopulmonary, endocrine, nervous-system, and immune-system activity.

**biological motion** motion performed by a living organism. See LOCOMOTION; TAXIS.

**biological perspective** an approach to abnormal psychology that emphasizes physiologically based causative factors, such as the AMYLOID PLAQUES in Alzheimer's disease, and consequently tends to focus primarily upon BIOLOGICAL THERAPIES.

**biological psychology** the science that deals with the biological basis of behavior, thoughts, and emotions and the reciprocal relations between biological and psychological processes. It also addresses topics such as behavior-changing brain lesions, chemical responses in the brain, and brain-related genetics. It includes such fields as BEHAVIORAL NEUROSCIENCE, CLINICAL NEUROSCIENCE, COGNITIVE NEUROSCIENCE, BEHAVIORAL ENDOCRINOLOGY, and PSYCHONEUROIMMUNOLOGY. Also called **biopsychology**; **physiological psychology**; **psychobiology**.

**biological rhythm** any periodic variation in a living organism's physiological or psychological function, such as energy level, sexual desire, or menstruation. Such rhythms can be linked to cyclical changes in environmental cues, such as daylength or passing of the seasons, and tend to be daily (see CIRCADIAN RHYTHM) or annual (see CIRCANNAL RHYTHM). They also can vary with individuals and with the period of the individual's life. Also called **biorhythm**; **endogenous rhythm**; **internal rhythm**; **life rhythm**. See also INFRADIAN RHYTHM; ULTRADIAN RHYTHM.

**biological stress** a condition that imposes severe demands on the physical and psychological defenses of the organism. Examples include acute or chronic disease, a congenital or acquired disability or defect, exposure to extreme heat or cold, malnutrition or starvation, and exposure to some drugs (e.g., hallucinogens) or to toxic substances. See also STRESS.

**biological symbiosis** see SYMBIOSIS.

**biological taxonomy** the science of the classification of organisms. Traditional classifications group organisms into a hierarchical system of ranks, in ascending order: species, genus, family, order, class, phylum, and kingdom (see also DOMAIN). Species are named using **binomial nomenclature**, devised by Swedish biologist Carolus Linnaeus (1707–1778) in 1758: Each species is given two names, the first for the genus to which it belongs and the second identifying the species itself; thus, human beings are classified as *Homo sapiens*. Also called **systematics**. See also CLADISTICS.

**biological theory of aging** any of various explanations of aging based on either programmed biological changes (genetic SENESENCE) or unpredicted changes (DNA damage).

**biological therapy** any form of treatment for mental disorders that attempts to alter physiological functioning, including drug therapies, ELECTROCONVULSIVE THERAPY, and PSYCHOSURGERY. Also called **biomedical therapy**.

**biological transducing system** a biological system that converts energy or information from one form to another. See TRANSDUCTION.

**biological warfare** the use of agents such as bacteria, viruses, and toxins to incapacitate or destroy humans, nonhuman animals, or crops in war.

**biologism** *n.* a predilection to make use of BIOLOGICAL DETERMINISM and concepts from biology to explain behavior and psychological phenomena and to avoid psychological concepts and principles for such explanation. See also REDUCTIONISM.

**biology** *n.* the study of living organisms and life processes. —**biological** *adj.* —**biologist** *n.*

**biomarker** *n.* see BIOLOGICAL MARKER.

**biomechanics** *n.* the application of the principles of me-

chanics to the study of the structure and function of biological systems, which includes the study of the physical stresses and strains on organisms while at rest and in motion. The discipline includes **occupational biomechanics**, which examines the physical interaction of workers with their tools, machines, and materials so as to maximize performance while minimizing the risk of musculoskeletal disorders. —**biomechanical** *adj.*

**biomedical engineering** the branch of engineering that specializes in research and development of equipment for medical treatment, rehabilitation, and special needs. Examples of applications include devices to monitor the physiological condition of astronauts in space, the design and creation of artificial limbs and organs, and the development of ULTRASOUND devices. See also BIOENGINEERING.

**biomedical informatics** see BIOINFORMATICS.

**biomedical therapy** see BIOLOGICAL THERAPY.

**biometrics (biometry)** *n.* see BIostatISTICS.

**bionics** *n.* the study of biological systems to learn how aspects of their perceptual and problem-solving behavior might be built into an electronic system, such as a computer. [bi(ology) + (electr)onics]

**biophilia** *n.* a fundamental human attraction to and need for contact with the natural world. This idea was introduced in 1964 by Erich FROMM, who believed that subconscious seeking of connections with nature represents a positive psychological orientation toward life that benefits individuals' functioning and overall well-being. In 1984, U.S. biologist Edward O. Wilson (1929– ) elaborated on the concept to develop the **biophilia hypothesis**, stating that humans have genetically based, evolutionarily determined attractions to specific landscapes and natural elements that create a propensity to affiliate with other living organisms. The hypothesis also holds that this enmeshment with nature plays an essential role in human cognitive, social, and emotional processes. Although Fromm contrasted biophilia with NECROPHILIA, now it generally is contrasted with BIOPHOBIA.

**biophobia** *n.* a human fear of certain species (e.g., snakes, spiders) and general aversion to nature that creates an urge to affiliate with technology and other human artifacts, interests, and constructions rather than with animals, landscapes, and other elements of the natural world. Such fear is seen in many populations throughout the world, a pervasiveness that U.S. biologist Edward O. Wilson (1929– ) and others consider indicative of its innateness. U.S. ecologist David W. Orr, however, emphasizes that biophobia is culturally acquired, a product of modern living that distances people from the natural world to such a degree that they become indifferent to other organisms and antagonistic toward the environment. Compare BIOPHILIA.

**biophysical system** **1.** any biological system that is described or studied in terms of its physical aspects, based on the application of physical laws and the techniques of physics. **2.** the hormonal and genital components of the human sexual response. [defined by U.S. sex researchers William H. Masters (1915–2001) and Virginia E. Johnson (1925–2013)]

**biophysics** *n.* the interface of biology and physics, involving the study of biological structures and processes (e.g., vision, hearing) according to the principles and methods of physics.

**biopsy** *n.* the surgical removal and microscopic study of a

small amount of tissue from an organ or body part believed to be diseased or otherwise abnormal. The biopsy specimen is examined for signs of malignancy or other abnormalities that would help determine the proper diagnosis and course of therapy.

**biopsychology** *n.* see BIOLOGICAL PSYCHOLOGY.

**biopsychosocial** *adj.* denoting a systematic integration of biological, psychological, and social approaches to the study of mental health and specific mental disorders. [coined by U.S. psychiatrist George L. Engel (1913–1999)]

**biorhythm** *n.* **1.** a synonym of BIOLOGICAL RHYTHM. **2.** according to pseudoscientific belief, a regular biological cycle that can be charted like a sine wave and with which every individual is said to be programmed at birth. Usually this term is used to refer to any one of three basic cycles—physical, emotional, and intellectual—although other cycles (e.g., aesthetic, spiritual) and combinations of cycles have been proposed. It is maintained that these cycles continue unaltered until death and that good and bad days for various activities can be calculated accordingly. As with astrology, predictions made on this basis do not have a significantly different success rate from those made on a basis of pure chance.

**biosocial** *adj.* pertaining to the interplay or mingling of biological and social factors, as with human behavior that is influenced simultaneously by complex neurophysiological processes and social interactions.

**biosocial theory** any approach that explains personality or human behavior in terms of biological predispositions as influenced by social or environmental factors.

**biosphere** *n.* collectively, all parts of the earth and its atmosphere in which living organisms exist.

**biostatistics** *n.* **1.** data compiled about a population, including rates of birth, disease, and death (see VITAL STATISTICS). See also DEMOGRAPHY. **2.** the branch of statistics concerned with collecting and analyzing data that pertain to biological processes or health characteristics, especially in medicine and epidemiology. Also called **biometrics**; **biometry**. —**biostatistical** *adj.* —**biostatistician** *n.*

**biosynthesis** *n.* **1.** the production of chemical compounds by living organisms from nutrients by means of enzyme-catalyzed reactions. **2.** the production of molecules of biological or medical interest, either in the laboratory or commercially, for example, by recombinant DNA technology. —**biosynthetic** *adj.*

**biotaxis** *n.* **1.** the classification of living organisms by their anatomical features and traits. **2.** the ability of living cells to orient themselves with respect to their environment. See NEUROBIOTAXIS. —**biotactic** *adj.*

**biotechnology** *n.* any technique that uses biological organisms, cells, or processes to produce products and services to meet human needs.

**bioterrorism** *n.* a form of TERRORISM in which biological agents such as viruses and bacteria are deliberately released into air, water, or food to cause illness and death. Anthrax, for example, has been used in bioterrorism.

**biotope** *n.* in ecology, a physical region that can be defined by particular environmental characteristics.

**biotransformation** *n.* the metabolic process by which a substance (e.g., a drug) is changed from one chemical to another by means of a chemical reaction within a living

system. The metabolites, or products, of this change may be active or inactive within the system.

**biotransport** *n.* the transportation of substances within cells or into and out of cells across biological membranes. See ACTIVE TRANSPORT; ION PUMP; PASSIVE TRANSPORT.

**biotype** *n.* **1.** a group of individuals who are very similar or identical in their GENOTYPE (genetic makeup), although they may vary in PHENOTYPE (visible features). **2.** a physical characteristic that distinguishes a population of organisms adapted to a particular environment and that does not occur in populations of the same species in other environments. —**biotypic** *adj.*

**biotypology** *n.* the classification of human beings according to their constitutional, anatomical, physiological, and psychological characteristics. See also CONSTITUTIONAL TYPE.

**bipedal locomotion** the ability to walk or run on two feet and in an upright position, as in human beings and birds. Great apes and bears engage in short periods of bipedal locomotion, especially when carrying food, traveling over wet ground, or looking for something to eat.

**biperiden** *n.* a synthetic ANTICHOLINERGIC DRUG closely related to TRIHEXYPHENIDYL but having greater affinity for NICOTINIC RECEPTORS than for MUSCARINIC RECEPTORS, compared with trihexyphenidyl. It is used to manage symptoms of Parkinson's disease and parkinsonian symptoms induced by antipsychotic drugs. U.S. trade name: **Akineton**.

**biphasic sleep** see POLYPHASIC SLEEP.

**biplot** *n.* a multivariate graphic that simultaneously displays information about variables and participants. Data about two or more variables usually are denoted by arrows or vectors, and specific measurements for individual cases usually are denoted by dots. Biplots often are used in PRINCIPAL COMPONENTS ANALYSIS.

**bipolar** *adj.* denoting something with two opposites or extremities, such as a BIPOLAR NEURON or the BIPOLAR DISORDERS. —**bipolarity** *n.*

**bipolar cell** see BIPOLAR NEURON.

**bipolar disorder** any of a group of mood disorders in which symptoms of mania and depression alternate. In *DSM-IV-TR* and *DSM-5*, the group includes primarily the following subtypes: **bipolar I disorder**, in which the individual fluctuates between episodes of mania or hypomania and MAJOR DEPRESSIVE EPISODES or experiences a mix of these; **bipolar II disorder**, in which the individual fluctuates between major depressive and hypomanic episodes; and CYCLOTHYMIC DISORDER. The former official name for bipolar disorders, **manic-depressive illness**, is still in frequent use.

**bipolar electrode** see ELECTRODE.

**bipolarity** *n.* a construct of mutual exclusion and, by implication, a strong negative correlation between opposite dimensions. It typically is applied to affect or mood (e.g., happiness vs. sadness; enjoyment vs. irritation), but it also may be used to describe INDIVIDUAL DIFFERENCES (e.g., introversion vs. extraversion). In contrast, the concept of UNIDIMENSIONALITY is characterized by variation of a single attribute, such as a greater or lesser degree of pleasure.

**bipolar neuron** a neuron with only two extensions—an AXON and a DENDRITE—that run from opposite sides of the

**CELL BODY.** Cells of this type are found primarily in the retina (see **RETINAL BIPOLAR CELL**) and elsewhere in the nervous system. Also called **bipolar cell**. Compare **MULTIPOLAR NEURON**; **UNIPOLAR NEURON**.

**bipolar rating scale** a set of response options whose lower- and upper-end terms are opposites. For example, a bipolar rating scale for motivation might include response options that range from *very strong* to *very weak*. Also called **bipolar scale**. Compare **UNIPOLAR RATING SCALE**. See also **SEMANTIC DIFFERENTIAL**.

**bipolar stimulation** the activation of a particular neuron or part of the brain through the use of an electrical current generated by a cathode and anode (see **ELECTRODE**) placed relatively close to each other.

**bird flu** see **AVIAN INFLUENZA**.

**birds-of-a-feather phenomenon** the tendency to affiliate with or be attracted to others similar to oneself. As a result, groups and other interpersonal aggregates (e.g., romantic couples, friendship networks) tend to be composed of individuals who are similar to one another rather than dissimilar. See also **HOMOPHILY**.

**BIRGing** acronym for **BASKING IN REFLECTED GLORY**.

**birth cohort** see **COHORT**.

**birth control** voluntary regulation of the number and spacing of offspring, including (a) the prevention of conception using contraceptive devices or agents (e.g., **INTRA-UTERINE DEVICES**, male contraceptive devices, **ORAL CONTRACEPTIVES**, spermicides), the **RHYTHM METHOD**, and surgical methods of **STERILIZATION** (e.g., salpingectomy, vasectomy); and (b) the termination of pregnancy by induced **ABORTION**.

**birth cry** the initial reflexive sound produced by a newborn infant when respiration begins.

**birth defect** see **CONGENITAL DEFECT**.

**birth injury** physical damage incurred during birth, especially malformation or brain injury. Damage is most likely to occur in transverse or breech births, in instrumental deliveries (e.g., with forceps), in premature infants and multiple births, in episodes of **ANOXIA** or **HYPOXIA**, or in prolonged labor.

**birth mother** see **BIRTH PARENT**.

**birth order** the ordinal position of a child in the family (first-born, second-born, youngest, etc.). There has been much psychological research into how birth order affects personal adjustment and family status, but the notion that it has strong and consistent effects on psychological outcomes is not supported. Early interest in birth order appears in the work of Francis **GALTON** and Sigmund **FREUD**, but it was Alfred **ADLER** who first proposed that birth order is an important factor in personality development. Current family-structure research sees birth order not so much as a causal factor but rather as an indirect variable that follows in importance more process-oriented variables (e.g., parental discipline, sibling interaction, genetic and hormonal makeups).

**birth parent** the biological parent of a child, particularly the mother (**birth mother**), contrasted with the parent who may rear the child (see **ADOPTIVE PARENT**).

**birth rate** the ratio of total live births to total population in a given community or geographical area within a specified period, often expressed as the number of live births per

1,000 population per year. Also called **natality**. Compare **FECUNDITY**; **FERTILITY**.

**birth ratio** the ratio of one kind of birth to another, such as the ratio of male to female births, multiple to total births, or teen births (births by teenage mothers) to total births. See also **SEX RATIO**.

**birth rite** a culture-bound ceremony, religious ritual, or other customary practice associated with the prenatal period, birth, or infancy. In Western societies, such rites may include baptism, **CIRCUMCISION**, or a secular naming ceremony. See **RITE OF PASSAGE**.

**birth trauma** in psychoanalytic theory, the psychological shock of being born, due to the sudden change from the security of the womb to being bombarded with stimuli from the external world. Sigmund **FREUD** viewed birth as the child's first anxiety experience and the prototype of separation anxiety. To Austrian psychoanalyst Otto Rank (1884–1939), who first proposed the idea of birth trauma, it was the crucial factor in causing neuroses. The theory was subsequently disproven by infant research. See also **PRIMAL ANXIETY**; **PRIMAL TRAUMA**.

**BIS** abbreviation for **BEHAVIORAL INHIBITION SYSTEM**.

**bisection** *n.* the act of splitting something into two equal parts. In psychophysics it refers to a scaling method in which a participant adjusts a stimulus until it is perceived as halfway between two other stimuli with respect to a particular dimension.

**biserial correlation coefficient** (symbol:  $r_b$ ;  $r_{bis}$ ) a measure of the strength of the association between a variable whose values may span a given range (e.g., grade-point average) and a variable with only two discrete values (e.g., 0 or 1; pass or fail). It is distinct from the **POINT BISERIAL CORRELATION COEFFICIENT** in assuming that there is a **NORMAL DISTRIBUTION** underlying most characteristics. Also called **biserial *r***.

**bisexuality** *n.* sexual attraction to or sexual behavior with both men and women. Although much psychological research demonstrates the existence of a continuum of sexual attraction within most individuals, equal responsiveness to both sexes over the lifespan is relatively rare, appearing to be more common in women than in men and varying across cultures. —**bisexual** *adj.*, *n.*

**bisphenol A (BPA)** a chemical compound used to produce polycarbonate plastics, such as plastic water and baby bottles, and the epoxy resins found in the lining of food cans, water supply pipes, and other metal products. The U.S. Food and Drug Administration has “some concern” (on a scale of “negligible concern” to “serious concern”) about the effects of BPA exposure on the brain and behavior of fetuses, infants, and children; it is working to limit exposure and, with the Environmental Protection Agency and other agencies, to evaluate further BPA's health consequences. See also **ENDOCRINE DISRUPTOR**.

**bistable perceptual events** perceptions in which sensory stimuli, most often visual, are experienced as “flipping” between two mutually exclusive perspectives or meanings (see **ALTERNATING PERSPECTIVE**). For example, the **NECKER CUBE** is usually seen in one of two alternating perspectives; the “young–old woman” visual illusion consists of alternating images of a young woman and then an old woman. See also **AMBIGUOUS FIGURE**.

**bit** *n.* 1. in computing, a variable that can take only the



values of zero or one. [bi(nary) + (digi)t] **2.** in information theory, the quantity of information that decreases uncertainty or the germane alternatives of a problem by one half. For example, if a dollar bill has been placed in one of 16 identical books standing side by side on a shelf, and one has to identify this book by asking a minimum number of questions that can be answered only by “yes” or “no,” the best way to begin would be to ask if the book is to the right (or to the left) of center. The answer to this question would provide one bit of information.

**bite bar 1.** a device used to immobilize a participant’s head during studies of visual perception. A bite bar contains an impression of the participant’s teeth, so that when the bar is held between the jaws the head cannot move. **2.** in animal research, a bar placed in the mouth to restrain animals during surgery or to immobilize animals that are being tested.

**bitemporal hemianopia** a loss of vision in both the left half of the left visual field and the right half of the right visual field. It is caused by injury (compression) of the OPTIC CHIASM. See HEMIANOPIA.

**bitter** *adj.* denoting the unpleasant TASTE evoked by most alkaloids, glycosides, vitamins, and some salts. Each bitter chemical is recognized by one or more of a family of about 60 receptor proteins; some 15% of the human TASTE CELLS possess these proteins and therefore the capacity to signal bitterness. Bitter tastes are also associated with toxic chemicals. —**bitterness** *n.*

**bivalence** *n.* in logic, the principle that there are two and only two TRUTH VALUES, so that every proposition is necessarily either true or false. Compare INFINITE-VALUED LOGIC.

**bivariate** *adj.* characterized by two variables or attributes. For example, a set of height and weight measurements for each participant in a study would be bivariate data. Compare MULTIVARIATE; UNIVARIATE.

**bivariate distribution** a distribution showing each possible combination of values for two RANDOM VARIABLES according to their probability of occurrence. For example, a bivariate distribution may show the probability of obtaining specific pairs of heights and weights among college students. Also called **bivariate probability distribution**.

**bivariate frequency distribution** a distribution showing each possible combination of two CATEGORICAL VARIABLES according to their observed frequency. For example, a researcher may use a bivariate frequency distribution to display how many male and female students at a university are majoring in particular fields of study.

**bivariate probability distribution** see BIVARIATE DISTRIBUTION.

**bizarre behavior** behavior that is odd, strange, or unexpected, particularly if it is out of the ordinary for a given person. It may be a symptom of brain damage or a mental disorder, especially a psychotic disorder, such as schizophrenia.

**bizarre delusion** a belief that is clearly fantastic and implausible but is nonetheless maintained with conviction. For example, an individual with schizophrenia may believe that external forces are removing the thoughts from his or her mind (see THOUGHT WITHDRAWAL).

**bizarreness effect** see DISTINCTIVENESS EFFECT.

**blackboard** *n.* a software architecture consisting of a generally accessible global database (the blackboard) ac-

cessed by a number of “knowledge sources.” The modular knowledge sources interact independently, posting and consuming information to and from the blackboard. An early use of the blackboard approach was in the development of Hearsay, a program that recognized and interpreted voiced speech.

**black box** a system in which both the input and output are observable but the processes that occur between them are unknown or not observable. Such internal processes must be hypothesized on the basis of known relationships between external factors and the resulting effects. For example, in the relationship between leadership ability (input) and on-the-job performance as a project manager (output), the role of the organizational climate could be considered a black box if it is not understood.

**black box warning** see BOXED WARNING.

**Black English** a VERNACULAR of English used by the African American SPEECH COMMUNITY. Its formal and sociolinguistic properties have been the subject of intensive linguistic scholarship, notably by U.S. linguist William Labov (1927– ). Also called **African American Vernacular English (AAVE)**; **Black English Vernacular (BEV)**; **Ebonics**.

**blacking out** see FALLING OUT.

**blackout** *n.* **1.** total loss of consciousness produced, for example, by sudden lowering of the blood supply to the brain or by decreased oxygen supply. **2.** amnesia produced by alcoholic intoxication. Also called **alcoholic blackout**.

**black sheep effect** the tendency to evaluate a disreputable or disliked person more negatively when that person is a member of one’s own group rather than of some other group. Although an apparent contradiction of INGROUP BIAS, the black sheep effect is explained by SOCIAL IDENTITY THEORY: People respond negatively to those who act in ways that threaten their group’s identity, particularly when they affiliate strongly with their group.

**bladder reflex** see MICTURITION REFLEX.

**Blake–Mouton managerial grid** a model of leadership in which the behavior of the leader is assessed on two dimensions: concern for production and concern for people. The LEADERSHIP STYLE of a manager is described on 9-point scales on each dimension, giving a total of 81 possible styles. The five most often discussed styles are 9,1 (high concern for production, low concern for people: authoritarian); 1,9 (low production, high people: country club); 5,5 (medium production, medium people: compromiser); 1,1 (low production, low people: laissez faire); and 9,9 (high production, high people: team leadership). Also called **two-dimensional leader behavior space**. See also GRID ORGANIZATIONAL DEVELOPMENT. [developed in 1964 by Robert R. Blake (1918–2004) and Jane S. Mouton (1930–1987), U.S. psychologists]

**blaming the victim** a social psychological phenomenon in which individuals or groups attempt to cope with the bad things that have happened to others by assigning blame to the victim of the trauma or tragedy. Victim blaming serves to create psychological distance between the blamer and the victim, may rationalize a failure to intervene if the blamer was a bystander, and creates a psychological defense for the blamer against feelings of vulnerability.

**blank screen** in psychoanalysis, according to Sigmund FREUD, the metaphorical backdrop onto which the patient

projects feelings and fantasies during the TRANSFERENCE process. The screen is the psychoanalyst, who must remain neutral (blank) to enable the patient to feel free to give voice to his or her innermost thoughts. Contemporary psychoanalysts no longer believe that the psychoanalyst can be a totally neutral blank screen.

**blank trial** a trial within an experiment that uses irregular or meaningless stimulus conditions to prevent the participant from guessing or giving automatic responses. See also CATCH TRIAL.

**blast noise** excessive acoustic exposure (noise), which may rupture the tympanic membrane (eardrum) or cause damage to the inner ear.

**blastocyst** *n.* the mammalian EMBRYO at a very early stage of development. It consists of a tiny hollow sphere containing an inner cell mass, enclosed in a thin layer of cells that help implant the blastocyst in the uterine lining. Blastocyst formation in humans generally occurs on the 5th or 6th day following fertilization.

**blast olfactometer** an OLFACTOMETER that pulses an ODORANT into the nasal cavities via a blast of air. Because the blast has tactile as well as odor effects, most olfactometers now have a constant airstream into which odorants are introduced. See also STREAM OLFACTOMETER; ZWAARDEMAKER OLFACTOMETER.

**blastula** *n.* a roughly spherical group of cells formed by division of the fertilized egg (zygote) during the early stages of embryonic development. It consists of a single layer of cells (the **blastoderm**) surrounding a fluid-filled cavity (the **blastocoel**). In mammals, the blastula is called a BLASTOCYST.

**blended family** see STEPFAMILY.

**blending** *n.* in linguistics, the process of combining the beginning of one word with the end of another to create a wholly new term; for example, *Reaganomics* is a blend of (Ronald) *Reagan* and *economics*. See PORTMANTEAU NEOLOGISM.

**blepharospasm** *n.* a tonic SPASM of the eyelid muscle that is manifested by an involuntary blinking or eye closure.

**Blessed Dementia Scale (BDS)** a behavioral rating scale used in the assessment of DEMENTIA severity. It has subscales measuring changes in the performance of everyday tasks, changes in daily activities and habits, and changes in personality and motivation. [developed in 1968 by Gary **Blessed**, British psychogeriatrician; Bernard E. Tomlinson, British neuropathologist; and Martin Roth, British psychiatrist]

**Bleuler's theory** a theory proposing a basic underlying symptomatology for schizophrenia. It defined four FUNDAMENTAL SYMPTOMS required for a diagnosis of the condition; the more obvious manifestations of schizophrenia (e.g., delusions, hallucinations) were regarded as accessory symptoms (see SECONDARY SYMPTOMS) because they are shared with other disorders. [Eugen BLEULER]

**blind** *adj.* **1.** denoting a lack of sight. See BLINDNESS. **2.** denoting a lack of awareness. In research, a blind procedure may be employed deliberately to enhance experimental control: A **single blind** is a procedure in which participants are unaware of the experimental conditions under which they are operating; a **double blind** is a procedure in which both the participants and the experimenters

interacting with them are unaware of the particular experimental conditions; and a **triple blind** is a procedure in which the participants, experimenters, and data analysts are all unaware of the particular experimental conditions.

**blind alley** a type of MAZE pathway or passage whose only exit is its entrance. Also called **cul-de-sac**.

**blind analysis** an evaluation of data or conditions without specific knowledge or previous information about the topic being examined. For example, a clinical psychologist might diagnose a patient without having information concerning previous psychological diagnoses.

**blind judgment** an evaluation made without knowledge of information that might influence one's assessment of the situation. Such an approach is used to eliminate conscious or nonconscious bias. Blind judgments are often used in clinical experiments, for example, judging patients' current level of depression in the absence of information about which, if any, treatment they have received; and in scholarly peer review of manuscripts, in which the author's institutional affiliation is not disclosed to the reviewer.

**blindness** *n.* **1.** profound, near-total, or total impairment of the ability to perceive visual stimuli. According to the World Health Organization's international classification (1990), blindness is defined as VISUAL ACUITY less than 20/400 in the better eye with best correction or a VISUAL FIELD less than 10° in the widest meridian in the better eye. In the United States, the criterion for **legal blindness** is visual acuity of 20/200 or less in the better eye with best correction or a visual field of 20° or less in the widest meridian of the better eye. **2.** absence of usable vision with the exception of light perception. Major causes of organic blindness include inoperable CATARACT, uncontrolled GLAUCOMA, RETINITIS PIGMENTOSA, DIABETIC RETINOPATHY, age-related MACULAR DEGENERATION, rubella, and brain injury. See also CORTICAL BLINDNESS; FUNCTIONAL BLINDNESS; LOW VISION; VISUAL IMPAIRMENT. —**blind** *adj.*

**blind review** an evaluation of a manuscript to assess its suitability for publication or of a grant proposal to assess its suitability for funding, as performed by a person who does not know the identity of the author or proposer.

**blindsight** *n.* the capacity of some individuals with damage to the STRIATE CORTEX (primary visual cortex or area V1) to detect and even localize visual stimuli presented to the blind portion of the visual field. Discrimination of movement, flicker, wavelength, and orientation may also be present. However, these visual capacities are not accompanied by conscious awareness. The causes of blindsight are the subject of some debate: Because the neural pathway from the LATERAL GENICULATE NUCLEUS to the striate cortex is nonfunctional in blindsighted people, it is thought that these capacities are either based on the visual collicular pathway (see COLLICULUS; SUPERIOR COLLICULUS) or represent RESIDUAL VISION using surviving striate cortex. See also DEAF HEARING; NUMBSENSE.

**blind spot** **1.** in vision, the area of the monocular visual field in which stimulation cannot be perceived because the image falls on the site of the OPTIC DISK in the eye. **2.** a lack of insight or awareness—often persistent—about a specific area of one's behavior or personality, typically because recognition of one's true feelings and motives would be painful. In classical psychoanalysis, it is regarded as a defense against recognition of repressed impulses or memories that would threaten the patient's EGO. See SCOTOMIZATION.

**blind walk** a TRUST EXERCISE used in a group setting (e.g., an ENCOUNTER GROUP) to help members develop mutual trust. Half of the group close their eyes; the other half become their partners and lead the “blind” people through various experiences. Roles are then reversed, and finally all members discuss their reactions to the experience.

**blink response** abrupt closure of the eyelids in response to bright light, shifting attention, or irritation of the eye. Also called **blink reflex**.

**BLM (BLMS)** abbreviation for BUCCOLINGUAL MASTICATORY SYNDROME.

**bloating** *n.* a feeling of distension in the abdomen that may have organic or psychogenic causes. It may be a feature of IRRITABLE BOWEL SYNDROME and is frequently encountered as a symptom of SOMATIZATION DISORDER. Also called **abdominal bloating**.

**blob** *n.* see CYTOCHROME OXIDASE BLOB.

**Bloch's law** a rule of TEMPORAL SUMMATION stating that visual threshold is reached when luminance  $\times$  duration reaches a constant. If the brightness of a stimulus is halved, the stimulus can still be detected if its duration is doubled. Bloch's law only holds for relatively brief ( $\leq 100$  ms), dim stimuli. Also called **Bunsen–Roscoe law**.

**block** *n.* **1.** an abrupt, involuntary interruption in the flow of thought or speech in which the individual is suddenly aware of not being able to perform a particular mental act, such as finding the words to express something he or she wishes to say. Also called **mental block**. See RETRIEVAL BLOCK; TIP-OF-THE-TONGUE PHENOMENON. **2.** in psychotherapy, an obstacle to progress that is perceived as a barrier that cannot be crossed. **3.** any physical, biochemical, or psychological barrier or obstacle that obstructs or impedes a process, function, or activity. **4.** a group or subset of study participants who share a certain characteristic and are treated as a unit in an experimental design. **5.** a set of variables entered as a single entity into a REGRESSION ANALYSIS or similar statistical procedure.

**block design** a type of research study in which participants are divided into relatively homogeneous subsets (blocks) from which they are assigned to the experimental or treatment conditions. For example, in a simple block design to evaluate the efficacy of several antidepressants, participants with similar pretest depression scores might be grouped into homogeneous blocks and then assigned to receive different medications. The purpose of a block design is to ensure that a characteristic of the study participants that is related to the target outcome (i.e., a COVARIATE) is distributed equally across treatment conditions. See COMPLETE BLOCK DESIGN; INCOMPLETE BLOCK DESIGN; RANDOMIZED BLOCK DESIGN.

**block-design test** an intelligence subtest, found most notably on the Wechsler intelligence scales, in which the respondent is asked to use colored blocks to match a specified design. The block-design test also is utilized in the diagnosis of mental disorder and mental deterioration. See also KOHS BLOCK DESIGN TEST.

**blocking** *n.* **1.** a process in which one's flow of thought or speech is suddenly interrupted (see BLOCK). Also called **thought deprivation**; **thought obstruction**. **2.** the process of grouping research participants into relatively homogeneous subsets on the basis of a particular characteristic. Such blocking helps adjust for preexisting patterns of variation between experimental units. See BLOCK DESIGN.

**blocking factor** in a BLOCK DESIGN, an attribute or variable used as a basis for subdividing study participants or other sampling units into homogeneous subsets.

**block randomization** a method for assigning study participants to experimental conditions in which individuals are arbitrarily divided into subsets or blocks and then some random process is used to place individuals from those blocks into the different conditions. For example, a researcher might divide participants into blocks of 10 and then randomly assign half of the people in each to the CONTROL GROUP and half to the EXPERIMENTAL GROUP. Block randomization is distinct from BLOCKING in that the block does not have any significance other than as an assignment unit.

**block sampling** a technique, mainly used as part of a multistage procedure, for selecting units for study. A population is divided into groups (blocks) that each have approximately the same number of targets (e.g., adults to be interviewed), a random subset of those blocks is chosen, and a random subset of targets within each selected block is identified. This type of sampling helps to ensure that characteristics of the initial population are well represented in the final sample.

**Blocc's disease** see ASTASIA–ABASIA. [Paul O. Blocc (1860–1896), French physician]

**blood alcohol concentration (BAC)** the amount of ETHANOL in the bloodstream after alcohol consumption, measured as a percentage. In the United States, the limit at which it becomes a crime to drive after drinking is generally 0.08% (i.e., 0.08 g of alcohol per 100 mL of blood). Also called **blood alcohol level (BAL)**.

**blood–brain barrier** a semipermeable barrier formed by cells lining the blood capillaries that supply the brain and other parts of the central nervous system. It prevents large molecules, including many drugs, from passing from the blood to the fluid surrounding brain cells and to the cerebrospinal fluid, and thus it protects the brain from potentially harmful substances. Ions and small molecules, such as water, oxygen, carbon dioxide, and alcohol, can cross relatively freely. Entry is also possible for lipid-soluble compounds, such as anesthetics, which diffuse through plasma membranes.

Several anatomical features contribute to the barrier. Cells lining the capillary walls are joined together by tight junctions, which block the passage of molecules through the intercellular spaces found in capillaries elsewhere. Also, the brain capillaries lack pores, called **fenestrations**, which normally promote the passage of fluid and solutes. Furthermore, the brain capillaries are tightly enveloped in a sheath formed by star-shaped glial cells, called ASTROCYTES. The barrier formed by these features helps maintain a constant environment in which the brain can function, but it also means that many potentially useful drugs cannot enter the brain from the bloodstream. See also AREA POSTREMA.

**blood glucose** see BLOOD SUGAR.

**blood group** a category of immunologically distinct, genetically determined traits based on the presence or absence of certain ANTIGENS on the surface of red blood cells. The most commonly used method of categorization is the ABO system, in which the basic categories are A, B, AB, and O. There are more than 20 other blood group systems, including the rhesus system (see RH FACTOR). The major initial work on blood groups and on the nature of blood

transfusion was done at the beginning of the 20th century by Austrian physician Karl Landsteiner (1868–1943), who received a Nobel Prize for this research in 1930. Also called **blood type**.

**bloodletting** *n.* see PHLEBOTOMY.

**blood levels** the relative amounts of various substances in a measured amount of blood. Blood levels involve comparison of observed levels with an amount or range taken to be normal or toxic. The amount may be expressed as a percentage, in milligrams or micrograms per 100 milliliters, millimoles, or micromoles per liter, or a similar measure. Also called **circulating levels**.

**blood oxygenation level-dependent (BOLD)** describing a contrast identified during FUNCTIONAL MAGNETIC RESONANCE IMAGING (fMRI) that signals alterations in blood oxygen levels as a function of increased or decreased brain activity during an fMRI event. The exact meaning of these signals has recently been questioned. Also called **blood oxygen level-dependent**.

**blood phobia** a persistent and irrational fear of blood, specifically of seeing blood. Situations in which blood may be encountered are often avoided or else endured with intense anxiety or distress. An individual confronting blood experiences a subjective feeling of disgust and fears the consequences of the situation, such as fainting. In certain diagnostic classifications, such as *DSM-IV-TR* and *DSM-5*, blood phobia is identified as a SPECIFIC PHOBIA, blood-injection-injury type. Blood phobia rarely is called **hematophobia** or **hemophobia**.

**blood poisoning** see SEPTICEMIA.

**blood pressure** the pressure exerted by the blood against the walls of blood vessels, especially arteries. It varies with the strength of the heartbeat, the elasticity of the artery walls and resistance of the arterioles, and the person's health, age, and state of activity. Blood pressure is measured using an instrument called a **sphygmomanometer**. The pressure measured during heart contraction (see SYSTOLIC BLOOD PRESSURE) is higher than that measured when the heart is relaxed (see DIASTOLIC BLOOD PRESSURE). The readings are recorded (in millimeters of mercury) as systolic/diastolic; the normal resting blood pressure for an adult is less than 120/80. See also HYPERTENSION.

**blood sugar** the concentration of GLUCOSE in the blood, which is regulated by the pancreatic hormones INSULIN and GLUCAGON. Glucose is an important source of energy for the body, particularly the brain. The normal level of blood sugar for humans, measured 12 hours after the last meal, generally ranges between 70 and 110 mg glucose per deciliter of blood. Abnormally high or low levels (see HYPERGLYCEMIA; HYPOGLYCEMIA) may indicate any of several disease states.

**blood type** see BLOOD GROUP.

**Bloom's taxonomy** one of the first systematic classifications of the three domains—cognitive, affective, and psychomotor—that students use in attaining educational goals. Originally proposed in 1956, the taxonomy states that each domain is divided into levels from least to most complex, representing a cumulative hierarchy. The **cognitive domain** encompasses intellectual capacity. The remembering level is considered to be the lowest taxonomic category in this domain, since information can be recalled with a minimum of understanding. The highest level, creating, represents the cumulative contributions of the re-

membering level plus four others arranged in order of cognitive complexity: understanding, applying, analyzing, and evaluating. The **affective domain** encompasses emotional capacity, feelings, values, and attitudes and consists of five levels: receiving, responding, valuing, organizing, and characterizing. The **psychomotor domain** includes movement, spatial relationships, and use of motor skills. Its hierarchy was not described in the original taxonomy, but a number of different hierarchies were proposed in the 1970s, generally organized around the degree of learned capacity with reflex, imitation, and perception at the lowest level and the creation or coordination of highly skilled movements at the highest level. Also called **taxonomy of educational objectives**. [proposed by a committee of college examiners chaired by U.S. educator Benjamin S. Bloom (1913–1999)]

**B-love** *n.* see BEING LOVE.

**blow** **1.** *n.* slang for COCAINE. **2.** *vb.* to inhale cocaine or to smoke marijuana.

**blow job** slang for oral stimulation of the penis by a partner, which may occur as a part of foreplay or may be continued to the point of orgasm.

**BLSA** abbreviation for BALTIMORE LONGITUDINAL STUDY OF AGING.

**blue** *n.* the color experienced when the eye is stimulated by energy in the short-wavelength portion (c. 500–445 nm) of the visible SPECTRUM.

**blue-collar worker** an employee, such as a factory worker, who performs manual or technical physical labor. The term derives from the blue shirts traditionally worn by many industrial workers. Compare PINK-COLLAR WORKER; WHITE-COLLAR WORKER.

**blues** *pl. n.* a colloquial name for depressive symptoms, especially sadness or ANHEDONIA. It usually implies that the symptoms are mild or transient. See also BABY BLUES.

**blue-sighted** *adj.* having unusual sensitivity to blue stimuli. When a yellowed lens is removed to alleviate a cataract, many patients report heightened sensitivity to blue stimuli.

**blue–yellow blindness** a rare type of partial color blindness marked by blue and yellow confusion.

**blunted affect** a disturbance in which emotional responses to situations and events are dulled.

**blur** *n.* the quality of an image that causes it to be indistinct, with smeared or vague borders.

**blur point** the minimum distance from the eye that a stimulus must be placed to appear blurred.

**blurred vision** see VISUAL BLURRING.

**blushing** *n.* an involuntary reddening of the face, sometimes associated with feelings of embarrassment, self-consciousness, modesty, or shame.

**B lymphocyte** see LYMPHOCYTE.

**BMI** **1.** abbreviation for BODY MASS INDEX. **2.** abbreviation for brain–machine interface. See BRAIN–COMPUTER INTERFACE.

**BMLD** abbreviation for binaural MASKING LEVEL DIFFERENCE.

**B-motivation** *n.* see METAMOTIVATION.

**BMR** abbreviation for basal metabolic rate. See BASAL METABOLISM.

**BNSQ** abbreviation for BASIC NORDIC SLEEP QUESTIONNAIRE.

**BNT** abbreviation for BOSTON NAMING TEST.

**board certified** denoting a physician or other health care professional who has passed an examination set by a specialty board and has been certified as a specialist in that area. A board-certified (or **boarded**) individual is known as a **diplomat**.

**boarding home** see ADULT HOME; GROUP HOME; HALF-WAY HOUSE.

**Bobo doll** an inflatable plastic clown. In his studies of observational learning, Albert BANDURA demonstrated that children who had watched a videotape of an adult being violent with a Bobo doll were more likely to behave aggressively toward the doll than were children who had watched an adult being nonviolent toward it.

**bodily-kinesthetic intelligence** in the MULTIPLE-INTELLIGENCES THEORY, the skills involved in forming and coordinating bodily movements, such as dancing, playing a violin, or playing basketball.

**body** *n.* **1.** the entire physical structure of an organism, such as the human body. **2.** the physical body as opposed to the mental processes of a human being. See MIND–BODY PROBLEM. **3.** the trunk or torso of a human or nonhuman animal. **4.** the main part of a structure or organ, such as the body of the penis. **5.** a discrete anatomical or cytological structure, such as the Barr body (see SEX CHROMATIN).

**body awareness** the perception of one's physical self or body at any particular time.

**body boundaries** the definiteness or indefiniteness of the outlines of a body. Barrier responses in RORSCHACH INK-BLOT TESTS, such as “turtle with shell” and “man in armor,” indicate definite body boundaries, whereas penetration responses, such as “person bleeding” and “torn coat,” indicate indefinite boundaries.

**body buffer zone** the physical distance a person prefers to maintain between him- or herself and one or more other individuals to avoid feeling uncomfortable. This zone varies depending on the relationship with the others; it is smaller, for example, when there is a close relationship. It also varies according to culture. See also BUBBLE CONCEPT OF PERSONAL SPACE; INTERPERSONAL DISTANCE.

**body build** a general measure of the body in terms of trunk, limb length, and girth.

**body-build index** an index of constitutional types. Individuals are grouped according to the formula  $(\text{height} \times 100)/(\text{transverse chest diameter} \times 6)$ . MESOMORPHS, who are muscular, fall within one standard deviation of the mean; narrowly built **leptomorphs** one standard deviation or more above the mean; and broadly built **eurymorphs** one standard deviation or more below the mean. [proposed by Hans EYSENCK]

**bodybuilding** *n.* the use of a weight-lifting program to build muscle bulk and to acquire muscle definition.

**body cell** any tissue cell that is not a GERM CELL. It normally has the DIPLOID number of chromosomes. Also called **somatic cell**.

**body cognitions** beliefs or attitudes about the features

of one's appearance. Characteristically negative and self-defeating thoughts are related to subjective dissatisfaction.

**body concept** the thoughts and feelings that constitute the way an individual views his or her body characteristics; that is, the conceptual image of one's body. Compare BODY PERCEPT. See BODY IMAGE.

**body disfigurement** an objective defect of appearance related to a congenital malformation, physical injury, or any disease process that modifies the physical integrity of the individual.

**body distortion** see BODY-IMAGE DISTORTION; BODY-SIZE OVERESTIMATION.

**body dysmorphia** an extreme disparagement of some aspect of appearance that is not supported by the objective evidence. There may be only a mild defect in the body feature or, in extreme cases, there may be no objective evidence of any malformation or oddity of appearance. See also BODY DYSMORPHIC DISORDER; MUSCLE DYSMORPHIA.

**body dysmorphic disorder (BDD)** a disorder characterized by excessive preoccupation with an imagined defect in physical appearance or markedly excessive concern with a slight physical anomaly. The preoccupation is typically accompanied by frequent checking of the defect. BDD is classified in *DSM-IV-TR* as a SOMATOFORM DISORDER, but because it shares features with OBSESSIVE-COMPULSIVE DISORDER, such as obsessions with appearance and associated compulsions (e.g., mirror-checking), it has been reclassified in *DSM-5* under a category labeled **obsessive-compulsive and related disorders**.

**body ego** in psychoanalytic theory, the part of the EGO that develops out of self-perceptions of the body. It is the first manifestation of the core of the ego around which all perceptions of the self are grouped, including individual memories, sensations, ideas, wishes, strivings, and fantasies.

**body electrode placement** the pattern or location of individual electrodes used to measure electrical properties of the heart, brain, skin, or other organ or system.

**body esteem** the degree of positiveness with which individuals regard the various parts of their body and the appearance of those parts.

**body ideal** the BODY TYPE promoted within a culture and its media as most attractive or most appropriate to a person's age, gender, and race. This is variously internalized, imposed, and resisted by individuals and groups.

**body image** the mental picture one forms of one's body as a whole, including its physical characteristics (BODY PERCEPT) and one's attitudes toward these characteristics (BODY CONCEPT). Also called **body identity**. See also BODY SCHEMA.

**Body Image Assessment (BIA)** a measure of body image in which a participant is shown silhouettes of figures that increase incrementally in size from very thin to very overweight and is asked to choose the one that represents his or her actual figure and the one that represents his or her ideal figure. In addition to the BIA for adults, there are three other forms of the instrument: BIA–O for obese adults, BIA–C for younger children, and BIA–P for preadolescents. [originally developed in 1985 by U.S. psychologist Donald A. Williamson (1950– ) and colleagues]

**body-image avoidance** behavioral manifestations of excessive concern with one's appearance, evidenced by

such behaviors as avoiding social functions and engaging in cover-up activities (e.g., wearing bulky and loose-fitting clothing) to obscure and hide aspects of the body with which one is dissatisfied.

**body-image distortion** distortion in the subjective image or mental representation of one's own body appearance, size, or movement. The term is usually applied to overestimation of body size or used to define the perceptual experiences of individuals with psychoses. Also called **body-image disturbance**. See also ANOREXIA NERVOSA; BODY-SIZE OVERESTIMATION.

**body-image ideals** personal standards of optimal appearance for various body features: idealized features as opposed to actual attributes of appearance.

**body integrity identity disorder (BIID)** a rare disorder characterized by a person's belief that his or her body is marred by the presence of a particular (although healthy) body part, usually an arm or leg. The condition is associated with marked distress, leading the individual with BIID to wish that the limb was paralyzed, to seek elective surgery to have it removed, to attempt to remove the limb himself or herself, or to injure the limb so badly that doctors are forced to amputate it. Also called **amputee identity disorder**; **apotenophilia**.

**body language** the expression of feelings and thoughts, which may or may not be verbalized, through posture, gesture, facial expression, or other movements. For example, anger is usually indicated by a facial expression in which there are downward lines in the forehead, cheeks, and mouth, and the hands may be clenched. Body language is often called NONVERBAL COMMUNICATION.

**body mass index (BMI)** a widely used measure of adiposity or obesity based on the following formula: weight (kg) divided by height squared ( $m^2$ ).

**body memory** a sensory recollection of trauma in the form of pain, arousal, tension, or discomfort, usually unaccompanied by words or images. Body memory is frequently the result of trauma occurring during the period of CHILDHOOD AMNESIA, leading to a sensorimotor, rather than cognitive, encoding of the traumatic event. See also SENSORIMOTOR MEMORY.

**body-mind problem** see MIND-BODY PROBLEM.

**body narcissism** **1.** an exaggerated preoccupation or fascination with one's own body and its erogenous zones. See also NARCISSISM. **2.** in classical psychoanalytic theory, the PRIMARY NARCISSISM of the young infant.

**body odor** the odor produced by the action of bacteria on skin secretions, such as perspiration (which itself is nearly odorless). Attitudes toward body odor vary in different cultures.

**body percept** the mental image one forms of the physical characteristics of one's own body, that is, whether one is slim or stocky, strong or weak, attractive or unattractive, tall or short. Compare BODY CONCEPT; BODY CONCEPT. See BODY IMAGE.

**body positioning** the notion that body posture can affect memory. Specific kinesthetic and proprioceptive feedback may provide a context for enhancing learning and recall.

**body rocking** see ROCKING.

**body schema** the cognitive organization of one's ap-

pearance, including internal image, thoughts, and feelings. See BODY PERCEPT.

**body-size overestimation** the specific tendency to overestimate the size of body features (e.g., width of waist, hips, or thighs) in relation to objective size measurements. It was once thought to be an essential feature of ANOREXIA NERVOSA. See BODY-IMAGE DISTORTION.

**body temperature** a measure of body heat, which is normally about 98.6 °F (37 °C) in humans. Body temperature affects all metabolic processes, and most cells must remain within the range of 32 °F to 113 °F (0 °C–45 °C). Animals are characterized as ENDOTHERMS or ECTOTHERMS according to how they regulate body temperature. See also HEAT EFFECTS; HYPOTHERMIA.

**body therapies** a group of physical therapies that seek to relieve psychological tensions and other symptoms through body manipulation, relaxation, massage, breathing exercises, and changes in posture and position of body parts. The therapies are based on the theory that the body and its functioning embody an individual's basic personality and way of life. See also BODYWORK.

**body type** a classification of individuals according to body build or physique. Some have theorized an association between aspects of physique and psychological traits, proposing a variety of CONSTITUTIONAL TYPES and SOMATOTYPES.

**bodywork** *n.* an ADJUNCTIVE THERAPY that may be recommended in addition to psychotherapy. It typically includes massage, movement, and exercises involving touch.

**Bogardus Social Distance Scale** an instrument used to measure individuals' attitudes toward particular ethnic groups. Respondents are presented with different scenarios (e.g., having someone from a particular group as a work colleague) and must indicate the acceptability of each for the groups listed. It is assumed that individuals who would prefer to keep a greater social distance between themselves and members of a specific group are prejudiced against that group. The Bogardus scale is one of the most commonly used SOCIAL DISTANCE SCALES. [Emory **Bogardus** (1882–1973), U.S. sociologist]

**bogus pipeline** fake apparatus used in attitude research to ascertain attitudes toward controversial or sensitive issues, about which participants would otherwise be tempted to answer dishonestly. The apparatus is attached to the participant, who is then informed, incorrectly, that it can detect whether the attitude he or she reports is a true one. In one study, it was found that use of the bogus pipeline resulted in a greater likelihood of admitting cocaine abuse, excessive drinking, and oral sex.

**boilermaker's deafness** a high-frequency hearing loss resulting from exposure to high-intensity noise. The condition has been known for many years but is increasingly prevalent due to the increased noise of highly industrialized society. See ACOUSTIC TRAUMA.

**BOLD** acronym for BLOOD OXYGENATION LEVEL-DEPENDENT.

**boldness** *n.* the tendency to accept risk, a dimension of TEMPERAMENT observed in both humans and nonhuman animals. Thus, a bold preschooler may freely engage with unfamiliar classmates, and a bold rat may explore all available areas during an OPEN-FIELD TEST. Individual differences in boldness are presumed to arise from differences in the excitability of areas of the LIMBIC SYSTEM that are in-

volved in the evaluation of stimulus saliency. For example, bold adults exhibit more bilateral NUCLEUS ACCUMBENS activation and less bilateral AMYGDALA activation when looking at the faces of strangers than do less bold adults. Compare SHYNESS. See also SHY–BOLD CONTINUUM.

**bols tering of an attitude** a method of reducing COGNITIVE DISSONANCE by generating new cognitive elements that are consistent with an attitude. This is presumed to offset the dissonance resulting from an inconsistent element.

**bombesin** *n.* a NEUROPEPTIDE, originally isolated from the skin of the fire-bellied toad and later found in mammals, that regulates the contraction of smooth muscle cells, suppresses appetite, and has a role in certain cancers.

**bona fide group** see NATURAL GROUP.

**bona fide occupational qualification (BFOQ)** an attribute or personal characteristic (e.g., age, sex, physical ability) that is genuinely necessary to perform a particular job successfully, as opposed to one that is often associated with the job but not in fact necessary for effective performance. See also ADVERSE IMPACT; AGE DISCRIMINATION IN EMPLOYMENT ACT; AMERICANS WITH DISABILITIES ACT.

**bona fide pipeline measure** see EVALUATIVE PRIMING MEASURE.

**bond** *n.* a relationship between two or more individuals that signifies trust and alliance. In a social context, the existence of bonds between individuals is such that each person feels an attraction toward the other and each expects their association to continue. In psychotherapy, the bond of a THERAPEUTIC ALLIANCE between therapist and client is considered beneficial to the treatment. See also PAIR BOND.

**bondage** *n.* physical restraint of one person by another to arouse sexual pleasure in one or both partners.

**bondage and discipline (B and D)** a phase of sexual BONDAGE that is accompanied by such acts as whipping or spanking. Because of the potential physical danger, the partners usually agree on a signal, called a *safe word*, to be used when the erotic activity exceeds the pleasurable limits. See also SADOMASOCHISM.

**bonding** *n.* the process in which ATTACHMENTS or other close relationships are formed between individuals, especially between mother and infant. An early, positive relationship between a mother and a newborn child is considered by some theorists to be essential in establishing unconditional love on the part of the parent, as well as security and trust on the part of the child. In subsequent development, bonding establishes friendship and trust (see BOND).

**bone age** a measure of the skeletal maturity of an individual based on the stage of ossification of bone, usually determined from X-rays of the hand and wrist.

**bone conduction** the transmission of sound waves to the inner ear through vibrations of bones in the skull.

**bone-conduction testing** an audiological procedure to determine if the hearing loss detected in AIR-CONDUCTION TESTING is a result of conductive or sensorineural factors. It is performed at controlled frequencies with a small bone-conduction vibrator that is attached to a headband and placed on the temporal bone behind the ear. See AIR–BONE GAP.

**bone pointing** see VODOO DEATH.

**Bonferroni *t* test** see DUNN–BONFERRONI PROCEDURE. [Carlo Emilio Bonferroni, (1892–1960), Italian mathematician]

**Bonnet syndrome** see CHARLES BONNET SYNDROME.

**bony labyrinth** see LABYRINTH.

**Boolean algebra** a set of rules that simplify the expression of relatively complex logical statements by describing them in terms of different variables whose outcomes are either true or false. In Boolean algebra, which underlies digital computation systems, words are used to create logical combinations or operators (e.g., *and*, *or*, *not*). [George Boole (1815–1864), British mathematician and logician]

**boomerang effect** a situation in which a persuasive message produces attitude change in the direction opposite to that intended. Boomerang effects occur when recipients generate counterarguments substantially stronger than the arguments contained in the original message.

**booster session** in therapy, particularly COGNITIVE BEHAVIOR THERAPY, any occasional periodic session, after the main sessions are officially ended, in order to reinforce progress or troubleshoot obstacles to continuance of positive changes made during the therapy.

**bootstrapping** *n.* **1.** any process or operation in which a system uses its initial resources to develop more powerful and complex processing routines, which are then used in the same fashion, and so on cumulatively. In LANGUAGE ACQUISITION, for example, the term describes children’s ability to learn complex linguistic rules, which can be endlessly reapplied, from extremely limited data (see QUINIAN BOOTSTRAPPING). **2.** a statistical technique to estimate the variance of a PARAMETER when standard assumptions about the shape of the data set are not met. For example, bootstrapping may be used to estimate the variance of a set of scores that do not follow a NORMAL DISTRIBUTION. In this procedure, a subset of values is taken from the data set, a quantity (e.g., the mean) is calculated, and the values are reinserted into the data; this sequence is repeated a given number of times. From the resulting set of calculated values (e.g., the set of means), the summary value of interest is calculated (e.g., the standard deviation of the mean). See also JACKKNIFE. —**bootstrap** *vb.*

**borderline** **1.** *adj.* pertaining to any phenomenon difficult to categorize because it straddles two distinct classes, showing characteristics of both. Thus, BORDERLINE INTELLIGENCE is supposed to show characteristics of both the average and subaverage categories. See also BORDERLINE DISORDER; BORDERLINE STATE. **2.** *n.* an informal or shorthand designation for someone with BORDERLINE PERSONALITY DISORDER or its symptoms.

**borderline case** see CASE.

**borderline disorder** **1.** see BORDERLINE PERSONALITY DISORDER. **2.** historically, any psychological condition that lies between normality and neurosis, between normality and psychosis, or between normal intelligence and intellectual disability.

**borderline intelligence** a level of measured intellectual performance between average and significantly subaverage intelligence. Some researchers define it as an IQ between 68 and 83, others as any IQ in the 70s, but it is most often associated with IQs in the range 70 to 75. IQs in the borderline range, especially above 75, do not justify a basis for diagnosis of intellectual disability. Also called **bor-**

**derline intellectual functioning; borderline mental retardation.**

**borderline personality disorder** in *DSM-IV-TR* and *DSM-5*, a personality disorder characterized by a long-standing pattern of instability in mood, interpersonal relationships, and self-image that is severe enough to cause extreme distress or interfere with social and occupational functioning. Among the manifestations of this disorder are (a) self-damaging behavior (e.g., gambling, overeating, substance use); (b) intense but unstable relationships; (c) uncontrollable temper outbursts; (d) uncertainty about self-image, gender, goals, and loyalties; (e) shifting moods; (f) self-defeating behavior, such as fights, suicidal gestures, or self-mutilation; and (g) chronic feelings of emptiness and boredom. See also *MENTALIZATION*.

**borderline psychosis** see *BORDERLINE STATE*.

**borderline schizophrenia** historically, a condition in which an individual inconsistently displays symptoms of schizophrenia (e.g., only under circumstances of high stress) but is in touch with reality most of the time.

**borderline state** any condition in which an individual's presenting symptoms are difficult to classify. Historically, borderline state (or **borderline psychosis**) more specifically referred to a condition in which an individual may become psychotic if exposed to unfavorable circumstances but has not currently lost touch with reality.

**boredom** *n.* a state of weariness or ennui resulting from a lack of engagement with stimuli in the environment. It is generally considered to be one of the least desirable conditions of daily life and is often identified by individuals as a cause of feeling depressed. It can be seen as the opposite of *INTEREST* and *SURPRISE*. —**bored** *adj.*

**Borg scale** either of two scales for measuring intensity of sensation and experience, enabling comparisons across people and across tasks. The **RPE scale** (rating of perceived exertion) is used specifically for measuring perceived effort in physical work. The **CR10 scale** (categorical rating with a scale from 1 to 10) is a general method that measures the magnitude of different sensations, including pain, loudness and noise, and brightness. These scales are used in psychophysics as well as in fitness training, ergonomics, and rehabilitation. [Gunnar **Borg**, 20th-century Swedish psychologist]

**Börjeson–Forssman–Lehmann syndrome** a disorder characterized by *MICROCEPHALY*, severe intellectual disability, obesity, seizures, *HYPOGONADISM*, and distinct facial features. Fully expressed primarily in males, it is caused by an X-linked recessive trait mutation in the *PHF6* gene. [Mats Gunnar **Börjeson** (1922– ), Hans Axel **Forssman** (1912–1994), and J. O. Orla **Lehmann** (1927– ), Swedish physicians]

**borna disease** a disease of mammals (especially horses) that is caused by a virus and can be transmitted to humans, typically via intranasal infection. It usually results in *ENCEPHALOPATHY*, which leads to *ATAXIA*, blindness, and other neurological disorders.

**borstal system** a treatment approach for juvenile offenders that emphasizes rehabilitation through hard work and recreation, along with a period of supervision during reentry to society. The approach is named after the prison at Borstal in Kent, England, where it was first introduced in 1908.

**BOS** abbreviation for *BEHAVIORAL OBSERVATION SCALE*.

**Boston Naming Test (BNT)** a fluency test of word retrieval used to evaluate *APHASIA*. Drawings of objects—ranging in difficulty from the commonly encountered (e.g., tree, bed) to the rarely encountered (e.g., sphinx, abacus)—are presented, and the participant provides the name of each object. The BNT was originally developed in 1978 by U.S. neuropsychologist Edith KAPLAN, U.S. clinical psychologist Harold Goodglass (1920–2002), and U.S. neuropsychologist Sandra Weintraub (1946– ). It is often administered with the **Boston Diagnostic Aphasia Examination (BDAE)**, a test that Kaplan and Goodglass first developed in 1972 for use in determining the presence and type of aphasia and in assessing its severity by measuring aspects of an individual's communication ability, including perception (e.g., auditory, visual), processing (e.g., comprehension), and expression (e.g., speech, writing). Both tests remain among the most widely used language-disorder assessment instruments in neuropsychology.

**Boston Process Approach** see *PROCESS APPROACH*.

**BOT** abbreviation for *BRUININKS–OSERETSKY TEST OF MOTOR PROFICIENCY*.

**botany** *n.* the scientific study of plants. —**botanical** *adj.* —**botanist** *n.*

**bottleneck model** any model of attention that assumes the existence of a limited-capacity channel (typically with a capacity of one item) at some specific stage of human information processing. In *LATE-SELECTION THEORIES*, this channel (the “bottleneck”) occurs after stimulus identification.

**bottoming out** a state of despair characterized by financial ruin, suicide attempts, or shattered family and other intimate interpersonal relationships that is frequently experienced by people with severe depression or addiction disorders (e.g., substance abusers and pathological gamblers).

**bottom-up design** an inductive approach to the design of a system or product. Such an approach involves identifying basic user requirements and allowing these to drive the design, as opposed to basing it on existing product designs or abstract models. Compare *TOP-DOWN DESIGN*.

**bottom-up processing** *INFORMATION PROCESSING* in which incoming stimulus data initiate and determine the higher level processes involved in their recognition, interpretation, and categorization. For example, in vision, features would be combined into objects, and objects into scenes, recognition of which would be based only on the information in the stimulus input. Typically, perceptual or cognitive mechanisms use bottom-up processing when information is unfamiliar or highly complex. Also called **bottom-up analysis**; **data-driven processing**. Compare *TOP-DOWN PROCESSING*. See also *SHALLOW PROCESSING*.

**bouffée délirante** see *ACUTE DELUSIONAL PSYCHOSIS*.

**Boulder model** see *SCIENTIST-PRACTITIONER MODEL*.

**boundary** *n.* **1.** a psychological demarcation that protects the integrity of an individual or group or that helps the person or group set realistic limits on participation in a relationship or activity. **2.** in psychotherapy, an important limit that is usually set by the therapist as part of the *GROUND RULES* in treatment. Boundaries may involve areas of discussion (e.g., the therapist's personal life is off limits) or physical limits (e.g., rules about touching), which are guided by ethical codes and standards. Respect for boundaries by both the therapist and client is an important concept in the therapeutic relationship.



**boundary ambiguity** uncertainty that arises in a family system when an individual's status, role, or family membership is brought into question, most often as a result of separation, divorce, and remarriage. See PERMEABLE FAMILY.

**boundary detector** **1.** any of the RETINAL GANGLION CELLS that respond to a sharp edge in a receptive field, regardless of brightness or contrast on either side of the edge. These cells are most common in the retinas of frogs. See also FEATURE DETECTOR. **2.** any of a class of computational algorithms designed to detect edges in artificial vision or word segmentation in speech processing.

**boundary issues** **1.** ethical issues relating to the proper limits of a professional relationship between a provider of services (e.g., a physician or a psychotherapist) and his or her patient or client, such that the trust and vulnerability of the latter are not abused (see BOUNDARY). A particular area of concern is PROFESSIONAL–CLIENT SEXUAL RELATIONS. **2.** in health care, issues relating to the demarcations between different areas and levels of expertise and questions of who is best qualified to give certain types of treatment or advice.

**boundary spanning** in organizational settings, identifying information external to the organization, selectively disseminating that information within the organization, and sending information known within the organization out into the external environment. Individuals who occupy boundary spanning roles, such as sales or account managers, both filter information and facilitate information transmission.

**boundary system** in GENERAL SYSTEMS THEORY, the semipermeable boundaries between living systems, permitting information to flow in either direction but posing the question of how much interpenetration and interdependence are feasible in a given social system. See also EGO BOUNDARY.

**bounded rationality** decision making in which the processes used are rational within the constraints imposed by (a) limitations in the individual's knowledge; (b) human cognitive limitations generally; and (c) empirical factors arising from the complex, real-life situations in which decisions have to be made. The concept was introduced by Herbert A. SIMON as a corrective to the assumption of classical economic theory that individuals can and will make ideally informed and rational decisions in pursuit of their own self-interest (see RATIONAL-ECONOMIC MAN). See PROCEDURAL RATIONALITY; SUBSTANTIVE RATIONALITY. See also SATISFICE.

**bound energy** in psychoanalytic theory, PSYCHIC ENERGY that is located within the ego and focused on the individual's external reality. Bound energy is associated with the SECONDARY PROCESSES and is contrasted with the FREE ENERGY of the id.

**bound morpheme** in linguistics, a MORPHEME that can occur only in combination with other morphemes. For example, the morpheme for the past tense *-ed* can only occur with a verb stem, as in *kissed*. Compare FREE MORPHEME.

**bourgeoisie** *n.* see MIDDLE CLASS.

**bowel disorder** any disorder of the small or large intestine, which frequently occurs as a response to stress and anxiety (e.g., chronic constipation, IRRITABLE BOWEL SYNDROME).

**bowel incontinence** see FECAL INCONTINENCE.

**Bowen family systems theory** see FAMILY SYSTEMS THEORY.

**box-and-whisker plot** a graphical display of the central value, variance, and extreme values in a data set. A rectangle (box) is drawn along the vertical *y*-axis of the plot, which shows the range of data values. The length of the box indicates the middle 50% of scores and its two ends indicate the upper and lower HINGES. Lines (whiskers) extending outward from the box denote variation in the upper and lower 25% of scores, while a separate line within the box indicates the score that falls in the very middle of the set (i.e., the MEDIAN). Stars or other single points indicate extreme scores. A box-and-whisker plot is useful in EXPLORATORY DATA ANALYSIS for indicating whether a distribution is skewed and whether the data set includes any OUTLIERS; it can also be used to compare data sets when large numbers of observations are involved. Also called **boxplot**.

**Box–Cox transformation** a TRANSFORMATION that enables the relationship between one or more predictor variables and an outcome variable to be described by a summative formula and thus to be plotted by a straight line when graphed. Based on MAXIMUM LIKELIHOOD estimation, the technique transforms the outcome variable to obtain linearity and approximate NORMALITY in a data set. Compare BOX–TIDWELL TRANSFORMATION. [George E. P. **Box** (1919–2013) and David Roxbee **Cox** (1924– ), British statisticians]

**boxed warning** an alert strongly recommended by the U.S. FOOD AND DRUG ADMINISTRATION to be included in the LABELING of medications that have been found to have particularly serious or life-threatening side effects or that should be prescribed only under certain circumstances or to certain patient populations. The warning must be prominently displayed and in bold type. Also called **black box warning**.

**boxer's dementia** see DEMENTIA PUGILISTICA.

**box-score method** a method of summarizing results from multiple studies of the same general research question that considers both statistically meaningful and non-meaningful results but ignores the magnitude of the research findings (e.g., the size of a treatment effect). META-ANALYSIS generally is preferred over the box-score method.

**Box–Tidwell transformation** a TRANSFORMATION used to modify a set of predictor variables so that the relationship between those predictors and the outcome variable resembles a straight line. It is similar to the BOX–COX TRANSFORMATION for correcting nonlinearity but instead is applied to the independent variables (predictors) involved. [George E. P. **Box** (1919–2013), British statistician; Paul William **Tidwell** (1926–2013), U.S. chemist and statistician]

**BP** abbreviation for Bereitschaftspotential. See READINESS POTENTIAL.

**BPA** abbreviation for BISPHENOL A.

**BPRS** abbreviation for BRIEF PSYCHIATRIC RATING SCALE.

**BPS** abbreviation for BRITISH PSYCHOLOGICAL SOCIETY.

**BRAC** abbreviation for BASIC REST–ACTIVITY CYCLE.

**brace** *n.* a device that supports or maintains the correct positioning of a part of the body, such as a limb, a joint, or

the spine. Braces may be designed to permit flexion and motion and are typically intended for permanent or long-term use. They are distinct from splints, which are used to temporarily immobilize or protect a part of the body.

**brachial plexus** a network of nerves that carries signals from the spinal cord to the shoulder, arm, and hand. Injury to the brachial plexus can impair control of these parts.

**brachium** *n.* (*pl.* **brachia**) **1.** the upper arm, extending from the shoulder to the elbow. **2.** in anatomy, a structure that resembles an arm, such as the BRACHIUM CONJUNCTIVUM. —**brachial** *adj.*

**brachium conjunctivum** the superior CEREBELLAR PEDUNCLE, a band of fibrous tissue extending from each hemisphere of the cerebellum to the pons.

**Brachmann-de Lange syndrome** see CORNELIA DE LANGE SYNDROME. [described in 1916 by Winfried **Brachmann** (1888–c. 1915), German physician, and in 1933 by Cornelia **de Lange** (1871–1950), Dutch pediatrician]

**brachy-** *combining form* short.

**brachycephalic** *adj.* see CEPHALIC INDEX. —**brachycephaly** *n.*

**brachymorph** *n.* a body type characterized by an abnormally short, broad physique. Also called **brachytype**. —**brachymorphic** *adj.*

**brachyskeletal** *adj.* having abnormally short bones, particularly short leg bones. Also called **brachyskelic**.

**bracketed morality** a temporary suspension of the usual moral obligation to consider equally the needs and desires of all persons that is due to contextual factors in a particular situation. Such a suspension occurs, for example, when participating in sporting events (see GAME REASONING).

**brady-** *combining form* slow.

**bradyarthria** *n.* see BRADYLALIA.

**bradycardia** *n.* see ARRHYTHMIA.

**bradyesthesia** *n.* slowed or dulled sensation.

**bradykinesia** *n.* abnormal slowness in the execution of voluntary movements. Also called **bradykinesis**. Compare HYPOKINESIS. —**bradykinetic** *adj.*

**bradylalia** *n.* abnormal slowness or hesitation in speech. Also called **bradyarthria**; **bradylogia**.

**bradylexia** *n.* extreme slowness in reading that is not attributable to intellectual impairment. —**bradylexic** *adj.*

**bradylogia** *n.* see BRADYLALIA.

**bradyrhythmia** *n.* slowness of the rhythms of the heart.

**brahmacharya** *n.* **1.** continence or chastity (Sanskrit). In the Hindu tradition (see HINDUISM), the term signifies continence in thought, word, and deed, which is one of the five virtues of the first stage of Raja-Yoga. It is also used to denote an ordination ceremony for novice monks as well as the first of the four stages into which human life is divided according to Vedic tradition. **2.** in BUDDHISM, holy conduct of life. The term signifies a life lived in harmony with Buddhist rules of discipline and is used to describe the chaste lifestyle of a Buddhist monk.

**braid cutting fetish** a fetish in which a person's hair is cut as part of sexual activity.

**Braid's strabismus** a form of STRABISMUS in which

hypnosis can be induced by causing the eyes to converge and turn upward. [James BRAID]

**braille** *n.* a system of letters, numbers, punctuation marks, and scientific and musical symbols adapted as a written language for people with severe visual impairment, using combinations of raised dots that can be touched. Each character comprises a specific pattern of six dots organized in two parallel vertical columns. Prefix symbols are used to indicate capitalization and numbers, and various other conventions are used to represent more than 200 common words or recurring letter combinations. [introduced in 1829 by Louis **Braille** (1809–1852), French teacher and inventor]

**brain** *n.* the enlarged, anterior part of the CENTRAL NERVOUS SYSTEM within the skull. The young adult human brain weighs about 1,450 g, and its outer layer (the CEREBRAL CORTEX) contains over 10 billion nerve cells. The brain develops by differentiation of the embryonic NEURAL TUBE along an anterior–posterior axis to form three main regions—the FOREBRAIN, MIDBRAIN, and HINDBRAIN—that can be further subdivided on the basis of anatomical and functional criteria. The cortical tissue is concentrated in the forebrain, and the midbrain and hindbrain structures are often considered together as the BRAINSTEM. The functions of the brain are discussed in entries for the different parts of the brain. Also called **encephalon**. See also BRAIN LOCALIZATION THEORY; EVOLUTION OF THE BRAIN; SPLIT BRAIN.

**brain abscess** a circumscribed collection of pus that may occur in any part of the brain and, depending on its location, may produce deficits in any neurological function. Brain abscesses are often secondary to infections.

**brain atlas** a collection of illustrations of details of brain structure.

**brain atrophy** see CEREBRAL ATROPHY.

**brain bank** a program in which the brains of deceased people with specific neurological disorders are gathered to enable scientists to conduct intensive postmortem histopathological studies.

**brain-based learning** see NEUROEDUCATION.

**brain center** any of various regions of the brain that have specific functions, such as the visual centers and the (alleged) hunger center.

**brain comparator** a theoretical structure in the brain that compares an intended movement with sensory feedback that results from the movement (see COMPARATOR). The cerebellum is believed to act as a brain comparator to coordinate and calibrate movements in response to visual and somatosensory feedback. See also COROLLARY DISCHARGE.

**brain-computer interface (BCI)** a system that translates the electrical activity of the brain into signals controlling external displays and devices, such as cursors on computer screens, Internet browsers, robotic arms, switches, or prostheses. This muscle-independent arrangement aims to help people with motor functions severely limited by injuries, progressive neurodegenerative diseases, or other conditions (e.g., LOCKED-IN SYNDROME) to communicate, manipulate objects in the environment, and otherwise enhance their independence and quality of life. BCI technology generally relies on changes in particular aspects of user-specific electroencephalographic rhythms, including the P3 COMPONENT, SENSORIMOTOR RHYTHMS, slow CORTI-

CAL POTENTIALS, and VISUAL EVOKED POTENTIALS. Some interfaces, however, are based on other types of electrophysiological activity that require different measurement techniques (e.g., ELECTROCORTICOGRAPHY, FUNCTIONAL MAGNETIC RESONANCE IMAGING, MAGNETOENCEPHALOGRAPHY). Also called **brain-machine interface (BMI)**.

**brain concussion** see CONCUSSION.

**brain contusion** see CEREBRAL CONTUSION.

**brain damage** injury to the brain. It can have various causes, including prenatal infection, birth injury, head injury, toxic agents, brain tumor, brain inflammation, severe seizures, certain metabolic disorders, vitamin deficiency, intracranial hemorrhage, stroke, and surgical procedures. Brain damage is manifested by impairment of cognitive, motor, or sensory skills mediated by the brain.

**brain death** a state of extreme and irreversible unconsciousness in which neurological activity and vital physiologic functions have ceased, as opposed to **cardiac death**, in which cessation of natural cardiac activity and breathing indicates a patient is deceased. Although several professional organizations in neurology and related fields have specified their own guidelines for determining brain death, globally standardized criteria do not yet exist. For example, brainstem death is considered sufficient in the United Kingdom, whereas whole-brain death is required in the United States. Despite such variability, many clinicians (as well as legal statutes) establish brain death through the concurrent presence of the following: nonresponsiveness to noxious or other stimuli, absence of breathing, absence of reflexes and spontaneous movement, and absence of electroencephalogram activity. Exact methods of evaluating these factors differ significantly across facilities—for example, different U.S. hospitals require different ancillary tests for cerebral blood flow and other characteristics, including ANGIOGRAPHY, POSITRON EMISSION TOMOGRAPHY, SENSORY EVOKED POTENTIAL recording, SINGLE PHOTON EMISSION COMPUTED TOMOGRAPHY, and sonography (see ULTRASOUND). Additionally, medical conditions and other complicating factors that temporarily depress brain function, such as hypothermia, drug overdose, and hyperglycemia or hypoglycemia, must be excluded before a definitive determination of brain death can be made. It must also be distinguished from the similar conditions of COMA and a VEGETATIVE STATE. Also called **cerebral death; irreversible coma**.

**brain-derived neurotrophic factor (BDNF)** a NEUROTROPHIN thought to be important in regulating synaptic plasticity, neurogenesis, and neuronal survival. BDNF acts as a neurostimulatory factor, helping to produce and maintain the complexity of neurons. It has been linked to some psychiatric disorders.

**brain disease** any degenerative, metabolic, and infectious disease that leads to BRAIN DAMAGE.

**brain disorder** **1.** any condition marked by disruption of the normal functioning of the brain. **2.** an older term for an acute or chronic mental disorder caused by or associated with impairment of brain function and characterized by mild to severe impairment of cognition and mood. Also called **brain syndrome**.

**brain electrical activity mapping (BEAM)** a system of computerized ELECTROENCEPHALOGRAPHY used to analyze and display electrical activity of the brain.

**brain fog** a CULTURE-BOUND SYNDROME originating in

west Africa and most often experienced by high school or college students. Symptoms typically include difficulties with concentration, memory, and understanding information; feelings of pain, tightness, and burning around the head and neck; blurred vision; and tiredness associated with excessive thinking.

**brain fingerprinting** a forensic technique that uses neuroimaging (e.g., FUNCTIONAL MAGNETIC RESONANCE IMAGING) to match brain activity of control subjects with that of possible criminal suspects when both are viewing crime-scene details. The technique is based on the theory that certain sensory-perceptual brain activity would be expected to become activated in an individual familiar with the crime's details but not in an individual unfamiliar with them. [developed by Lawrence A. Farwell, U.S. scientist]

**brain graft** the surgical transplantation or implantation of brain tissue to replace a damaged part or compensate for a defect.

**brain growth** the increase in size, mass, and complexity of the brain. In humans, the brain grows very rapidly in the fetus and during the early postnatal years, reaching its maximum mass at about 20 years, after which there is a slow decline. Some regions of the brain grow more rapidly than others, well into the teenage years.

**brain imaging** study of the anatomy or activity of the brain through the intact skull by noninvasive computerized techniques, such as MAGNETIC RESONANCE IMAGING, COMPUTED TOMOGRAPHY, and POSITRON EMISSION TOMOGRAPHY. See also NUCLEAR IMAGING.

**brain injury** see BRAIN DAMAGE; BRAIN TRAUMA.

**brain lesion** any damage to an area of brain tissue caused by injury, disease, surgery, tumor, stroke, or infection. Also called **cerebral lesion**.

**brain localization theory** any of various theories that different areas of the brain serve different functions. Since the early 19th century, opinion has varied between notions of highly precise localization and a belief that the brain, or large portions of it, function as a whole. In 1861, Paul BROCA deduced from localized brain lesions that the speech center of the brain is in the left frontal lobe (see BROCA'S AREA). Since then, many techniques, including localized electrical stimulation of the brain, electrical recording from the brain, and BRAIN IMAGING, have added information about localization of function in the brain. For many investigators, however, the concept of extreme parcellation of functions has given way to concepts of distributed control by collective activity of different regions. See also MASS ACTION.

**brain-machine interface (BMI)** see BRAIN-COMPUTER INTERFACE.

**brain mapping** the creation of a visual representation of the brain in which different functions are assigned to different brain regions. Mapping may be based on a variety of sources of information, including effects of localized brain lesions, recording electrical activity of the brain, and BRAIN IMAGING during various behavioral states. See also BRAIN LOCALIZATION THEORY.

**brain nucleus** a cluster of cells within the cerebrum or cerebellum concerned with a specific function or functions. See NUCLEUS.

**brain pathology** any disorder, disease, or pathological

condition affecting the brain (e.g., tumor, stroke, traumatic injury). See also NEUROPATHOLOGY.

**brain plasticity** **1.** the capacity of the brain to compensate for losses in brain tissue caused by injury or disease. See also RECOVERY OF FUNCTION. **2.** the capacity of the brain to change as a function of experience. The term *plasticity* in this sense was first used by William JAMES in 1890.

**brain potential** the electric potential of brain cells. See ELECTROENCEPHALOGRAPHY.

**brain research** investigation of the structure and functions of the brain, including, for example, (a) the administration of psychological and neurological tests after lesions have occurred in various areas; (b) the observation or measurement of the effects of stimulation or ablation of parts of the brain; (c) the use of gross and microscopic anatomical and histopathological techniques; (d) the study of the nature and functions of chemicals involved in neurotransmission; and (e) the use of ELECTROENCEPHALOGRAPHY and BRAIN IMAGING techniques.

**brain reserve** a hypothesis proposing that some adult brains can tolerate pathological changes without overt signs of disturbance because of the capacity of remaining neurons in the central nervous system to compensate for damaged or destroyed tissue. Thus, a person with a high brain reserve can sustain a greater amount of brain injury or deterioration before manifesting symptoms than a person with low brain reserve can. Implicit to this concept is the notion of a critical threshold level of functioning neurons below which normal activities can no longer be maintained and symptoms of disorder appear.

The validity of this hypothesis has been difficult to establish empirically, but the concept has been influential within neurology and cognitive science since it was first proposed to explain the observation that many individuals with Alzheimer's disease who had extensive AMYLOID PLAQUES and NEUROFIBRILLARY TANGLES in their brains nonetheless showed few decrements in their intellectual abilities. This same discrepancy has since been observed in other types of dementia, Parkinson's disease, and other neurological disorders.

Indeed, the lack of a direct relationship between the degree of brain pathology and the clinical manifestation of that damage makes it difficult to diagnose these conditions in their early stages during which degenerative alterations of cerebral anatomy have begun accumulating and intervention would be most effective. Various OPERATIONAL DEFINITIONS of brain reserve capacity are used in studies, including overall brain volume, component structure volumes, head circumference, cerebral glucose metabolism, cortical thickness, the number of brain neurons, the density of their interconnections, regional cerebral blood flow, neural transmission speed, and various parameters of the sensory EVOKED POTENTIAL. The term *brain reserve* at times is used interchangeably with COGNITIVE RESERVE, despite the differing theoretical emphases of the two concepts. Also called **neural reserve**. See also FUNCTIONAL PLASTICITY.

**brain scan** any of a variety of techniques designed either to reveal structural or functional abnormalities of the diseased brain or to measure activity of the healthy brain. See BRAIN IMAGING.

**brain self-stimulation** see INTRACRANIAL STIMULATION.

**brain splitting** surgical separation of the cerebral hemispheres of the brain. See COMMISSUROTOMY; SPLIT BRAIN.

**brainstem** *n.* the part of the brain that connects the cerebrum with the spinal cord. It includes the MIDBRAIN, PONS, and MEDULLA OBLONGATA and is involved in the automatic control of visceral activity, such as salivation, respiration, heartbeat, digestion, and other so called VEGETATIVE functions.

**brainstem auditory evoked response** an EVENT-RELATED POTENTIAL recorded from the brainstem in response to an auditory stimulus (see AUDITORY EVOKED POTENTIAL). Such recordings are used to diagnose abnormalities of the nervous system, hearing deficits in infants and young children, and neurological malfunctioning. Also called **auditory brainstem evoked response**; **auditory brainstem response (ABR)**; **brainstem evoked potential**.

**brainstem reticular formation** see RETICULAR FORMATION.

**brain stimulation** stimulation of specific areas of the brain, for example, by ELECTRICAL STIMULATION or TRANSCRANIAL MAGNETIC STIMULATION, as a means of determining their functions and their effects on behavior and as a therapeutic technique. Also called **cerebral stimulation**.

**brainstorming** *n.* a problem-solving strategy in which ideas are generated spontaneously and uninhibitedly, usually in a group setting, without any immediate critical judgment about their potential value. See also CREATIVE THINKING; DIVERGENT THINKING. —**brainstorm** *vb.*

**brain syndrome** see BRAIN DISORDER.

**brain trauma** physical injury to the brain. It can be produced by, for example, a blow to the head, a gunshot wound, or a CEREBROVASCULAR ACCIDENT. See CONCUSSION; HEAD INJURY.

**brain tumor** any abnormal tissue growth (see NEOPLASM) within the confines of the skull. Damage may occur by the destruction of healthy tissue or through increased INTRACRANIAL PRESSURE as there is little room for the tumor to grow within the skull without compressing healthy tissue and interfering with the flow of blood and nutrients into the brain. Brain tumors can occur at any age, producing initial symptoms of headache, nausea, or sudden vomiting without apparent cause. As the tumor progresses, the patient may experience disturbances of vision, hearing, and smell, loss of coordination, changes in mental status, weakness, and paralysis. Seizures sometimes are caused by a tumor. See also GLIOMA; MENINGIOMA.

**brainwashing** *n.* a broad class of intense and often coercive tactics intended to produce profound changes in attitudes, beliefs, and emotions. Targets of such tactics have typically been prisoners of war and members of religious cults. See also PSYCHOLOGICAL KIDNAPPING.

**brainwave entrainment** the natural synchronization of brain waves to a frequency or rhythm presented via music or some other environmental stimulus (e.g., noise). Some researchers believe that brainwave entrainment can be used to induce changes in mood.

**brain waves** spontaneous, rhythmic electrical impulses emanating from different areas of the brain. Electroencephalographic brain-wave recordings are used to study SLEEP STAGES and cognitive processes. According to their frequencies, brain waves are classified as ALPHA

WAVES (8–12 Hz), BETA WAVES (13–30 Hz), DELTA WAVES (1–3 Hz), GAMMA WAVES (31–80 Hz), or THETA WAVES (4–7 Hz). The first substantial account of brain waves was given in 1929 by German neuropsychiatrist Hans Berger (1873–1944).

**brain-wave therapy** an alternative or adjunctive therapy in which ALPHA WAVES and THETA WAVES are stimulated because they are posited to have a vital role in learning and memory and, hence, in therapeutic INSIGHT.

**brain weight** the weight of a brain, which is about 1,450 g for a young adult human. Brain weights for elephants and whales may exceed 7,000 g and 9,000 g, respectively. Human brain sizes usually increase until around the age of 20, then gradually diminish. Brain weight correlates significantly (on average,  $r = 0.4$ ) with intelligence. See also BRAIN GROWTH.

**branching** *n.* **1.** a form of PROGRAMMED INSTRUCTION that provides additional steps, or branches, to be followed if the standard teaching material has not been adequately mastered to a given level of proficiency. Correct and incorrect answers lead to branches of new material so that students complete different sequences depending on how well they perform. Also called **branching program**. **2.** in linguistics, a method of analyzing the formal structure of a sentence by representing it diagrammatically as a treelike structure with an organized hierarchy of branches and subbranches. In PHRASE-STRUCTURE GRAMMAR, a TREE DIAGRAM of this kind (also known as a **phrase marker**) is often used to illustrate the set of phrase-structure rules that generates a particular grammatical sentence: The diagram so produced will also be a CONSTITUENT analysis of the sentence in question. Theories of branching have been used in predicting psycholinguistic phenomena and in creating LINGUISTIC TYPOLOGIES.

**Brandeis brief** a summary presented to the U.S. Supreme Court in the case of *Muller v. Oregon* in 1908 that outlined the damaging effects on women of long working hours. It is considered to be one of the first examples of a legal brief that relies on extensive documentation of social science research in its argument. [Louis Dembitz Brandeis (1856–1941), U.S. Supreme Court justice]

**branding** *n.* the process of creating a clear identity for a product, service, or organization through marketing strategies that include TRADEMARKS, packaging, and messaging that seek to underscore significant differences between the branded entity and the offerings of competitors. The goal of branding is to attract and retain loyal customers.

**brand name** the unique identifier that characterizes a product as belonging to a particular manufacturer or distributor. Examples are Starbucks coffee and Nike athletic shoes. Brand names enable consumers to differentiate between many products that serve the same function. A particular brand name may carry expectations of value, reliability, service, and perhaps status for the user. See also GREEN BRAND.

**brand-use survey** a survey in which consumers are interviewed to determine whether or not they purchased a particular brand of product that was featured in a specific advertising appeal. The brand-use survey may be accompanied by use of the PANTRY-CHECK TECHNIQUE to validate results of the survey.

**Brattleboro rat** a rat that has a mutation in the gene for VASOPRESSIN that prevents the animal from producing

functional hormone. Brattleboro rats show symptoms of DIABETES INSIPIDUS.

**bravery** *n.* see COURAGE.

**Brawner rule** see AMERICAN LAW INSTITUTE MODEL PENAL CODE INSANITY TEST.

**Brazelton Neonatal Behavioral Assessment Scale** an instrument used in both research and clinical settings to assess the neurological and behavioral status of newborns and infants up to 2 months old, as indicated by their responses to various stimuli (a light directed to the eye, a moving ball, a rattle, etc.). The Brazelton scale currently contains 14 neurologically and 26 behaviorally oriented items; the former are graded on a 4-point scale of intensity of response, and the latter on a 9-point scale. Originally developed in 1973, the scale was revised in 2000. Also called **Neonatal Behavioral Assessment Scale (NBAS)**. [Thomas Berry Brazelton (1918– ), U.S. pediatrician]

**BRCA1 and BRCA2** the first two major genes found to be associated with susceptibility to breast and ovarian cancer. Cloned respectively in 1994 and 1995, *BRCA1* and *BRCA2* were the first major cancer genes for which widespread genetic testing was done; within several years, direct screening became available. The risk of breast cancer in women with mutations in one of these genes ranges from 56% to 85%, and this type of breast cancer tends to occur at a younger age than do most other types. Risk of ovarian cancer is also greatly increased. *BRCA2* mutations are also associated with increased rates of male breast cancer, although these rates remain low (around 1% of all breast cancers). Because of incomplete PENETRANCE of these genes, a small percentage of mutation CARRIERS never develop breast, ovarian, or associated cancers. See also RISK PERCEPTION.

**breadth-first search** a GRAPH search strategy that considers states in a graph recursively: If the present state is not the goal state, then its sibling state is considered. If this sibling is not the goal state, then its sibling is considered. If there are no more siblings, then the first child of the first state is considered. This process continues until either a goal state is found or there are no further states to examine. States, their siblings, and their children are usually considered in a left-to-right format. Breadth-first search is often organized by a “queue” or “first-in is first-out” data structure.

**breakthrough** *n.* **1.** a significant, sometimes sudden, forward step in therapy, especially after an unproductive plateau. **2.** a major or significant advance in knowledge, research, or treatment.

**breast** *n.* the human mammary (milk-producing) gland, consisting of milk-secreting cells and their ducts, fat cells, and connective tissue. Enlarged breasts in adult females are a characteristic of the human species that is not shared by other mammals; it may result from SEXUAL SELECTION. Enlarged breasts also may occur in human males (see GYNecomastia).

**breast envy** in the psychoanalytic theory of Melanie KLEIN, the idea that infants envy the nourishing capacity and creative power of the mother’s breast. Such envy may later be transformed into PENIS ENVY.

**breast-feeding** see NURSING.

**breast-phantom phenomenon** the illusion that an amputated breast is still present, often manifested as a tin-

gling or, occasionally, painful sensation in the area of the missing organ; in some cases, the individual may even deny that the breast has been removed. It is thought that the brain's representation of the breast remains intact and, in the absence of normal SOMESTHETIC STIMULATION, becomes active either spontaneously or as a result of stimulation from other brain tissue. See also PHANTOM LIMB.

**breathing** *n.* the mechanism for ventilating the lungs, consisting of cycles of alternate inhalation and exhalation. See also HYPERVENTILATION; INSPIRATION–EXPIRATION RATIO; RESPIRATION.

**breathing-related sleep disorder** in *DSM–IV–TR*, a primary SLEEP DISORDER marked by excessive sleepiness or insomnia arising from sleep disruption due to breathing difficulties during sleep, for example, SLEEP APNEA. In *DSM–5*, the classification refers to three specific disorders: **obstructive sleep apnea hypopnea** (characterized by episodes of absent or reduced breathing during sleep and by daytime sleepiness); **central sleep apnea** (repeated episodes of absent or reduced breathing caused by variability in respiratory control during sleep); and **sleep-related hypoventilation** (decreased respiration during sleep). See DYSSOMNIA.

**breathing retraining** a technique used in BEHAVIOR THERAPY and COGNITIVE BEHAVIOR THERAPY, particularly in the treatment of hyperventilation in panic and other anxiety disorders. The technique teaches clients slow diaphragmatic breathing through various methods, including therapist modeling and corrective feedback. See also PROGRESSIVE RELAXATION; STRESS MANAGEMENT.

**breathwork** *n.* see REBIRTHING.

**breathy voice** a type of PHONATION in which the vocal cords vibrate as in normal voicing, but the glottal closure is incomplete, thus allowing air to leak between the cords throughout the vibration cycle. Examples are heard in normal articulation in the [h] sound in such words as *behind* and *hippopotamus*. When the voice is both weak and breathy, the condition is sometimes described as **phonasthenia**.

**breech birth** see FETAL PRESENTATION.

**breed** *n.* a subtype within a SPECIES sharing certain characteristics that are distinct from other members of the species. German shepherds and Chihuahuas, for example, are different breeds of dogs. The term is typically used for variations that have been induced through selective breeding, as distinguished from **subspecies**, which are naturally occurring variations within a species.

**breeding behavior** see MATING BEHAVIOR; SEXUAL BEHAVIOR.

**bregma** *n.* the location on the top of the skull that marks the junction of the sutures (immovable joints) between the FRONTAL bone and the two parietal bones (forming the sides of the skull). It is used as a landmark for stereotactic and other procedures (see STEREOTAXY).

**bride price** in some cultures, a payment to the bride's family made by the future husband or his family. Also called **bridewealth**. Compare DOWRY.

**bridge to reality** see REMOTIVATION.

**bridging** *n.* a method used in MULTIMODAL THERAPY in which the therapist first focuses on the client's preferred aspect of treatment (e.g., cognitions) before moving to another aspect (e.g., sensations) that the therapist believes may be more salient.

**brief group therapy** group psychotherapy conducted on a short-term (time- or session-limited) or CRISIS-INTERVENTION basis and focused clearly upon a specific treatment goal. See TIME-LIMITED PSYCHOTHERAPY.

**brief intensive group cognitive behavior therapy** a form of COGNITIVE BEHAVIOR THERAPY conducted in a group setting over a relatively brief period of time but in lengthy sessions (e.g., all day) and often on consecutive days (e.g., weekends). The therapy is typically used to treat anxiety disorders, particularly panic disorder.

**Brief Psychiatric Rating Scale (BPRS)** a system of evaluating the presence and severity of clinical psychiatric signs on the basis of 24 factors, such as bizarre behavior, hostility, emotional withdrawal, and disorientation. Each factor is rated on a 7-point scale ranging from *not present* to *extremely severe*, based on the judgments of trained observers. [introduced in its original version in 1962 by U.S. psychiatrist John E. Overall and U.S. clinical psychologist Donald R. Gorman]

**brief psychodynamic psychotherapy** a set of time-limited PSYCHODYNAMIC PSYCHOTHERAPY approaches intended to enhance client self-awareness and understanding of the influence of the past on present behavior. One particularly important issue is identified as the central focus for the treatment, thus creating a structure and establishing a goal for the sessions. Rather than allowing the client to associate freely and discuss seemingly unconnected issues, the brief psychodynamic therapist is expected to be fairly active in keeping the session focused on the main issue. The number of sessions varies from one approach to another, but the therapy is typically considered to involve no more than 25 sessions. Also called **short-term psychodynamic psychotherapy**. [originally developed by Hungarian psychoanalyst Franz Alexander (1891–1964) and U.S. physician Thomas Morton French (b. 1892)]

**brief psychotherapy** any form of psychotherapy intended to achieve positive change during a short period (generally 10–20 sessions). Brief psychotherapies rely on active techniques of inquiry, focus, and goal setting and tend to be symptom specific. They may be applied on an individual or group level and are used in the treatment of a variety of behavioral and emotional problems. There are numerous different types, such as brief COGNITIVE BEHAVIOR THERAPY, brief PLAY THERAPY, BRIEF PSYCHODYNAMIC PSYCHOTHERAPY, FOCAL PSYCHOTHERAPY, and INTERPERSONAL PSYCHOTHERAPY. Also called **short-term psychotherapy**. Compare INTENSIVE PSYCHOTHERAPY.

**brief psychotic disorder** in *DSM–IV–TR* and *DSM–5*, a disturbance involving the sudden onset of at least one psychotic symptom (e.g., incoherence, delusions, hallucinations, or grossly disorganized or catatonic behavior). The condition is often accompanied by emotional turmoil and lasts from 1 day to 1 month, with complete remission of all symptoms and a full return to previous levels of functioning. It may develop following a period of extreme stress, such as the loss of a loved one. Formerly called **brief reactive psychosis**.

**brief stimulus therapy (BST)** ELECTROCONVULSIVE THERAPY (ECT) in which the electric current is modified significantly to decrease the duration of stimulus needed to produce a seizure. Some researchers and clinicians claim that this technique not only achieves satisfactory clinical results comparable to those of standard ECT but also results in a shorter duration of confusion or memory impair-

ment than occurs with the standard treatment (see ECT-INDUCED AMNESIA). Also called **brief stimuli therapy**; **brief stimulus technique**.

**Brief Visuospatial Memory Test** a measure designed to assess learning, storage, and retention of repeated visual information. In three successive LEARNING TRIALS, the examinee is shown the same six geometric figures and then asked to draw them from memory. In a 25-minute DELAYED RECALL trial that follows, the examinee is again asked to draw the figures from memory. There are six different forms to enable repeat testing.

**bright light therapy** see PHOTOTHERAPY.

**brightness** *n.* the perceptual correlate of light intensity. The brightness of a stimulus depends on its amplitude (energy), wavelength, the ADAPTATION state of the observer, and the nature of any surrounding or intervening stimuli. See LUMINANCE; BRIGHTNESS CONTRAST.

**brightness adaptation** an apparent decrease in the intensity of a stimulus after exposure to a high level of incident illumination. For example, the inside of a house appears very dim to someone coming in from a snow-covered garden.

**brightness constancy** the tendency to perceive a familiar object as having the same brightness under different conditions of illumination. For example, a piece of white paper has a similar brightness in daylight as it does at dusk, even though the energy it reflects may be quite different. Brightness constancy is one of the PERCEPTUAL CONSTANCIES. Also called **lightness constancy**. See also COLOR CONSTANCY; OBJECT CONSTANCY.

**brightness contrast** the apparent enhanced difference in brightness resulting from simultaneous stimulation by two stimuli of differing brightness. For example, a gray disk looks darker on a white background than on a black background. Also called **lightness contrast**.

**brightness discrimination** the ability to distinguish differences in brightness. This appears to vary according to the wavelength of light.

**brightness perception** the ability to form impressions about the light intensity of a stimulus. See BRIGHTNESS; BRIGHTNESS ADAPTATION; BRIGHTNESS CONTRAST.

**brightness threshold** the minimum light intensity of a designated wavelength that can be detected against a surrounding field.

**brilliance** *n.* a visual quality related to BRIGHTNESS but with an added dimension of salience (see SALIENT). Brilliant stimuli are not just bright, they seem to radiate brightness. —**brilliant** *adj.*

**bril scale** a decibel (dB) scale used to measure the perceived brightness of stimuli, developed from DIRECT SCALING methods, in which 0 dB approximates the ABSOLUTE THRESHOLD. A **bril** is a unit of LUMINANCE representing the brightness perceived by a typical observer when the brightness is 40 dB above the 0 dB reference level; it is equivalent to one hundredth of a millilambert.

**Briquet's syndrome** a former name for SOMATIZATION DISORDER. [Paul Briquet (1796–1881), French physician, who provided the first systematic description of its characteristics in 1859]

**Brissaud's infantilism** a developmental anomaly in which infantile mental and physical characteristics con-

tinue past puberty. The condition is due to the result of faulty functioning of the thyroid gland. Also called **infantile myxedema**; **Brissaud-Meige syndrome**. [Edouard Brissaud (1852–1909) and Henry Meige (1866–1940), French physicians]

**British associationism** see ASSOCIATIONISM.

**British Manual Alphabet** see FINGERSPELLING.

**British Museum algorithm** a problem-solving strategy in which all possible solutions are tried one by one, beginning with those involving the fewest steps. It is so named from the facetious idea that, given enough time, an army of monkeys banging on typewriters would eventually write all the books in the British Museum. See ALGORITHM. See also BRUTE FORCE; EXHAUSTIVE SEARCH.

**British Psychological Society (BPS)** a professional organization, founded in 1901, that is the representative body for psychologists and psychology in the United Kingdom. By royal charter, it is charged with national responsibility for the development, promotion, and application of psychology for the public good.

**broadband** *n.* any of a number of transmission media with very high bit-rate capacity, including fiber optics, cable modems, and wireless networks, that enable the transmission of multiple signals to computers at rates of tens of millions of bits per second.

**broadband noise** see NOISE.

**Broca's aphasia** one of eight classically identified APHASIAS, characterized by nonfluent conversational speech and slow, halting speech production. Auditory comprehension is relatively good for everyday conversation, but there is considerable difficulty with complex syntax or multistep commands. The ability to write is impaired as well. It is associated with injury to the frontal lobe of the brain (see BROCA'S AREA). Also called **expressive aphasia**. [Paul BROCA]

**Broca's area** a region of the posterior portion of the inferior frontal convolution of a CEREBRAL HEMISPHERE that is associated with the production of speech. It is located on the left hemisphere of right-handed and of most left-handed individuals. [discovered in the 1860s and studied and researched by Paul BROCA]

**Brodmann's area** an area of cerebral cortex characterized by variation in the occurrence and arrangement of cells (see CYTOARCHITECTURE) from that of neighboring areas. These areas are identified by numbers and in many cases have been associated with specific brain functions, such as area 17 (STRIATE CORTEX, or primary visual cortex), areas 18 and 19 (PRESTRIATE CORTEX), area 4 (MOTOR AREA), and area 6 (PREMOTOR AREA). Brodmann's original map of 1909 identified 47 different cortical areas, but investigators have refined the mapping to identify more than 200 distinctive cortical areas. Also called **Brodmann's cytoarchitectonic area**. [Korbinian Brodmann (1868–1918), German neurologist]

**brofaromine** *n.* an antidepressant drug that is a reversible MONOAMINE OXIDASE INHIBITOR and relatively selective for MONOAMINE OXIDASE A. It therefore lacks many of the food interactions that limit the use of irreversible, nonselective MAO inhibitors. Brofaromine is not currently available in the United States. European trade name: **Consonar**.

**broken home** a single-parent household resulting from the divorce or separation of the parents. The term is now

generally avoided by social scientists as it seems to imply that there is a single standard for families and that those families that do not fit this standard are in some way inadequate or dysfunctional (i.e., broken).

**broken sleep** see MIDDLE INSOMNIA.

**bromazepam** *n.* a BENZODIAZEPINE used for the treatment of anxiety. It has a short to intermediate duration of action (serum HALF-LIFE up to 30 hours) and a slow onset of action due to its low lipid solubility (see BLOOD–BRAIN BARRIER). Bromazepam is not currently available in the United States. Canadian trade name: **Lectopam**.

**bromide** *n.* a class of drugs formerly used as anticonvulsants and as sedatives in the treatment of anxiety. Because of their toxicity and the frequency of adverse side effects, bromides were largely supplanted by phenobarbital in the early 20th century. Bromide intoxication (**bromism**) was a recognized complication, manifested in early stages by cognitive impairment and emotional disturbances and in later stages by psychosis, coma, and death.

**bromocriptine** *n.* a DOPAMINE-RECEPTOR AGONIST used to relieve the symptoms of Parkinson's disease and, due to its ability to inhibit release of the pituitary hormone PROLACTIN, to treat GALACTORRHEA. It is also used to treat amenorrhea, infertility, prolactin-secreting adenomas, and parkinsonism, including the EXTRAPYRAMIDAL SYMPTOMS induced by conventional antipsychotic agents. U.S. trade name: **Parlodel**.

**bromosis** *n.* see OLFACTORY REFERENCE SYNDROME.

**bronchodilator** *n.* a drug administered to widen the airways in the treatment of asthma, bronchitis, and related respiratory disorders. Bronchodilators include METHYLB-XANTHINES and SYMPATHOMIMETIC DRUGS.

**bronchus** *n.* (*pl.* **bronchi**) either one of the two main branches of the windpipe (trachea). —**bronchial** *adj.*

**brooding compulsion** an irresistible drive to mentally review trivial details or ponder abstract concepts as a means of reducing distress or preventing some dreaded event or situation.

**brood parasitism** a practice in which a female bird lays its eggs in the nest of another species, leaving the other parents to rear its chicks. Both cowbirds and cuckoos display brood parasitism. The parasitic species may eject some of the eggs of the host species, and the young of the parasitic species often hatch earlier and beg more intensively than the surviving host brood, successfully competing for food against the foster parents' own offspring.

**Brooklands experiment** an experiment in England that studied the benefits of homelike and family living environments for children with severe intellectual disability, at a time when many such children lived in residential facilities. Sixteen children (average age 7 years; average IQ 25) moved from a residential institution to a large house called Brooklands, together with a staff of nurses, a supervisor, and an educator. A similar group of children stayed at the institution. At follow-up, the children who had moved showed improvement in their ability to use and understand language and in other skills, but the institutional group did not. [reported in 1964 by New Zealand psychologist Jack Tizard (1919–1989), working in England]

**brotherliness** *n.* the feeling of human unity or solidarity, as expressed in productive involvement with others, care for their well-being, and concern for society as a

whole. According to Erich FROMM, brotherliness represents the ideal resolution of the search for ROOTEDNESS.

**brown fat** tissue made up of fat cells (see ADIPOCYTE) that is found especially around vital organs in the trunk and around the spinal column in the neck and chest. It is capable of intense metabolic activity to generate heat. See also ADIPOSE TISSUE.

**Brown–Forsythe test** a statistical method for determining whether there is HOMOGENEITY OF VARIANCE across two or more populations. The test, which uses the absolute values of the deviations of scores from the MEDIAN to calculate variance, is a helpful preliminary step in determining whether the required ASSUMPTIONS have been met for certain statistical procedures, such as ANALYSIS OF VARIANCE. [Morton B. **Brown**, Canadian-born U.S. statistician; Alan B. **Forsythe**, U.S. statistician]

**Brown–Peterson distractor technique** a technique used in memory studies that allows participants a brief period for remembering during which REHEARSAL is minimized. Typically, three items (e.g., words) are presented, after which the participant is asked to count backward for a time (as a DISTRACTOR) before attempting to recall the presented items. It measures forgetting or interference in WORKING MEMORY. [John A. **Brown**; Lloyd R. **Peterson** (1922– ) and Margaret Jean **Peterson** (1930– ), U.S. psychologists]

**Brown–Séguard's syndrome** a condition resulting from damage along one side of the spinal cord. It is characterized by a set of symptoms that include loss of the sense of pain and temperature along the opposite side of the body as well as spastic paralysis and loss of vibratory, joint, and tendon sensations on the same side as the lesion. [Charles **Brown–Séguard** (1817–1894), French neurophysiologist]

**Brown–Spearman formula** see SPEARMAN–BROWN PROPHECY FORMULA.

**Bruce effect** the effect of CHEMICAL COMMUNICATION in inducing miscarriage in pregnant females. Exposure to odors from an unfamiliar male within a few days of initial mating can disrupt pregnancy in female rodents. See also WHITTEN EFFECT. [described in 1959 by Hilda M. **Bruce**, 20th-century British endocrinologist]

**brucine** *n.* an alkaloid obtained from the *Brucea* genus of shrubs that is an antagonist at receptor sites for the inhibitory neurotransmitter GLYCINE. Brucine is also found (with strychnine) in NUX VOMICA; it resembles strychnine but is less potent.

**Brugsch's index** a system of measuring the chest circumference in anthropometric studies. The procedure involves multiplying the chest circumference by 100 and dividing the result by the height of the individual. [Theodor **Brugsch** (1827–1894), German physician]

**Bruininks–Oseretsky Test of Motor Proficiency (BOT)** a set of standardized tests to assess FINE MOTOR and GROSS MOTOR skills in children ages 4 to 21 years. Its 53 items are grouped into eight subtests: fine motor precision, fine motor integration, manual dexterity, bilateral coordination, balance, running speed and agility, upper-limb coordination, and strength. Originally published in 1978 as a revision of the 1923 **Oseretsky Tests of Motor Proficiency**, the BOT is now in its second edition (published in 2005). [Robert H. **Bruininks** (1942– ), U.S. psychologist; N. I. **Oseretsky**, 20th-century Russian psychologist]



**brujeria** *n.* see ROOTWORK.

**Brunswick faces** simple line drawings of faces in which such parameters as eye separation and height, nose length, and mouth height can be varied. The drawings are used in perceptual research for studies of discrimination and categorization. [Egon BRUNSWIK]

**Brunswick ratio** a mathematical expression of PERCEPTUAL CONSTANCY as environmental factors vary:  $(P - R)/(O - R)$ , where (in the case of size constancy, for example)  $P$  = perceived size,  $R$  = image size on retina, and  $O$  = objective (i.e., actual) size. [Egon BRUNSWIK]

**Brushfield–Wyatt syndrome** a familial disorder characterized by intellectual disability and several other anomalies, including an extensive port-wine birthmark, paralysis on the side opposite to the causal lesion, and cerebral tumor. [Thomas **Brushfield** (1858–1937), British physician]

**brute force** a problem-solving strategy in which every possible solution to a problem is generated and tested (often by a computer). See ALGORITHM; EXHAUSTIVE SEARCH.

**bruxism** *n.* persistent grinding, clenching, or gnashing of teeth, usually during sleep. It can be associated with feelings of tension, anger, frustration, or fear. Also called **bruxomania**; **stridor dentium**.

**BSM** abbreviation for BEHAVIORAL SLEEP MEDICINE.

**BSRI** abbreviation for BEM SEX ROLE INVENTORY.

**BSS** abbreviation for BECK SCALE FOR SUICIDE IDEATION.

**BST** abbreviation for BRIEF STIMULUS THERAPY.

**BT** abbreviation for BASIC TECHNIQUE.

**bubble concept of personal space** the theory that an imaginary, private region surrounds a person, serving as a buffer against potential emotional or physical threats and determining the distance to be maintained in communicating with others. The size of the “bubble” varies with different individuals and situations, being smaller, for example, for lovemaking than when conducting business. For most people, it extends from about 0.5 to 1.2 m (18 in to 4 ft) for contact with close friends, from 1.2 to 3.6 m (4 to 12 ft) for business acquaintances, and beyond 3.6 m (12 ft) for strangers. The distance also may vary in different cultures: For example, Americans may back away from Europeans who are perceived as standing too close during conversations. See also BODY BUFFER ZONE; PROXEMICS; TERRITORIALITY.

**bubble plot** a graphical representation of data that is similar to a SCATTERPLOT but includes an additional third variable whose values are represented by differently sized circles. For example, a researcher might use a bubble plot to show the relationship between income, years of education, and age within a particular profession. The first two variables would be arrayed along the horizontal *x*-axis and vertical *y*-axis, respectively, with circles placed in the graph to indicate points of intersecting values; the radius of each circle would correspond to values of age, with larger circles indicating greater age.

**buccal** *adj.* relating to the cheeks or the mouth cavity.

**buccal intercourse** see OROGENITAL ACTIVITY.

**buccal speech** a type of PHONATION that does not depend on laryngeal voice generation but rather is produced by shaping an air pocket in the buccal (i.e., oral) cavity.

While the cheeks and upper jaw form a neoglottis (substitute vibrating agent), the tongue remains free to serve as an ARTICULATOR to shape the sound. Compare ESOPHAGEAL SPEECH.

**buccinator** *n.* a muscle that compresses the cheek and retracts the angle of the mouth for eating, speaking, and smiling. During mastication, the buccinator helps hold the food between the teeth. In speech, the buccinator compresses air in the mouth and forces it out between the lips.

**buccofacial apraxia** see APRAXIA.

**buccolingual masticatory syndrome (BLM; BLMS)** a movement disorder associated with the use of conventional antipsychotic agents and characterized by involuntary movements of the tongue and musculature of the mouth and face. Patients may involuntarily chew, protrude the tongue, or make grimacing or pursing movements of the lips and cheeks. Also called **buccal–lingual masticatory syndrome**; **oral–lingual dyskinesia**. See also TARDIVE DYSKINESIA.

**BuChE** abbreviation for butyrylcholinesterase. See CHOLINESTERASE.

**Buddhism** *n.* the nontheistic religion and philosophy founded in India by Siddhartha Gautama (c. 563–c. 483 BCE), known as the Buddha (Sanskrit, Pali, literally: “awakened one”). Buddhism holds that the end toward which one ought to strive is enlightenment, a transformation of consciousness that offers the only escape from the cycle of rebirth. Enlightenment involves the overcoming of desire or craving and is achieved by following an eightfold path: right speech, right action, right livelihood, right effort, right mindfulness, right concentration, right views, and right intentions. The escape from the cycle of rebirth involves the dissolution of individual consciousness into a larger whole, a state referred to as NIRVANA, which represents an end of striving. Sigmund FREUD attempted to capture this sense of quiescence in his NIRVANA PRINCIPLE. See also ZEN BUDDHISM. —**Buddhist** *adj., n.*

**buffer** **1.** *n.* an irrelevant item interspersed between others in a test or experiment. For example, a buffer may be a question that is not scored and is introduced only to separate or disguise other items. **2.** *n.* a temporary store in memory. For example, SHORT-TERM MEMORY is a buffer. **3.** *vb.* see BUFFERING.

**buffering** *n.* **1.** the protection against stressful experiences that is afforded by an individual’s social support. **2.** in industrial and organizational theory, any practice by which an organization protects its operations from environmental uncertainty, for example, by accruing excess inventory to provide a safety margin. —**buffer** *vb.*

**bufotenin** *n.* a naturally occurring, mildly hallucinogenic substance found on the skin of a species of toad (genus *Bufo*) and in plants of the genus *Anadenanthera*; it is also reported to be a component of the urine of certain patients with schizophrenia. Bufotenin is related chemically to LSD, PSILOCIN, and DMT. See also HALLUCINOGEN.

**buggery** *n.* SODOMY or ANAL INTERCOURSE.

**bulb** *n.* **1.** a globe-shaped structure, such as the OLEFACTORY BULB. **2.** an obsolete name for the MEDULLA OBLONGATA.

**bulbar** *adj.* pertaining to a bulb or bulblike structure, such as the eyeball (as in BULBAR RETRACTION REFLEX), but especially the medulla oblongata, as in BULBAR PARALYSIS.

**bulbar paralysis** a condition arising usually from a defect in the motor portions of the medulla oblongata and involving paralysis of the muscles of the lips, tongue, mouth, pharynx, and larynx, resulting in difficulties in chewing, swallowing, and talking. Causes may include myasthenia gravis, motor neuron disease, or tumor. Also called **bulbar palsy**; **progressive bulbar palsy**.

**bulbar retraction reflex** the reflex retraction of the eyeball and closing of the NICITATING MEMBRANE in animals when the conjunctiva or cornea is touched.

**bulbi xanthomatosis** see XANTHOMATOSIS.

**bulbocavernosus muscle** a muscle of the perineum in men and women, which constricts the urethra. It therefore accelerates the passage of urine in both sexes and aids ejaculation in men; in women, it also serves as a weak vaginal sphincter. Also called **bulbospongiosus muscle**.

**bulbocavernous reflex** contraction of the BULBOCAVERNOSUS MUSCLE of the penis in response to stimulation of the head of the penis. Absence of this reflex can indicate SPINAL SHOCK or impairment of the nerves connecting the penis to the spinal cord.

**bulbopontine region** the part of the brain consisting of the pons and the portion of the medulla oblongata adjacent to the pons.

**bulbospongiosus muscle** see BULBOCAVERNOSUS MUSCLE.

**bulbotegmental reticular formation** the portion of the RETICULAR FORMATION that passes through the medulla oblongata.

**bulbourethral glands** a pair of glands in males whose ducts open into the urethra, near the base of the penis. Their secretion contributes to semen. Also called **Cowper's glands**.

**bulimia** *n.* insatiable hunger for food. It may have physiological causes, such as a brain lesion or endocrine disturbance, or be primarily a psychological disorder (see BINGE-EATING DISORDER; BULIMIA NERVOSA). See also HYPERBULIMIA; HYPERPHAGIA. —**bulimic** *adj.*, *n.*

**bulimia nervosa** an EATING DISORDER involving recurrent episodes of binge eating (i.e., discrete periods of uncontrolled consumption of abnormally large quantities of food) followed by inappropriate compensatory behaviors (e.g., self-induced vomiting, misuse of laxatives, fasting, excessive exercise). Compare BINGE-EATING DISORDER.

**bulky color** the attribute of color when color is a property throughout the volume of the stimulus, as in a colored liquid. Also called **volume color**. Compare FILM COLOR; SURFACE COLOR.

**bullying** *n.* persistent threatening and aggressive physical behavior or verbal abuse directed toward other people, especially those who are younger, smaller, weaker, or in some other situation of relative disadvantage. **Cyberbullying** is verbally threatening or harassing behavior conducted through such electronic technology as cell phones, e-mail, and text messaging.

**bundle hypothesis** the notion that sensory features are "bundled," or bound together, in conscious experience. [proposed by Max WERTHEIMER]

**bundling** *n.* **1.** a strategy, often used in marketing and politics, of combining several products or policies in a way that maximizes their appeal. **2.** more generally, binding a

number of individual items together to form a unit. **3.** a former custom, found in various parts of Europe and North America, in which courting couples were permitted to sleep together fully clothed as long as various physical impediments to sexual intercourse were in place.

**Bunsen–Roscoe law** see BLOCH'S LAW. [Robert Wilhelm Eberhard **Bunsen** (1811–1899), German chemist; Henry Enfield **Roscoe** (1833–1915), British chemist]

**buphthalmos** *n.* see CONGENITAL GLAUCOMA.

**buprenorphine** *n.* an OPIOID ANALGESIC that is a partial agonist at mu OPIOID RECEPTORS. It is used for the treatment of moderate to severe pain (U.S. trade name: **Buprenex**) and also for the management of opioid dependence, for which it is used either alone (U.S. trade name: **Subutex**) or in combination with NALOXONE (U.S. trade name: **Suboxone**).

**bupropion** *n.* an AMINOKETONE that inhibits reuptake of dopamine, norepinephrine, and serotonin and is commonly prescribed for the treatment of depression. In contrast to SSRIs and SNRIs, bupropion affects dopamine and norepinephrine more than serotonin and is sometimes used in combination with other antidepressants to augment the antidepressant response (see AUGMENTATION STRATEGY). It has also been used in the treatment of attention-deficit/hyperactivity disorder and as an adjuvant to behavioral treatment for smoking cessation. U.S. trade names: **Wellbutrin**; **Zyban**.

**bureaucracy** *n.* **1.** a system of administration or organizational structure, often in a government body, that is characterized by standardized rule-bound procedures, specialization of skills, and an elaborate hierarchy. **2.** unnecessarily lengthy or complex official procedures resulting in delay, inaction, or inflexibility. —**bureaucrat** *n.* —**bureaucratic** *adj.*

**bureaucratic leader** **1.** the type of leader whose responsibilities and leadership style are largely determined by the routine procedures required by his or her position in a hierarchical organization, such as a government department. **2.** a leader who rigidly adheres to prescribed routine and makes no allowance for extenuating circumstances.

**Buridan's ass** an example used to illustrate the difficulty of making decisions based solely on the relative desirability of alternatives. The unfortunate ass in the example starves to death while standing equidistant between two equally appealing haystacks. This image is named for French philosopher Jean **Buridan** (c. 1300–c. 1358), although he was not the originator of the example. The term may have reference to Buridan's attempt to find a philosophical middle ground in ACTION THEORY between strict voluntarism and strict rationalism.

**burned out** **1.** describing an individual who is mentally, emotionally, or physically exhausted or overwhelmed. See BURNOUT. **2.** historically, describing individuals with chronic schizophrenia who are apathetic and withdrawn and show progressive deterioration, with little hope of significant improvement, personal growth, or adaptive functioning. In this pejorative sense, the term is rarely used today, especially in light of research indicating that individuals with schizophrenia can improve functioning.

**burn injuries** tissue damage caused by exposure to flame, intense heat without flame (e.g., contact with high-voltage electricity, red-hot metal, or scalding liquids), or ultraviolet radiation. **Superficial** (or **first-degree**) **burns** are

characterized by redness, swelling, and peeling of the skin; **partial-thickness** (or **second-degree**) **burns** are marked by penetration of damage beyond the skin layer, which can be blistered and dull white to cherry red and streaked with coagulated capillaries; **full-thickness** (or **third-degree**) **burns** damage tissues that are subcutaneous or deeper, including epithelial tissue, nerve endings, and blood vessels; and **fourth-degree burns** are usually identified by a distinct odor and the appearance of charred flesh. Because of sometimes excruciating pain and cosmetic damage, severe burn injuries are often mentally traumatic, and psychological help is recommended along with medical treatment.

**burnout** *n.* physical, emotional, or mental exhaustion accompanied by decreased motivation, lowered performance, and negative attitudes toward oneself and others. It results from performing at a high level until stress and tension, especially from extreme and prolonged physical or mental exertion or an overburdening workload, take their toll. The word was first used in this sense in 1975 by U.S. psychologist Herbert J. Freudenberger (1926–1999) in referring to workers in clinics with heavy caseloads. Burnout is most often observed in professionals who work in service-oriented vocations (e.g., social workers, teachers, correctional officers) and experience chronic high levels of stress. It can be particularly acute in therapists or counselors doing trauma work, who feel overwhelmed by the cumulative secondary trauma of witnessing the effects. Burnout is also experienced by athletes when continually exposed to stress associated with performance without commensurate rewards or rest. See also **OVERTRAINING SYNDROME**; **VITAL EXHAUSTION**.

**burnt** *adj.* denoting one of the primary odor qualities in **HENNING'S ODOR PRISM** and in the **CROCKER–HENDERSON ODOR SYSTEM**.

**burst** *n.* a series of responses elicited at a relatively high rate, for example, in a neuron or at the onset of **EXTINCTION** (an **extinction burst**) when conditioned responses are no longer rewarded.

**burst-pause firing** an oscillating pattern in which neurons in the **THALAMOCORTICAL SYSTEM** fire in unison, 1 to 4 per second, followed by pauses in which they do not fire. This pattern becomes synchronized throughout much of the brain, producing the large-amplitude electroencephalogram waves characteristic of **SLOW-WAVE SLEEP**.

**Buschke–Fuld Selective Reminding Test** see **SELECTIVE REMINDING TEST**. [Herman **Buschke**, U.S. physician, and Paula A. **Fuld**, U.S. psychologist]

**business game** a teaching method employed in business schools and management or executive training in which individuals or teams compete against one another in solving typical but simulated management, financial, or operational problems. Games are usually played in an online environment that offers the opportunity for feedback on the results of decisions as the game is played. Also called **business-simulation game**; **management-simulation game**. See also **CASE METHOD**; **CONFERENCE METHOD**; **MULTIPLE-ROLE PLAYING**; **SCENARIO ANALYSIS**.

**business psychology** see **INDUSTRIAL AND ORGANIZATIONAL PSYCHOLOGY**.

**business-simulation game** see **BUSINESS GAME**.

**buspirone** *n.* a nonbenzodiazepine anxiolytic of the **AZAPIRONE** class that acts as a partial serotonin agonist at 5-HT<sub>1A</sub> receptors. Both it and its primary metabolic prod-

uct, 6-hydroxybuspirone, produce some relief of subjective symptoms of anxiety without the sedation, behavioral disinhibition, and risk of dependence associated with the **BENZODIAZEPINES**. Its use has been limited, however, due to its relative lack of efficacy compared with benzodiazepines. U.S. trade name: **BuSpar**.

**bust-to-waist ratio** a ratio of curvaceousness determined by dividing bust circumference by waist circumference.

**butabarbital** *n.* an intermediate-acting **BARBITURATE** used in the treatment of insomnia and for daytime and preoperative sedation. Like other barbiturates, it is a nonselective CNS **DEPRESSANT** and therefore quite toxic in overdose. Because tolerance to its sedative and hypnotic effects accrues much more rapidly than tolerance to its CNS depressant effects, its **THERAPEUTIC INDEX** drops and its potential lethality increases as the dose is increased. These factors, plus its potential for abuse, have caused a decline in its clinical use. U.S. trade name: **Butisol Sodium**.

**butorphanol** *n.* a synthetic **OPIOID** that is an agonist at kappa **OPIOID RECEPTORS** and a partial agonist–antagonist at mu opioid receptors. It is used clinically for the management of moderate to severe pain, including migraine headaches, and as a preoperative medication. It is available in an injectable preparation and an intranasal spray, but the ease of use of the latter has made it a common drug of abuse. As with other opioid agents, butorphanol may cause respiratory depression, nausea, and dependence. U.S. trade name: **Stadol**.

**butterfly effect** the tendency of a complex, dynamic system to be sensitive to initial conditions, so that over time a small cause may have large, unpredictable effects (see **SENSITIVE DEPENDENCE**). The term refers to an example in which the fluttering of the wings of a butterfly in one part of the world is seen to contribute to the causation of a tornado in another. The term is used in **CHAOS THEORY** and more generally to describe nonlinear causal connections.

**butyrophenone** *n.* any of a class of **HIGH-POTENCY ANTIPSYCHOTICS** used primarily in the treatment of schizophrenia, mania, and severe agitation. They are associated with numerous **EXTRAPYRAMIDAL SYMPTOMS**, as well as **NEUROLEPTIC MALIGNANT SYNDROME** and **TARDIVE DYSKINESIA**. The prototype is **HALOPERIDOL**.

**butyrylcholinesterase (BuChE)** *n.* see **CHOLINESTERASE**.

**buying behavior** the sum total of the mental processes and physical activities associated with the purchase of products or services. The decision to buy a particular product can occur in a number of stages. Recognition of a need for the product is followed by searching for information about it, evaluating alternative products, and finally making a choice. Experience of using the product after purchase will become a factor in deciding whether or not to purchase it (or a similar product) in the future.

**B-value** *n.* see **METANEED**.

**BVRT** abbreviation for **BENTON VISUAL RETENTION TEST**.

**BWAS** abbreviation for **BARRON–WELSH ART SCALE**.

**B wave of electroretinogram** a large, positive electrical wave pattern that is recorded from the eye when the retina is stimulated by light. The electrical response is detected by an electrode placed on the anesthetized surface of the eye. See **ELECTRORETINOGRAPHY**.

**BWS** abbreviation for BATTERED-WOMAN SYNDROME.

**bystander effect** a phenomenon in which people fail to offer needed help in emergencies, especially when other people are present in the same setting. Studies of this tendency, initially described in response to well-publicized fail-

ures of bystanders to render aid in emergencies, have identified a number of psychological and interpersonal processes that inhibit helping, including misinterpreting other people's lack of response as an indication that help is not needed, CONFUSION OF RESPONSIBILITY, and DIFFUSION OF RESPONSIBILITY.

# Cc

**CA 1.** abbreviation for COCAINE ANONYMOUS. **2.** abbreviation for CHRONOLOGICAL AGE.

**CA1, CA2, CA3, and CA4** see HIPPOCAMPUS.

**caapi** *n.* see AYAHUASCA.

**CAB** abbreviation for COOLIDGE ASSESSMENT BATTERY.

**CABG** abbreviation for CORONARY ARTERY BYPASS GRAFT.

**cable properties** the physical properties of an axon such that a small, nonpropagated electrical disturbance spreads and diminishes exponentially with distance, as along a nonorganic cable. The resistance properties of the conductor determine the rate at which the signal degrades.

**cable tensiometry** a method of measuring muscular strength in which the participant pulls on a cable and the change in the tension of the cable is measured with a tensiometer. See also ERGOGRAPH.

**cachexia** *n.* an extreme state of poor health, physical wasting, and malnutrition, usually associated with chronic illnesses, such as cancer and pulmonary tuberculosis.

**caco-** (**cac-**) *combining form* bad or unpleasant.

**cacoethes** *n.* an irresistible, and sometimes irrational, desire or compulsion.

**caesarean section** see CESAREAN SECTION.

**cafard** *n.* a CULTURE-BOUND SYNDROME found in Polynesia, with symptoms similar to those of AMOK. Also called **ca-thard**.

**Cafergot** *n.* a trade name for ERGOTAMINE.

**cafeteria feeding** a technique for studying the HUNGER DRIVE in children and nonhuman animals by offering a variety of foods and observing the extent to which the participants choose those providing balanced, life-sustaining nutrition.

**caffeine** *n.* a CNS STIMULANT found in coffee, tea, cola, cocoa, chocolate, and certain prescribed and over-the-counter medications. It is an antagonist of the neuro-modulator ADENOSINE. Caffeine belongs to the METHYLXANTHINE group of alkaloids, and its effects include rapid breathing, increased pulse rate and blood pressure, and diminished fatigue. Precise effects vary with the amount ingested and the tolerance of the individual. Moderate doses produce an improved flow of thought and clearness of ideas, together with increased respiratory and vasomotor activity; large doses may cause CAFFEINE INTOXICATION and SUBSTANCE-INDUCED ANXIETY DISORDER. Because of its stimulant effects, caffeine is used in WAKE-PROMOTING AGENTS and in certain analgesics and cold remedies containing ingredients that usually cause drowsiness. See also ASPIRIN COMBINATIONS.

**caffeine intoxication** in *DSM-IV-TR* and *DSM-5*, intoxication due to recent consumption of large amounts of caffeine (typically over 250 mg), in the form of coffee, tea, cola, or medications, and involving at least five of the following symptoms: restlessness, nervousness, excitement, insomnia, flushed face, diuresis (increased urination), gas-

trointestinal complaints, muscle twitching, rambling thought and speech, rapid or irregular heart rhythm, periods of inexhaustibility, or psychomotor agitation. Also called **caffeinism**.

**CAGE** *n.* a widely used, simple screening instrument to detect alcohol dependence. It consists of the following four questions: (a) Have you ever felt you should Cut down on your drinking? (b) Have people Annoyed you by criticizing your drinking? (c) Have you ever felt bad or Guilty about your drinking? (d) Have you ever used a drink as an Eye-opener?

**CAH** abbreviation for CONGENITAL ADRENAL HYPERPLASIA.

**CAI** abbreviation for COMPUTER-ASSISTED INSTRUCTION.

**CAL** abbreviation for computer-assisted learning (see COMPUTER-ASSISTED INSTRUCTION).

**calamus scriptorius** the caudal end of the floor of the fourth VENTRICLE on the dorsal surface of the MEDULLA OBLONGATA.

**calcarine area** the region on the medial surface of the occipital lobe of the brain that surrounds the CALCARINE FISSURE. It includes parts of the STRIATE CORTEX and the PRESTRIATE CORTEX.

**calcarine fissure** a fissure (groove) on the medial surface of each cerebral hemisphere, extending from the most posterior prominence of the OCCIPITAL LOBE to the PARIETO-OCCIPITAL SULCUS. Also called **calcarine sulcus**. See also CALCARINE AREA.

**calcitonin** *n.* a hormone produced by the parafollicular (or C) cells of the THYROID GLAND. It controls calcium and phosphate levels in the blood by promoting the resorption of calcium and phosphate by bone tissue, thus lowering their concentrations in the blood. See CALCIUM REGULATION.

**calcium channel** a VOLTAGE-GATED ION CHANNEL in the presynaptic membrane of a neuron that is involved in the release of neurotransmitter (and, therefore, passage of a neural signal) at a SYNAPSE. The arrival of an ACTION POTENTIAL at the terminal buttons (see AXON) of the neuron is accompanied by DEPOLARIZATION of the presynaptic membrane, which results in opening of the calcium channels and influx of calcium ions into the terminal buttons. This triggers fusion of the SYNAPTIC VESICLES (which contain neurotransmitter) with the presynaptic membrane and the release of neurotransmitter into the SYNAPTIC CLEFT.

**calcium-channel blocker** any of a class of drugs, the prototype of which is **verapamil**, used in the treatment of hypertension and abnormal heart rhythms (arrhythmias). Calcium-channel blockers inhibit the flow of calcium ions into the smooth-muscle cells of blood vessels and the cells of heart muscle, which need calcium to contract. They act by binding to CALCIUM CHANNELS on the surface of depolarized muscle-cell membranes, causing a decrease in transmembrane calcium transmission and prolonged relaxation of the muscles. Verapamil has been studied as a potential MOOD STABILIZER, with equivocal results in the treatment of mania.

**calcium-deficiency disorders** conditions caused by insufficient levels of calcium in the tissues. Absorption of calcium from food and its deposition in bone is facilitated by vitamin D, and deficiency of this vitamin is the usual cause of **rickets**, a disease of childhood marked by deformed bones and teeth and lax muscles, and **osteomalacia**, the adult form of rickets. **Osteoporosis**, in which the bones become brittle and break easily, is caused by resorption (loss) of calcified bone due to disease or aging (it is common in postmenopausal women). **Tetany** (muscle spasms) is due to a deficiency of calcium in the blood.

**calcium regulation** the maintenance of calcium levels in the blood and other extracellular fluids. Secretion of PARATHYROID HORMONE by the parathyroid glands causes release of ionic calcium from the bones, whereas CALCITONIN, produced by the thyroid gland, promotes calcium resorption.

**calendar age** see CHRONOLOGICAL AGE.

**calendar calculation** the rare ability to identify the day of the week for any given date, such as February 19, 1878, in a matter of seconds. **Calendar calculators** are frequently savants who usually have no evident mathematical ability but may be able to perform other feats with the calendar, such as correctly answering the question, "In what years did April 16 fall on a Sunday?" No satisfactory explanation has been found for this skill. See also IDIOT SAVANT.

**calibration** *n.* the process of assigning values to a measuring device (instrument, test, or scale) relative to a reference standard. For example, it would be useful to compare the scores on a new test of intelligence with those from an older, well-accepted test to ensure that the new test scores provide comparable ratings or values. To do so, a researcher might select a group of people (the **calibration sample**), administer each individual both the old and new tests, and then assess the results.

**California Achievement Tests (CAT)** an achievement test battery developed by the California Test Bureau to assess the basic skills of students in kindergarten through 12th grade. Now in its sixth edition and called **TerraNova CAT**, it consists of various multiple-choice subtests across 13 levels (K–12) and six thinking-process categories (gathering information, organizing information, analyzing information, generating ideas, synthesizing elements, evaluating outcomes). Among the academic areas covered (at appropriate levels) are reading, language, spelling, mathematics, study skills, science, and social studies. It was originally published in 1943 as a revision of the now obsolete 1933 **Progressive Achievement Tests**, which were also developed by the California Test Bureau.

**California Psychological Inventory (CPI)** a self-report inventory designed to evaluate adult and adolescent personality characteristics, interpersonal behavior, and social interaction. It consists of 434 true-false statements (a 260-statement short form is also available) that produce scores on 20 scales divided into four measurement classes: (a) poise, ascendancy, self-assurance, and interpersonal adequacy; (b) socialization, responsibility, intrapersonal values, and character; (c) achievement potential and intellectual efficacy; and (d) intellectual and interest modes.

Originally published in 1957, the CPI is now in its third edition (published in 1996). Also called **California Psychological Inventory Test**. [devised by U.S. psychologist

Harrison G. Gough (1921– ) at the University of California, Berkeley]

**California Verbal Learning Test (CVLT)** a word-list learning test consisting of 16 items belonging to one of four categories. Currently in its second edition (**CVLT-II**), the test assesses immediate FREE RECALL following each of five learning trials as well as an interference trial. Free recall and CUED RECALL are also assessed following a short-term delay (immediately after the interference trial) and a long-term (20-minute) delay. Finally, long-term recognition is assessed using distractors that vary in their likelihood of eliciting false positive errors. In addition to the adult version, a 9-item version has been developed for use with individuals with memory impairment (**CVLT-II Short Form**). There is also a 15-item version for children ages 5 to 16, the **California Verbal Learning Test for Children (CVLT-C)**. See also RECALL SCORE METHOD. [originally published in 1987 by U.S. neuropsychologists Dean C. Delis (1951– ), Joel H. Kramer, Edith KAPLAN, and Beth A. Ober (1952– )]

**callback** *n.* in consumer psychology, a follow-up interview usually undertaken with a consumer after an initial interview about a product or service. Callbacks are carried out to assess continued satisfaction or possible changes in opinion.

**call boy** see MALE HOMOSEXUAL PROSTITUTION.

**call girl** a female prostitute who does not work out of a brothel or by soliciting in the street. Instead, her services are ordered by telephone, and she may then be collected by the client or come to the client's home or hotel. Call girls typically charge higher prices than other types of prostitutes.

**calling card** see SIGNATURE.

**callosal** *adj.* referring to the CORPUS CALLOSUM.

**callosal apraxia** an inability to perform learned, purposeful movements (see APRAXIA) due to lesions of the CORPUS CALLOSUM.

**callosal gyrus** see CINGULATE CORTEX.

**callosal sulcus** a fissure or groove that separates the CORPUS CALLOSUM from the CINGULATE CORTEX along the medial side of each cerebral hemisphere.

**callosotomy** *n.* see COMMISSUROTOMY.

**callosotomy** *n.* see COMMISSUROTOMY.

**callosum** *n.* see CORPUS CALLOSUM.

**calmodulin** *n.* a protein that binds calcium ions in many calcium-regulated processes in living cells. For example, calmodulin is involved in muscle contraction and in the cascade of neurochemical events that underlies memory formation.

**caloric intake** the consumption of food as measured in CALORIES.

**caloric nystagmus** a test that involves pouring water, either above or below body temperature, into the ear and measuring NYSTAGMUS.

**caloric restriction** a reduction of total energy intake that does not cause nutrient deficiencies or pathological metabolic extremes, such as HYPOGLYCEMIA. Although caloric restriction has been shown to have a positive effect on health and longevity in animal models in research, long-

term maintenance has proven difficult to achieve among humans.

**calorie** (symbol: cal) *n.* the amount of energy required to raise the temperature of 1 g of water by 1 °C. For most purposes, the calorie (a c.g.s. unit) has been replaced by the SI unit of work and energy, the joule: 1 cal = 4.1868 J. However, the energy values of foods are sometimes still expressed in **kilocalories** (or Calories [Cal]: 1 Cal = 1,000 cal).

**Calvinism** *n.* a form of Protestant Christianity based on the teachings of French-born reformer John Calvin (1509–1564, also known as Jean Cauvin). He taught that God will grant salvation only to those who are predestined to receive it as an unmerited gift, the rest of humanity being predestined to damnation. Humans therefore can do nothing to save themselves and have no free will. See PREDESTINATION.

**CAM 1.** abbreviation for CELL ADHESION MOLECULE. **2.** abbreviation for COMPLEMENTARY AND ALTERNATIVE MEDICINE.

**camaraderie** *n.* comradeship: goodwill and light-hearted rapport between friends or members of a social group, especially of a military unit. Camaraderie is an important component of the morale, unit cohesion, and esprit de corps required in forming and sustaining unit dynamics. It can also serve as a buffer in protecting members of a unit.

**camisole** *n.* see STRAITJACKET.

**camouflage** *n.* the use of cryptic coloration and vocal signals that are difficult to localize in order to conceal one's location (see CRYPTIS). Many nonhuman animal species use camouflage to escape the notice of predators or to avoid detection by prey. For example, a stick insect looks like an actual stick in its environment, allowing it to blend in. Camouflage ALARM CALLS have acoustic features that make it difficult to determine the caller's location. See also COUNTERSHADING. Compare ADVERTISEMENT.

**cAMP** abbreviation for CYCLIC AMP.

**camphoraceous** *adj.* denoting one of the seven classes of odorants in the STEREOCHEMICAL SMELL THEORY.

**camphorated tincture of opium** see PAREGORIC.

**Campral** *n.* a trade name for ACAMPROSATE.

**camptocormia** *n.* a condition in which the back is bent forward at a sharp angle (30°–90°). In some cases, it may be a rare manifestation of CONVERSION DISORDER and may be accompanied by back pain, tremors, or both. It is also occasionally seen in Parkinson's disease.

**campus crisis center** a campus organization created to provide support and advice for students experiencing personal difficulty or trauma in their school, college, or university. Substance abuse, rape, depression, academic failure, and suicidal tendencies are typical of the problems or traumas encountered by students. A campus crisis center may offer such services as counseling, a hotline, or an escort service for students returning to housing late at night.

**Canadian Psychological Association (CPA)** a professional organization representing psychologists in Canada, organized in 1939 and incorporated in 1950. Its objectives are to lead, advance, and promote psychology as a science and profession for the benefit of humanity; to provide leadership in psychology in Canada; to promote

the advancement, dissemination, and application of psychological knowledge; and to develop standards and ethical principles for education, training, science, and practice in psychology.

**canalization** *n.* **1.** in evolutionary genetics, the containment of variation of certain characters within narrow bounds so that expression of underlying genetic variation is repressed. It is a developmental mechanism that maintains a constant PHENOTYPE over a range of different environments in which the organism might normally occur. **2.** in neuroscience, the hypothetical process by which repeated use of a neural pathway leads to greater ease of transmission of impulses and hence its establishment as permanent. **3.** in psychology, the channeling by an organism of its needs into fixed patterns of gratification, for example, food or recreational preferences.

**cancellation test** a test of perceptual and motor speed requiring the participant to cancel out randomly scattered symbols on a page or screen.

**cancer** *n.* any one of a group of diseases characterized by the unregulated, abnormal growth of cells to form malignant tumors (see NEOPLASM), which invade neighboring tissues; the abnormal cells are generally capable of spreading via the bloodstream or lymphatic system to other body areas or organs by the process of **metastasis**. Causes of cancer are numerous but commonly include viruses, environmental toxins, diet, and inherited genetic variations. Cancers are generally classified as **carcinomas** if they involve the EPITHELIUM (e.g., cancers of the lungs, stomach, or skin) and **sarcomas** if the affected tissues are connective (e.g., bone, muscle, or fat). More than 150 different kinds of cancer have been identified in humans, based on cell types, rate of growth, and other factors. Because cancers can be disfiguring and life threatening, psychological counseling is often helpful for patients. —**cancerous** *adj.*

**cancer phobia** a persistent and irrational fear of cancer, which may be a symptom of OBSESSIVE-COMPULSIVE DISORDER or GENERALIZED ANXIETY DISORDER; it may also be classified as a SPECIFIC PHOBIA, other type. The belief that one actually has cancer based on a misinterpretation of bodily symptoms is classified as HYPOCHONDRIASIS.

**candidiasis** *n.* infection caused by yeastlike fungi of the genus *Candida*, especially the species *Candida albicans*. These fungi are part of the normal flora of the mouth, skin, intestinal tract, and vagina but under certain circumstances can cause a variety of infections. Candidiasis commonly affects the mouth, skin folds, and vagina. Less commonly, but more seriously, *Candida* can cause systemic infection leading to septicemia, endocarditis, meningitis, or osteomyelitis. Such serious infections are more common in individuals who are weakened or immunocompromised, such as those with AIDS. Candidiasis was formerly called **moniliasis**.

**can-do factors** see WILL-DO FACTORS.

**cane** *n.* an aid for sitting, standing, or MOBILITY for people with visual impairment or other disabilities. Canes for individuals with neuromuscular disabilities, often called **orthopedic canes**, are usually sturdy shafts of solid wood or metal designed for weight bearing, with a curved or horizontal handle at the top, a rubber tip at the bottom, and sometimes three or four feet. Canes for individuals with visual impairment generally are slimmer, lighter, longer, made of metal, and used for orientation. See ORIENTATION AND MOBILITY TRAINING.

**cannabidiol (CBD)** *n.* a CANNABINOID that lacks the psychoactive properties of delta-9-TETRAHYDROCANNABINOL (THC) but shares its anti-inflammatory and other medical properties. Its potential roles in the management of a wide range of medical conditions are being studied.

**cannabinoid** *n.* any of a class of about 60 substances in the CANNABIS plant that includes those responsible for the psychoactive properties of the plant. The most important cannabinoid is TETRAHYDROCANNABINOL.

**cannabinoid receptor** any of a family of specialized molecules in cell membranes that bind with CANNABIS-based compounds and similar bodily created substances (i.e., with CANNABINOIDS and ENDOGENOUS CANNABINOIDS, respectively). There are two known types: CB<sub>1</sub> receptors, first identified in 1988 by U.S. pharmacologists Allyn C. Howlett and William A. Devane and located primarily within the brain and spinal cord; and CB<sub>2</sub> receptors, located primarily within the spleen and other tissues of the immune system. Findings from recent research indicate the existence of other types of cannabinoid receptors (e.g., GPR55), but their characteristics have yet to be completely elaborated. Both CB<sub>1</sub> and CB<sub>2</sub> receptors are coupled to G PROTEINS, which affect levels of SECOND MESSENGERS that act to open or close certain ION CHANNELS.

CB<sub>1</sub> receptors are the most prolific G-protein-coupled receptors in the central nervous system and are concentrated particularly within the hippocampus, cerebellum, and basal ganglia, areas of the brain related to motor control, learning and memory, emotional responses, motivated behavior, and homeostasis. Their activation by endogenous cannabinoids causes short- or long-term suppression of NEUROTRANSMITTER release by neighboring neurons, leading to pain reduction, smooth muscle relaxation, suppression of nausea and vomiting, enhanced appetite, reduced intraocular pressure, and a variety of other physiological and behavioral effects. Additionally, the CB<sub>1</sub> receptor is responsible for the psychoactive and psychomotor effects of plant-based cannabinoids, and it has been implicated in the rewarding aspects associated with the use of such drugs as alcohol, cocaine, methamphetamine, and heroin.

In contrast, activation of CB<sub>2</sub> receptors produces immunosuppressive, anti-inflammatory, and antiallergenic effects. Given this wide range of activity, efforts are ongoing to develop synthetic cannabinoid receptor AGONISTS and ANTAGONISTS for therapeutic purposes.

**cannabis** *n.* any of three related plant species (*Cannabis sativa*, *C. indica*, or *C. ruderalis*) whose dried flowering or fruiting tops or leaves are widely used as a recreational drug, known as **marijuana**. The principal psychoactive agent in these plants, delta-9-TETRAHYDROCANNABINOL (THC), is concentrated in the resin, most of which is in the plants' flowering tops. When smoked, THC is rapidly absorbed into the blood and almost immediately distributed to the brain, causing the rapid onset of subjective effects that last 2 to 3 hours. These effects include a sense of euphoria or well-being, easy laughter, perceptual distortions, impairment of concentration and short-term memory, and craving for food. Adverse effects of anxiety or panic are not uncommon, and hallucinations may occur with high doses (see also CANNABIS-INDUCED PSYCHOTIC DISORDER; CANNABIS INTOXICATION). Tolerance to the effects of THC develops with repeated use, and a withdrawal syndrome has been identified. The most potent marijuana preparation is HASHISH, which consists of pure resin. A less potent preparation is sinsemilla, also called GANJA; it is made from the plants'

flowering tops. The weakest preparation is BHANG. Also called **hemp**.

**cannabis abuse** in *DSM-IV-TR*, a pattern of cannabis use marked by recurrent significant adverse consequences related to its repeated ingestion. This diagnosis is preempted by the diagnosis of CANNABIS DEPENDENCE: If the criteria for cannabis abuse and cannabis dependence are both met, only the latter diagnosis is given. In *DSM-5*, both have been subsumed into a category labeled **cannabis use disorder** and are no longer considered distinct diagnoses. See also SUBSTANCE ABUSE.

**cannabis dependence** in *DSM-IV-TR*, continued use of cannabis despite significant cannabis-related cognitive, behavioral, and physiological problems and tolerance or withdrawal symptoms (chiefly motor agitation) if use is suspended. The diagnosis, along with that for CANNABIS ABUSE, has been subsumed in *DSM-5* under **cannabis use disorder**, and neither is considered a distinct entity any longer. See also SUBSTANCE DEPENDENCE.

**cannabis-induced psychotic disorder** a rare disorder marked by persecutory delusions associated with CANNABIS INTOXICATION, sometimes accompanied by marked anxiety, emotional lability, depersonalization, and subsequent amnesia for the episode. The disorder usually remits within a day, although it may persist for a few days. Hallucinations occur rarely. Also called **cannabis psychosis**.

**cannabis intoxication** in *DSM-IV-TR* and *DSM-5*, a reversible syndrome that occurs during or shortly after the ingestion or smoking of cannabis. It consists of clinically significant behavioral or psychological changes (e.g., enhanced sense of well-being, intensification of perceptions, a sense of slowed time), as well as one or more signs of physiological involvement (e.g., increased pulse rate, conjunctivitis, dry mouth and throat). See also SUBSTANCE INTOXICATION.

**cannabis psychosis** see CANNABIS-INDUCED PSYCHOTIC DISORDER.

**cannibalism** *n.* **1.** the consumption of human flesh by humans. See also KURU. **2.** a pathological urge to devour human flesh, occasionally observed in schizophrenia and similar mental disturbances, such as WINDIGO PSYCHOSIS. In classical psychoanalytic theory, cannibalistic impulses are associated with fixation at the ORAL-BITING PHASE of psychosexual development. **3.** the ingestion by a nonhuman animal of a member of its own species. Some female insects kill their mate at the time of copulation and eat it as a source of protein for developing eggs. In some animal species, offspring are eaten, often in times of nutritional stress or when offspring are malformed and unlikely to survive. —**cannibalistic** *adj.*

**Cannon-Bard theory** the theory that emotional states result from the influence of lower brain centers (the hypothalamus and thalamus) on higher ones (the cortex), rather than from sensory feedback to the brain produced by peripheral internal organs and voluntary musculature. According to this theory, the thalamus controls the experience of emotion, and the hypothalamus controls the expression of emotion, both of which occur simultaneously. Also called **Bard-Cannon theory**; **Cannon's theory**; **hypothalamic theory of Cannon**; **thalamic theory of Cannon**. See also FIGHT-OR-FLIGHT RESPONSE. [proposed in the 1920s and early 1930s by Walter B. CANNON and Philip Bard (1898–1977), U.S. physiologist]

**cannula** *n.* a tube that can be inserted into a body cavity



to provide a channel for the escape of fluid from the cavity. It can also be inserted into a blood vessel to introduce substances into the body to avoid repeated injections by a hypodermic needle or to take blood samples.

**canon** *n.* a fundamental working principle or rule believed to increase the likelihood of making accurate inferences and meaningful discoveries. —**canonical** *adj.*

**canonical analysis** any of a class of statistical procedures that assess the degree of relationship between sets of variables via interpretation of a limited number of linear combinations of specific values of those variables. The overall objective of such procedures is to reduce the DIMENSIONALITY of the data under investigation. Examples include CANONICAL CORRELATION ANALYSIS, DISCRIMINANT ANALYSIS, MULTIPLE REGRESSION, and MULTIVARIATE ANALYSIS OF VARIANCE, among others.

**canonical correlation analysis** a method of data analysis that provides a measure of the strength of the relationship between a linear combination of predictor variables and a linear combination of outcome measures. Essentially, it extends a basic CORRELATION ANALYSIS, which relates only one variable with another variable, and it extends MULTIPLE REGRESSION, which relates several INDEPENDENT VARIABLES with only one DEPENDENT VARIABLE. For example, a researcher might use a canonical correlation analysis to investigate whether several measures of attitude toward learning (e.g., confidence, anxiety, interest, enjoyment) are related to several measures of achievement (e.g., grade-point average, the number of math classes taken, the number of memberships in honor societies).

**canonical correlation coefficient** (symbol:  $R_c$ ) an index of the magnitude of the linear relationship between a linear combination of one set of variables and a linear combination of a different set of variables, with each linear combination made in such a way as to maximize the strength of the relationship between the two variable sets. It ranges in value from  $-1$  to  $+1$ .

**capability** *n.* **1.** the possession of able qualities. **2.** an ability, talent, or facility that a person can put to constructive use. For example, a child may have great musical capability. **3.** a characteristic that can be developed for functional use.

**capacity** *n.* **1.** the maximum ability of an individual to receive or retain information and knowledge or to function in mental or physical tasks. **2.** the potential of an individual for intellectual or creative development or accomplishment. **3.** inborn potential, as contrasted with developed potential (see ABILITY).

**capacity model** one of a number of models that characterize attention as a finite resource with limited processing power. Attentional deficits occur when the demands on this resource exceed the supply.

**capacity sharing** in DUAL-TASK PERFORMANCE, the dividing of attentional resources between the tasks such that they are processed in parallel (see PARALLEL PROCESSING), although the processing efficiency varies with the amount of resources required.

**CAPD** abbreviation for CENTRAL AUDITORY PROCESSING DISORDER.

**Capgras syndrome** a condition characterized by an individual's delusional belief that loved ones (e.g., spouse, children, parents) have been replaced by doubles or impostors. This type of MISIDENTIFICATION SYNDROME may be as-

sociated with paranoid schizophrenia, a neurological disorder, or a mood disorder. Also called **illusion of doubles**. [first described in 1923 by Jean Marie Joseph Capgras (1873–1950), French psychiatrist]

**capitalism** *n.* an economic system emphasizing individual enterprise, free-market principles, profit taking, and private or corporate ownership of capital, rather than state control of the economy as in socialism or communism.

—**capitalist** *n., adj.*

**capitalization** *n.* the process by which people take advantage of and build on positive events in their lives. Capitalization is most often studied in social contexts, in which people share news of their personal good fortune with others for various social purposes, such as to heighten enjoyment of the experience, to create a positive impression in others' eyes, or to enhance the memorability of the event. It is often contrasted with SOCIAL SUPPORT as a means of coping with negative events.

**capitalization on chance** drawing a conclusion from data wholly or partly biased in a particular direction by chance. A common example of capitalization on chance is the presentation of all the significant results in a study without considering the number of results examined.

**capitation** *n.* a method of payment for health care services in which a provider or health care facility is paid a fixed amount for each person served under a risk contract. Capitation is the characteristic payment method of HMOs.

—**capitated** *adj.*

**caprylic** *adj.* denoting one of the four primary odor qualities in the CROCKER–HENDERSON ODOR SYSTEM. This quality is called HIRCINE in the ZWAARDEMAKER SMELL SYSTEM.

**capsaicin** *n.* a compound, synthesized by various plants to deter predators, that elicits the sensation of burning. Capsaicin is responsible for the “hot” taste of chili peppers. It is used medicinally in topical ointments to relieve peripheral neuropathy.

**captioning** *n.* the display of the text of spoken words, typically used in theaters, on television (see CLOSED-CAPTIONED TELEVISION), and in films, to allow those with hearing loss to follow verbal presentations or dramatic dialogue and action.

**captivity** *n.* **1.** the state or period of being confined, detained, incarcerated, imprisoned, or enslaved. See also POSTCAPTIVITY HEALTH PROBLEMS; PRISONER OF WAR. **2.** the state of a nonhuman animal that is housed in an environment different from its natural environment and is prevented from returning to its natural environment. Much research is done on animals in captivity in order to have careful experimental control over environmental and social variables. Compare FIELD RESEARCH.

**capture–tag–recapture sampling** a method of SAMPLING that is used to estimate population size. For example, to estimate the number of fish in a lake, a random sample of fish (e.g., 100) would be drawn and tagged, then returned to the lake. The lake would be resampled, and the results (i.e., the fraction of tagged fish in the new sample) would be used to estimate the total number of fish in the lake. Also called **capture–recapture sampling; mark-and-recapture sampling**.

**CAR** abbreviation for CONDITIONED AVOIDANCE RESPONSE.

**carbamate** *n.* any of a class of acetylcholinesterase inhibitors (see CHOLINESTERASE) used in the treatment of de-

mentia. Carbamates can delay the progression of certain dementias, slowing declines in cognitive function and in activities of daily living. They are preferred to earlier generations of acetylcholinesterase inhibitors because of their relatively benign side effects, relative lack of liver toxicity, and improved dosing schedule (they need to be administered only once or twice a day). An example is RIVASTIGMINE.

**carbamazepine (CBZ)** *n.* a drug that is related to the TRICYCLIC ANTIDEPRESSANTS but used mainly as an ANTI-CONVULSANT. It is used also for the relief of symptoms of TRIGEMINAL NEURALGIA and as a MOOD STABILIZER in mania. U.S. trade name (among others): **Tegretol**.

**carbidopa** *n.* see SINEMET.

**carbohydrate** *n.* any of a group of organic compounds that have the general formula  $C_x(H_2O)_y$ . They range from relatively small molecules, such as simple sugars (e.g., GLUCOSE), to macromolecular substances, such as starch, glycogen, and cellulose. Carbohydrates of plant origin form a major source of energy in the diet of animals.

**carbohydrate metabolism** the utilization by the body of starches, sugars, and other CARBOHYDRATES, which are broken down by various enzymes to GLUCOSE molecules. Glucose is the ultimate source of cellular energy for the brain and other organs.

**carbon dioxide** (formula:  $CO_2$ ) a colorless, odorless, incombustible gas formed during respiration, decomposition of organic substances, and combustion. All life on earth is carbon based. The increasing  $CO_2$  concentration in the atmosphere is considered to be a main cause of global warming.

**carbon dioxide therapy** a form of inhalation therapy, now no longer in use, that was occasionally applied (in conjunction with psychotherapy) to patients with anxiety, conversion, or psychophysiological symptoms. [first used in the 1920s by Hungarian-born U.S. psychiatrist Ladislaus Joseph Meduna (1896–1964) to induce unconsciousness as a means of interrupting pathological brain circuits]

**carbonic anhydrase inhibitor** any of a group of drugs that interfere with the action of the enzyme carbonic anhydrase in the body. Although their primary role was originally as diuretics, via their ability to block reabsorption of sodium bicarbonate from the proximal renal tubule, thus improving urine excretion and electrolyte balance, their use has been supplanted by less toxic diuretics. At present, **acetazolamide** (the prototype; U.S. trade name: Diamox) and other carbonic anhydrase inhibitors are used primarily for the management of glaucoma and acute mountain sickness. The drugs are also used as adjunctive agents in the management of epilepsy. Acetazolamide inhibits epileptic seizures and decreases the rate of cerebrospinal fluid formation.

**carbon monoxide poisoning** a toxic disorder resulting from inhalation of carbon monoxide, a colorless, odorless gas. Depending on the severity of the exposure, symptoms, which are produced by lack of oxygen, range from headache and light-headedness to an acute, transient state of confusion and delirium to deep coma followed by permanent brain damage and death by asphyxiation. Also called **carbon monoxide intoxication**.

**carbon tetrachloride** a volatile industrial solvent that, when inhaled, can produce euphoria, disorientation and depersonalization, and other behavioral effects similar to

those produced by the major sedatives. Continued use can lead to the rapid development of persisting dementia, as well as severe physical problems and death. Due to its adverse health effects and because it is known to deplete the ozone layer, carbon tetrachloride is no longer in common use. See also INHALANT.

**carcinogen** *n.* any substance that initiates the development of CANCER (**carcinogenesis**) when exposed to living tissue. Tobacco smoke, which induces lung cancer, is an example. —**carcinogenic** *adj.*

**carcinoma** *n.* see CANCER.

**cardi-** *combining form* see CARDIO-.

**cardiac death** see BRAIN DEATH.

**cardiac index** a measure of the cardiac output (i.e., the volume of blood pumped by the heart per minute) per square meter of body surface.

**cardiac muscle** the specialized muscle tissue of the heart. It consists of striated fibers that branch and interlock and are in electrical continuity with each other. This arrangement permits ACTION POTENTIALS to spread rapidly from cell to cell, allowing large groups of cells to contract in unison. Compare SKELETAL MUSCLE; SMOOTH MUSCLE.

**cardiac neurosis** an anxiety reaction precipitated by a heart condition, the suspicion of having a heart condition, or the fear of developing coronary disease. In some cases, a cardiac neurosis develops when the patient detects a harmless heart murmur, palpitations, or a chest pain due to emotional stress. In other cases, it may be caused or aggravated by a physician's examination (see IATROGENIC). Cardiac anxiety is a common symptom of PANIC DISORDER; it may also be a focus in HYPOCHONDRIASIS.

**cardiac pacemaker** an electrical device that is surgically implanted into the chest to regulate an abnormal heart rhythm. Electrical leads from the device are placed in specific areas of the heart, and transducers can monitor the heart's rate of contraction and deliver an electric charge only when the organ is not functioning as desired.

**cardiac psychology** an emerging subspecialty of BEHAVIORAL MEDICINE that studies how behavioral, emotional, and social factors influence the development, progression, and treatment of CORONARY HEART DISEASE (CHD). Among the psychosocial factors that have been linked to the onset and exacerbation of CHD are anger, hostility (see TYPE A PERSONALITY), anxiety, depression, psychological stress, job stress, and social isolation or lack of social support. Contextual factors, including socioeconomic status and ethnicity, may contribute to CHD as well. These variables influence the disease's development both directly by damaging the cardiovascular system through alterations of physiological functioning (e.g., high levels of stress hormones, exaggerated CARDIOVASCULAR REACTIVITY) and indirectly by facilitating unhealthy practices such as cigarette smoking, lack of exercise, and poor diet. In addition to researching the causal relationships between psychosocial factors and cardiovascular disease, **cardiac psychologists** design interventions to prevent the disease or improve the prognosis and quality of life of those who already have it. These interventions focus on the nonphysical aspects of adopting and maintaining healthier lifestyles. For example, cardiac psychologists often provide information about CHD, teach constructive coping strategies (e.g., relaxation skills, time management skills, stress management skills), and conduct individual and group therapy to

address illness-related and mental health issues. Also called **behavioral cardiology**; **psychocardiology**.

**cardinal** *adj.* describing a number that indicates a count of a set of items, such as two dogs or three circles, but does not indicate order within the set. A child's understanding of the concept of cardinal numbers is an area of study in developmental psychology. Compare **NOMINAL**; **ORDINAL**.

**cardinal disposition** see **PERSONAL DISPOSITION**.

**cardinal humors** see **HUMORAL THEORY**.

**cardinality** *n.* the number of items in a set. In children, the ability to understand that the last number counted in a set represents the set's overall cardinal value is evident by the age of 2 or 3.

**cardinal virtues** in medieval philosophy, the four virtues on which all other virtues were thought to hinge, namely, prudence, courage, temperance, and justice. The cardinal or "natural" virtues were seen as available to all humans without the aid of divine grace; as such they were often contrasted with the "theological" virtues of faith, hope, and charity.

**cardio-** (**cardi-**) *combining form* heart.

**cardiogram** *n.* a graphic tracing of some aspect of heart activity, usually electrical activity (see **ELECTROCARDIOGRAM**). The tracing is produced by the styllet of a recording instrument called a **cardiograph**, and the procedure itself is called **cardiography**.

**cardiomyopathy** *n.* any disease involving the heart muscle, particularly when the specific cause is uncertain.

**cardiophobia** *n.* an excessive and irrational fear of the heart or, more commonly, of having or developing heart disease. See **CARDIAC NEUROSIS**.

**cardiopulmonary bypass machine** a mechanical device that carries out the functions of the heart and lungs for short periods during surgery involving these organs. The machine collects blood from the veins before it reaches the heart and circulates it through a plastic chamber in which it is freshly oxygenated before being pumped back into the patient's arteries.

**cardiovascular (CV)** *adj.* relating to the heart and blood vessels or to blood circulation.

**cardiovascular disease** any disease, congenital or acquired, that affects the heart and blood vessels. Cardiovascular diseases include **HYPERTENSION**, congestive heart failure, myocardial **INFARCTION**, **ARTERIOSCLEROSIS**, and **CORONARY HEART DISEASE**.

**cardiovascular reactivity** the degree of change of cardiovascular responses (e.g., blood pressure, heart rate) to a psychological or physiological challenge or stressor. Exaggerated cardiovascular reactivity may indicate risk for development of cardiovascular conditions, such as **HYPERTENSION** or **CORONARY HEART DISEASE**.

**cardiovascular system** the heart and blood vessels, which are responsible for the circulation of blood around the body. Also called **circulatory system**.

**card-sorting test** a test in which the participant is asked to sort randomly mixed cards into specific categories. Such tests may be used to determine frontal lobe functioning, learning ability, discriminatory powers, or clerical aptitude. See **WISCONSIN CARD SORTING TEST**.

**card-stacking** *n.* a technique of persuasion that attempts to influence opinion through deliberate distortions, as in suppressing information, overemphasizing selected facts, manipulating statistics, and quoting rigged or questionable research.

**CARE** acronym for **COMMUNICATED AUTHENTICITY, REGARD, EMPATHY**.

**care-and-protection proceedings** court intervention on behalf of a child when the parents or caregivers do not adequately provide for the child's welfare.

**career anchor** a pattern of self-perceived work skills, interests, abilities, and values that are developed in the early stages of a person's career and that guide subsequent career decisions. The nine anchors are technical or functional competence, managerial competence, creativity, security, autonomy, entrepreneurship, challenge, lifestyle, and service or dedication to the cause. [proposed by Swiss-born U.S. psychologist Edgar H. Schein (1928– )]

**career choice** the selection of a vocation, usually on the basis of such factors as parental guidance, **VOCATIONAL GUIDANCE**, identification with admired figures, trial or part-time jobs, training opportunities, personal interests, and ability tests.

**career conference** a vocational meeting provided by many schools in which representatives of a given occupational field meet interested students to provide information and answer questions related to the requirements for, and opportunities available in, that field.

**career counseling** consultation, advice, or guidance specifically focused on a person's career opportunities, most often provided in educational, work, and some community settings. It also may have the specific goal of enabling a person to change the direction of his or her career. The counseling will take account of an individual's preferences, intelligence, skill sets, work values, and experience. Such counseling is offered to groups as well as individuals. Also called **career guidance**.

**career development** **1.** the manner in which a person manages the progress of his or her career, both within and between organizations. The issues that individuals must confront in their career development differ as a function of whether they are in the early, middle, or late stage of their careers. See also **PROFESSIONAL DEVELOPMENT**. **2.** the ways in which an organization structures the career progress of its employees, typically so that they are rewarded with higher levels of pay, status, responsibility, and satisfaction as they gain skills and experience.

**career guidance** see **CAREER COUNSELING**.

**career planning** a **VOCATIONAL GUIDANCE** program designed to assist a client in choosing an occupation. A realistic appraisal of the individual's desires and abilities is formulated in relation to existing occupational opportunities. Various tests may be administered to aid a counselor in assessing a client's skills and aptitudes.

**career workshop** a **VOCATIONAL GUIDANCE** intervention consisting of a study group in which occupational opportunities and requirements are discussed and explored.

**caregiver** *n.* **1.** a person who attends to the needs of and provides assistance to someone else who is not fully independent, such as an infant or an ill adult. A person who does the majority of the work is called the **primary caregiver**. **2.** in health care, any individual involved in the

process of identifying, preventing, or treating an illness or disability. —**caregiving** *adj.*

**caregiver burden** the stress and other psychological symptoms experienced by family members and other non-professional caregivers in response to looking after individuals with mental or physical disabilities, disorders, or diseases. See also BURNOUT; COMPASSION FATIGUE.

**care of young** a manifestation of PARENTAL BEHAVIOR or ALLOPARENTING in animals, usually stimulated by hormonal and other physiological changes when in the presence of offspring. These include the secretion of PROLACTIN, which induces broodiness and parental feeding of young in birds and milk production in mammals.

**caretaking behavior** the behavior of parents or allo-parents (**caretakers**) in attending to the needs of infants, responding to them when they approach or vocalize and protecting them from the aggression of others. See ALLOPARENTING; CARE OF YOUNG; PARENTAL BEHAVIOR.

**carezza (karezza)** *n.* a form of coitus in which the man does not reach orgasm. It is sometimes used as a means of birth control, but if combined with meditation, it is similar to the COITUS RESERVATUS technique. Carezza techniques are derived from principles of Hindu Tantrism and in this sense were first described by U.S. gynecologist Alice B. Stockham (1833–1912) in 1896. Also called **coitus pro-longatus**.

**cargo cult** **1.** a system of beliefs found in the South Pacific islands, based on the notion that ritual worship will result in the attainment of modern material goods through supernatural means. It originated in indigenous religious practices in the 19th century and was altered, stimulated, and broadened from contact with Western cultures during World War II, when military forces stationed in the islands received regular deliveries of goods by air. **2.** the naive assumption that a superficial imitation of the manners, behavior, or style of influential or prosperous groups in society will bring one comparable wealth or status.

**carisoprodol** *n.* a drug belonging to the PROPANEDIOLS, a group originally developed as anxiolytics. Carisoprodol is now used as a MUSCLE RELAXANT and is increasingly seen as an intoxicant drug of abuse. U.S. trade name: **Soma**.

**carnal** *adj.* relating to the physical desires and appetites of the body, particularly sexual ones. **Carnal knowledge** is a mainly legal term for sexual intercourse.

**carotid artery** either of the two major arteries that ascend the right and left sides of the neck to the head and brain. The branch that enters the brain is the INTERNAL CAROTID ARTERY, whereas the **external carotid artery** supplies the face and scalp. Both branches arise from the **common carotid artery** on each side of the lower neck.

**carotid sinus** a small dilation in the common CAROTID ARTERY at its bifurcation into the external and internal carotids. It contains BARORECEPTORS that, when stimulated, cause slowing of the heart rate, vasodilation, and a fall in blood pressure. It is innervated primarily by the GLOSSOPHARYNGEAL NERVE.

**carotid-sinus syndrome** see AORTIC ARCH SYNDROME.

**carotid stenosis** see STENOSIS.

**carotodynia** *n.* pain in the cheek, neck, and region of the eyes resulting from pressure on the common carotid artery.

**carpal age** an individual's ANATOMICAL AGE as estimated from the degree of ossification of the carpal (wrist) bones.

**carpal tunnel syndrome (CTS)** an inflammatory disorder of the hand caused by repetitive stress, physical injury, or other conditions that cause the tissues around the median nerve to become swollen. It occurs either when the protective lining of the tendons within the **carpal tunnel** become inflamed and swell or when the ligament that forms the roof of the tunnel becomes thicker and broader. See REPETITIVE STRAIN INJURY.

**carpentered environment** an environment consisting of built structures in which rectangles are predominant. Some hypotheses about DEPTH PERCEPTION and OPTICAL ILLUSIONS have suggested that people in carpentered environments interpret parallelograms (or parts of parallelograms) in two-dimensional drawings in ways that are consistent with perception of three-dimensional objects, such as doors, windows, and corners.

**Carpenter's syndrome** an autosomal recessive hereditary disorder marked by a pointed skull, webbing of the fingers and toes, subaverage intelligence, and usually obesity. Also called **acrocephalopolysyndactyly**. [George Alfred Carpenter (1859–1910), British physician]

**carphology** *n.* see FLOCCILLATION.

**carrier** *n.* **1.** an individual with a gene for a recessive trait that is unexpressed in that individual but that may be expressed in offspring if the individual reproduces with another carrier of the same gene. **2.** an individual who is infected with a pathogen for a disease and is capable of infecting others but does not develop the disease. **3.** an individual who has a mutation in a gene that conveys either increased susceptibility to a disease or other condition or the certainty that the condition will develop. A **BRCA1** mutation carrier, for example, is a person who carries an altered **BRCA1** gene (see **BRCA1** and **BRCA2**). This alteration is responsible for significantly raising the likelihood that the person, if female, will develop breast or ovarian cancer. See also OBLIGATE CARRIER.

**carrier wave** see MODULATION.

**carryover effect** the effect on the current performance of a research participant of the experimental conditions that preceded the current conditions; where such an effect is significant, it may be difficult to determine the specific influence of the variable under study. For example, in a CROSSOVER DESIGN in which a particular drug is administered to nonhuman animals in the first experimental condition, a carryover effect would be evident if the drug continued to exert an influence on the animals' performance during a subsequent experimental condition. Also called **holdover effect**. See WASH-OUT PERIOD.

**CART analysis** classification and regression tree analysis: a method of classifying data into successively smaller and more homogeneous subgroups according to a set of PREDICTOR VARIABLES. CART analysis is similar to but distinct from REGRESSION ANALYSIS in its homogeneity of case subsets. The results of a CART analysis may be displayed in a diagram resembling a tree—subsets of data, based on values of the outcome variable, are shown to branch off from higher level subsets of data.

**Cartesian coordinate system** a system for locating a point in an *n*-dimensional space on a graph by indicating the distance of the point from a common origin along each of *n* axes. The most common application of the Cartesian

system is one based on two dimensions, represented by two perpendicular lines that intersect at a specific spot called the origin. In such a two-dimensional Cartesian coordinate system, the horizontal line is often referred to as the X-AXIS and the vertical line as the Y-AXIS. For example, the coordinate (3, 4) represents an *x* value of 3 and a *y* value of 4 on the graph; thus, from the origin one would count three units over on the *x*-axis and four units up on the *y*-axis to locate the coordinate point. [René DESCARTES]

**Cartesian dualism** the position taken by René DESCARTES that the world comprises two distinct and incompatible classes of substance: RES EXTENSA, or extended substance, which extends through space; and RES COGITANS, or thinking substance, which has no extension in space. The body (including the brain) is composed of extended and divisible substance, whereas the mind is not. For Descartes, this means that the mind would continue to exist even if the material body did not. He accepted that there is interaction between mind and body, holding that in some activities the mind operates independently of bodily influences, whereas in others the body exerts an influence. Similarly, in some bodily activities there is influence from the mind, whereas in others there is not. Descartes proposed that the locus for the interaction of the mind and body is the point in the pineal gland in the brain termed the CONARIUM. However, to the question of how such incompatible substances can interact at all, Descartes had no answer. See DUALISM; GHOST IN THE MACHINE; MIND–BODY PROBLEM.

**Cartesianism** *n.* the system of philosophy developed by René DESCARTES. The three fundamental tenets of the system are (a) that all knowledge forms a unity; (b) that the purpose of knowledge is to provide humankind with the means of mastery over the natural world; and (c) that all knowledge must be built up from a foundation of indubitable first principles, the truth of which can be known intuitively (see INNATE IDEAS). Many ideas and assumptions influential in psychology can be traced back to Descartes, including the notion of a rational self capable of knowing truth, the contention that the most trustworthy knowledge is of the contents of one's own mind, and the idea that the deductive methods that have been successful in producing certainty in mathematics can be applied to produce equally valid knowledge in other fields of human endeavor. Of particular importance to the development of psychology are Descartes' understanding of the ego (see CARTESIAN SELF) and his attempt to explain the relation of the mind to the body (see CARTESIAN DUALISM). See also MODERNISM; RATIONALISM. —**Cartesian** *adj.*

**Cartesian self** in the system of René DESCARTES, the knowing subject or ego. The Cartesian self is capable of one fundamental certainty because, even if all else is subject to doubt, one cannot seriously doubt that one is thinking, as to doubt is to think. Thus, Descartes concludes, COGITO ERGO SUM ("I am thinking, therefore I exist"). From this position, Descartes argues that all ideas intuited by the self with the same clarity and distinctness as the *cogito* must be equally true; this enables the intuition of further indubitable truths, such as the existence of God and the external world. However, since the ideas clearest to the self are the contents of the mind, the notion of the Cartesian self has led to a radical DUALISM between the inner life of the mind (subjectivity) and the outer world of things (objectivity). It has also led to the idea that knowledge is necessarily subjective and has opened the question as to how the outer world, including other human beings, can be

known except as an idea. See CARTESIAN DUALISM; EGOCENTRIC PREDICAMENT; SOLIPSISM.

**Cartesian theater** a metaphorical conception of CONSCIOUSNESS identified as the traditional view by U.S. philosopher Daniel C. Dennett (1942– ), who has challenged its adequacy. Based on the idea of the knowing subject or ego defined by René DESCARTES, the Cartesian theater is envisioned as a place where all aspects of experience come together to provide a unified phenomenal world. See CARTESIAN DUALISM; CARTESIAN SELF.

**Carus typology** a classification of individuals into five body types: ATHLETIC TYPE, PHLEGMATIC TYPE, PHTHISIC TYPE, CEREBRAL TYPE, and sterile type. [Carl Gustav Carus (1789–1868), German physiologist and psychologist]

**carve out** to eliminate coverage for specific health care services (e.g., mental health or substance abuse) from a health care plan and contract for those services from a separate provider. —**carve-out** *n.*

**Carver and White's BIS/BAS scales** a set of self-report scales used to assess an individual's dispositional sensitivities within the BEHAVIORAL INHIBITION SYSTEM (BIS) and BEHAVIORAL APPROACH SYSTEM (BAS). It comprises a single scale with statements intended to elicit measures of behavioral inhibition and three scales with statements intended to elicit measures of specific aspects of behavioral activation: that is, **reward responsiveness**, **drive**, and **fun-seeking**. Each item is answered using a 4-point LIKERT SCALE, ranging from 1 (*very true for me*) to 4 (*very false for me*). [developed in 1994 by U.S. psychologists Charles S. Carver (1947– ) and Teri L. White (1963– )]

**CAS** abbreviation for COGNITIVE ASSESSMENT SYSTEM.

**Casanova complex** a man's desire to have a large number of lovers, leading to very active pursuit of women and attempts to seduce or entice women into having sexual intercourse without any emotional relationship or commitment. The complex is named for Giovanni Jacopo Casanova (1725–1798), an Italian memorist and adventurer noted for his sexual conquests.

**case** *n.* 1. an instance of a disease or disorder, usually at the level of the individual patient. In a **borderline case**, the symptoms resemble those of a disease or disorder but do not fully meet the criteria. See also PROBAND. 2. a person who is the recipient of assistance (e.g., from a health care professional or lawyer). 3. a unit or observation to be analyzed, such as a nonhuman animal, a person, a group, an institution, an object, or any other entity from which a researcher gathers data. 4. a feature of certain languages in which the forms of nouns, pronouns, and (sometimes) adjectives are altered to indicate their syntactic relations with other words in a sentence. The role of case is most significant in highly inflected languages, such as German or Latin. In English, case endings are now restricted to the personal and possessive pronouns (*I, me, mine*, etc.) and to plural and possessive nouns (e.g., *dogs, children, girl's, girls'*). See ACCUSATIVE; DATIVE; GENITIVE; NOMINATIVE. 5. one of various categories used in CASE GRAMMAR to classify the elements of a sentence in terms of their semantic relations with the main verb. See AGENT; EXPERIENCER; INSTRUMENTAL; PATIENT.

**case advocate** see ADVOCACY.

**case alternation** in reading research, a procedure for stimulus presentation in which the characters of stimulus words switch between upper and lower case. The change is

usually made in one of six ways: (a) to the complete word (*APPLE/apple*), (b) to alternate letters (*ApPIE*), (c) after the second letter (*APple*), (d) after the third letter (*APple*), (e) after the fourth letter (*APPLe*), or (f) after each pair of letters (*APpIE*).

**case-based reasoning** **1.** an approach in which information about or obtained from previous similar situations (cases) is applied to the current situation, typically to make a decision or prediction or to solve a problem. See also ANALOGICAL THINKING. **2.** in ergonomics, the use of detailed scenarios or cases to elicit users' knowledge, reasoning patterns, motivations, or assumptions regarding a product or system. See KNOWLEDGE ELICITATION.

**case-control study** a type of study in which a group of individuals diagnosed with a disease or other condition is compared to a group of individuals without the disease diagnosis, specifically with regard to the proportion of people in each group who were exposed to a certain risk factor. Also called **case-control design**; **case-referent study**.

**case-finding** *n.* the process of identifying individuals who need treatment for mental disorders by administering screening tests, locating individuals who have contacted social agencies or mental health facilities, obtaining referrals from general practitioners, or via triage after a disaster.

**case grammar** in linguistics, an analysis of sentences that gives primacy to the semantic relations between words (e.g., whether they are the AGENT or the PATIENT of the action described) rather than to their syntactic relations (e.g., whether they are the SUBJECT or the OBJECT of the sentence). In the two sentences *The boy hit the ball* and *The ball was hit by the boy*, a case-grammar analysis would focus on the fact that *boy* is the agent of the action in both sentences, rather than the fact that it is the subject of the first sentence and the object in the second. Psychologists have shown a strong interest in case grammar because of its affinity to psychological categories of meaning. See also EXPERIENCER; INSTRUMENTAL.

**case history** a record of information relating to a person's psychological or medical condition. Used as an aid to diagnosis and treatment, a case history usually contains test results, interviews, professional evaluations, and sociological, occupational, and educational data. Also called **patient history**.

**case law** a body of law established by a series of court decisions. Case law is distinguished from laws that arise from legislation. See also COMMON LAW.

**case load** the amount of work required of a psychotherapist, psychiatrist, doctor, social worker, or counselor during a particular period, as computed by the number of clients assigned to him or her and the comparative difficulty of their cases.

**case management** a system of managing and coordinating the delivery of health care in order to improve the continuity and quality of care and to reduce costs. Case management is usually a function of a hospital's UTILIZATION REVIEW department.

**case manager** a health care professional, usually a nurse or social worker, who works with patients, providers, and health insurance plans to coordinate the continuity and cost-effectiveness of services.

**case method** in industrial and organizational psychology, a PERSONNEL TRAINING technique in which a group of managers or supervisors are presented with an actual or

hypothetical business problem, through written materials, audiovisual media, or live role play, and are required to generate solutions. See also BUSINESS GAME; CONFERENCE METHOD; MULTIPLE-ROLE PLAYING; SCENARIO ANALYSIS.

**case report** a collection of data relating to a person's psychological or medical condition.

**case study** an in-depth investigation of a single individual, family, event, or other entity. Multiple types of data (psychological, physiological, biographical, environmental) are assembled, for example, to understand an individual's background, relationships, and behavior. Although case studies allow for intensive analysis of an issue, they are limited in the extent to which their findings may be generalized.

**casewise deletion** see LISTWISE DELETION.

**casework** *n.* the tasks carried out by a professional, usually a social worker known as a **caseworker**, that include identifying and assessing the needs of an individual and his or her family and providing or coordinating and monitoring the provision of such services as private counseling, treatment in a hospital or other institution, or arranging for public assistance, housing, and other aid. Also called **social casework**.

**Caspar Hauser experiment** any procedure in which an animal is deprived of its natural environment or sensory stimulation from birth onward. The experiment is named for an early 19th-century German child (c. 1812–1833) who allegedly was raised in this manner.

**cassina** *n.* a perennial evergreen shrub, *Ilex vomitoria*, that grows wild in eastern North America, particularly Virginia and the Carolinas. The leaves contain caffeine and have been used by Native Americans to prepare a tealike beverage known as the "black drink" for medicinal, ceremonial, and social purposes. Also called **yaupon**; **youpon**.

**caste** *n.* **1.** any of the fixed hereditary classes of the Hindu caste system, which are held to be distinguished by different levels of essential purity. The main classes are (in order of status) brahmins or priests, warriors, merchants, and laborers; outcastes or untouchables are people of no caste. Until recently, mobility or intermarriage between castes was exceptional. See also FIXED CLASS SOCIETY; HINDUISM; SOCIAL IMMOBILITY. **2.** any system of social stratification regarded as being comparably rigid. **3.** any class of society distinguished by inherited privilege and exclusivity.

**castration** *n.* surgical removal of the testes (see ORCHIDECTOMY); less commonly, it can indicate removal of the ovaries (see OVARIECTOMY). In either men or women, inactivation of these glands can also occur from radiation, illness, or drugs (see CHEMICAL CASTRATION).

**castration anxiety** fear of injury to or loss of the genitals. In the PREGENITAL PHASE posited by Freudian psychoanalytic theory, the various losses and deprivations experienced by the infant boy may give rise to the fear that he will also lose his penis.

**castration complex** in Freudian psychoanalytic theory, the whole combination of the child's unconscious feelings and fantasies associated with being deprived of the PHALLUS, which in boys means the loss of the penis and in girls the belief that it has already been removed. It derives from the discovery that girls have no penis and is closely tied to the OEDIPUS COMPLEX.

**casual crowd** a group that forms, usually in a public

place, when circumstances cause those present to share a temporary focus. Examples include passersby pausing to watch two people arguing loudly and spectators gathered behind police barricades around a burning building.

**CAT 1.** abbreviation for CALIFORNIA ACHIEVEMENT TESTS. **2.** abbreviation for CHILDREN'S APPERCEPTION TEST. **3.** abbreviation for the British version of the COGNITIVE ABILITIES TEST. **4.** abbreviation for COMPUTER ADAPTIVE TESTING. **5.** acronym for computerized axial tomography (see COMPUTED TOMOGRAPHY).

**cata-** (**cat-**; **kata-**; **kat-**) *combining form* **1.** down or beneath (e.g., **catabolism**). **2.** reversal or degeneration (e.g., **CATATONIA**).

**catabolism** *n.* see METABOLISM. —**catabolic** *adj.*

**catabolite** *n.* a product of catabolism (see METABOLISM).

**cataplexy** *n.* a state of sustained unresponsiveness in which a fixed body posture or physical attitude is maintained over a long period of time. It is seen in cases of **CATATONIC SCHIZOPHRENIA**, **EPILEPSY**, and other disorders. Also called **catatonic rigidity**; **flexibilitas cerea**; **waxy flexibility**. See also **EPIDEMIC CATAPLEXY**. —**cataleptic** *adj.*

**catalogia** *n.* see VERBIGATION.

**catalysis** *n.* the speeding of a chemical reaction by a **CATALYST**.

**catalyst** *n.* a substance that increases the rate of a chemical reaction without itself being used up. An **ENZYME** is an organic catalyst.

**catamite** *n.* a boy who participates in sex with an adult male. See **PEDERASTY**.

**catamnesis** *n.* the medical history of a patient following the onset of a mental or physical disorder, either after the initial examination or after discharge from treatment (in the latter case, it is also known as **follow-up history**). Compare **ANAMNESIS**. See also **POSTTREATMENT FOLLOW-UP**.

**cataphasia** *n.* **1.** a language disorder characterized by repetition of a single word. **2.** see VERBIGATION.

**cataphora** *n.* a type of coma that may be interrupted by intervals of partial consciousness.

**cataplexy** *n.* a sudden loss of muscle tone that may be localized, causing (for example) loss of grasp or head nodding, or generalized, resulting in collapse of the entire body. It is a temporary condition usually precipitated by an extreme emotional stimulus (e.g., an uncontrollable fit of laughter; overwhelming anxiety, excitement, or anger). See **NARCOLEPSY**; **NARCOLEPSY-CATAPLEXY SYNDROME**. —**cataplectic** *adj.*

**Catapres** *n.* a trade name for **CLONIDINE**.

**cataract** *n.* a progressive clouding (opacification) of the lens of the eye that eventually results in severe visual impairment if untreated. Central vision in particular is impaired, with symptoms including dim or fuzzy vision, sensitivity to glare, and difficulty seeing at night. Cataract is frequently associated with the degenerative processes of aging, but it may also be congenital or due to disease or injury.

**catarrhal ophthalmia** see **OPHTHALMIA**.

**catastrophe theory** a mathematical theory regarding discontinuous (discrete) changes in one variable as a function of continuous change in some other variable or varia-

bles. It proposes that a small change in one factor may cause an abrupt and large change in another, for example, the dramatic change in the physical properties of water as the temperature reaches 0 °C or 100 °C (32 °F or 212 °F). Catastrophe theory models are classified according to the number of control parameters, the most common being the **cuspl catastrophe model**, in which two control parameters are varied simultaneously. This model has been used in various areas of investigation, such as figure perception, cognitive development, industrial accidents, and task performance. The cuspl catastrophe model of anxiety and task performance, for example, proposes that under conditions of high anxiety, as physiological arousal increases, performance will increase to a certain point but that past this point a catastrophic drop in performance will occur. To regain an optimal level of performance, a substantial lowering of physiological arousal is necessary. [originated by French mathematician René Frédéric Thom (1923–2002)]

**catastrophic illness** a severe illness, acute or chronic, that is likely to result in serious disability or death. Treatment is typically prolonged, intense, and costly.

**catastrophic reaction** **1.** a breakdown in the ability to cope with a threatening or traumatic situation. The individual experiences acute feelings of inadequacy, anxiety, frustration, and helplessness. **2.** highly emotional behavior (extreme anxiety, sudden crying, aggressive or hostile behavior, etc.) sometimes observed in individuals who have brain damage, including those with **APHASIA**. The origin of this behavior remains unclear, although U.S. neurologist D. Frank Benson (1928–1996) ascribed such reactions to individuals' frustration, embarrassment, or agitation at their struggle to communicate or perform tasks they had previously performed with ease. Also called **catastrophic behavior**. [first described by Kurt GOLDSTEIN]

**catastrophic stress** an overwhelming reaction to a traumatic event that is beyond the limits of normal life, such as rape, torture, genocide, or severe war-zone experiences.

**catastrophize** *vb.* to exaggerate the negative consequences of events or decisions. People are said to be catastrophizing when they think that the worst possible outcome will occur from a particular action or in a particular situation or when they feel as if they are in the midst of a catastrophe in situations that may be serious and upsetting but are not necessarily disastrous. The tendency to catastrophize can unnecessarily increase levels of anxiety and lead to maladaptive behavior. The verb, as well as its synonym **awfulize**, was coined by Albert ELLIS. —**catastrophizing** *n.*

**catathymic crisis** see **ISOLATED EXPLOSIVE DISORDER**.

**catatonia** *n.* a state of muscular rigidity or other disturbance of motor behavior, such as **CATAPLEXY**, extreme overactivity, or adoption of bizarre postures. It is most frequently observed in **catatonic schizophrenia**, but it can also occur with other disorders, such as **bipolar disorder**, **major depressive disorder**, and neurological conditions such as **encephalitis**, among others. Also called **catatonic state**. —**catatonic** *adj.*

**catatonic excitement** periods of extreme restlessness and excessive and apparently purposeless motor activity, often as a symptom of **CATATONIC SCHIZOPHRENIA**.

**catatonic rigidity** see **CATAPLEXY**.

**catatonic schizophrenia** in **DSM-IV-TR**, a relatively

rare subtype of schizophrenia characterized by abnormal motor activity, specifically motor immobility (see CATALEPSY; CATATONIC STUPOR) or excessive motor activity (see CATATONIC EXCITEMENT). Other common features include extreme NEGATIVISM (apparently motiveless resistance to all instructions or maintenance of a rigid posture against attempts to be moved) or MUTISM; peculiarities of voluntary movement, such as POSTURING or stereotyped movements; and ECHOLALIA or ECHOPRAXIA. This subtype has been eliminated from DSM-5.

**catatonic state** see CATATONIA.

**catatonic stupor** a state of significantly decreased reactivity to environmental stimuli and events and reduced spontaneous movement, often as a symptom of CATATONIC SCHIZOPHRENIA.

**catchment area** the geographic area served by a health care program (e.g., a community mental health center).

**catch trial** a trial within an experiment in which a stimulus is not present but the participants' responses nonetheless are recorded. For example, in an experiment in which participants identify auditory signals, catch trials are those in which no signal is given. The use of a catch trial may help to estimate the level at which a participant is guessing when no stimulus is present. See also BLANK TRIAL.

**cat-cry syndrome** see CRI DU CHAT SYNDROME.

**catecholamine** *n.* any of a class of BIOGENIC AMINES formed by a catechol molecule and an amine group. Derived from tyrosine, catecholamines include dopamine, epinephrine, and norepinephrine, which are the predominant neurotransmitters in the SYMPATHETIC NERVOUS SYSTEM.

**catecholamine hypothesis** the hypothesis that deficiencies in the catecholamine neurotransmitters norepinephrine, epinephrine, and dopamine at receptor sites in the brain lead to a state of physiological and psychological depression, and that an excess of such neurotransmitters at these sites is responsible for the production of mania. The catecholamine hypothesis underlay the development of the early tricyclic antidepressants in the late 1950s, as it had been known that these compounds inhibited the reuptake of norepinephrine into presynaptic neurons. Despite numerous shortcomings, the catecholamine hypothesis, and the related MONOAMINE HYPOTHESIS, became the dominant hypotheses in the biological treatment of depression in the last half of the 20th century.

**catecholaminergic** *adj.* responding to, releasing, or otherwise involving CATECHOLAMINES. For example, a **catecholaminergic neuron** is one that releases norepinephrine or another catecholamine as a neurotransmitter.

**catechol-O-methyltransferase (COMT)** *n.* an enzyme, found at synapses of neurons, that deactivates CATECHOLAMINES.

**categorical** *adj.* referring to a characteristic that is used to classify units, usually individuals or experimental conditions, for the purposes of study. For example, participants may be classified as males or females in a particular study; in this case, sex is categorical.

**categorical attitude** see ABSTRACT ATTITUDE.

**categorical classification** see CONCEPTUAL CLASSIFICATION.

**categorical data** information that consists of counts or observations in specific categories rather than measure-

ments. Categorical data that have a meaningful order are referred to more specifically as ORDINAL DATA, whereas categorical data without a meaningful order are known as NOMINAL DATA.

**categorical data analysis** any of several statistical procedures used to model variables that indicate counts or observations in specific categories, often as a function of one or more predictor variables. For example, counts of survival status (e.g., life vs. death) may be compared by treatment condition (e.g., treatment vs. no treatment). Techniques commonly used in categorical data analysis include the CHI-SQUARE TEST, LOGISTIC REGRESSION, and PROBIT ANALYSIS.

**categorical imperative** the moral directive articulated by Immanuel KANT that one's behavior should be guided by maxims that one would be comfortable to hold as universal laws governing the actions of all people in the same circumstances. Because it is absolute and unconditional, the categorical imperative contrasts with a HYPOTHETICAL IMPERATIVE of the type "If you would achieve end Y, take action Z." The categorical imperative has been extremely influential in moral philosophy and in theories of moral behavior in psychology. See also UNIVERSALIZABILITY.

**categorical intrusion** in a memory recall test, the recall by the participant of one or more items that were not presented for memorization but are from the same semantic category (e.g., names, animals, foods) as the presented items. See CATEGORIZED LIST; DEESE-ROEDIGER-MCDERMOTT PARADIGM.

**categorical perception** in speech perception, the phenomenon in which a continuous acoustic dimension, such as VOICE-ONSET TIME, is perceived as having distinct categories with sharp discontinuities at certain points. Whereas discrimination is much more accurate between categories, individuals tested are often unable to discriminate between acoustically different stimuli that fall within the same categorical boundaries. Categorical perception is crucial in the identification of PHONEMES.

**categorical scale** a sequence of numbers that identifies items as belonging to mutually exclusive categories. For example, a categorical scale for the political party affiliation of a group of Americans might use 1 to denote Republican, 2 to denote Democrat, and 3 to denote Independent. When the number sequence has a meaningful order a categorical scale is more precisely called an ORDINAL SCALE; when it is devoid of such meaningful order it is known as a NOMINAL SCALE.

**categorical thought** in PIAGETIAN THEORY, thinking that involves the use of general concepts and classifications (i.e., ABSTRACT THINKING). It is particularly lacking in young children, who tend to think concretely (see CONCRETE THINKING).

**categorical variable** a variable that is defined by a set of two or more categories. Examples include a person's sex, marital status, or rankings of particular stimuli (such as the relative loudness of different sounds). Specialized methods of CATEGORICAL DATA ANALYSIS are available for assessing information obtained from the measurement of categorical variables.

**categories of thought** in the thought of Immanuel KANT, 12 basic concepts of human understanding that are essential to the interpretation of empirical experience. These include such fundamental ideas as unity, plurality, reality, negation, causality, and so on. Although they are



necessary to the understanding of sense experience, the categories are themselves A PRIORI rather than empirically given. Time and space play a similar role in ordering one's sense impressions but are classed by Kant as immediate intuitions rather than categories of thought. The categories are applicable only to the world of appearances or PHENOMENA; there is no reason to suppose that they apply to things-in-themselves (see NOUMENON).

**categorization** *n.* the process by which objects, events, people, or experiences are grouped into classes on the basis of (a) characteristics shared by members of the same class and (b) features distinguishing the members of one class from those of another. Theories of categorization include the PROTOTYPE MODEL, EXEMPLAR THEORY, and the FAMILY RESEMBLANCE hypothesis. Also called **classification**. See also ABSTRACTION; CONCEPTUALIZATION. —**categorize** *vb.*

**categorized list** a list used in memory experiments in which the items come from one or more semantic categories (e.g., names, animals, foods). Categorized lists are often used to test FREE RECALL; the category labels (animals, foods, etc.) may be used to prompt recall.

**category fluency** see SEMANTIC FLUENCY.

**category production test** a test in which participants are given a category (e.g., types of birds) and asked to list examples of it (e.g., robin, blue jay, ostrich). It is often classified as a verbal CONCEPTUAL TEST of implicit memory. See IMPLICIT MEMORY TEST.

**category-system method** any method of measurement or classification assessment that involves sorting data elements into categories according to a set of rules. See also INTERACTION PROCESS ANALYSIS; SYMLOG.

**Category Test** a nonverbal problem-solving task that requires abstract reasoning, concept formation, and mental flexibility. The participant is presented with six subtests each comprising a different set of stimuli organized according to a specific principle and each stimulus within each set being associated with a particular number. The participant must respond by choosing a number and, using feedback about response accuracy, determine the principle of organization underlying the set of stimuli within a particular subtest. Once the principle is correctly identified, the participant can solve each item correctly within the subtest. A final subtest contains items from the previous six. The Category Test is part of the HALSTEAD–REITAN NEUROPSYCHOLOGICAL BATTERY. Also called **Halstead Category Test**. [designed in 1947 by U.S. psychologist Ward C. Halstead (1908–1969)]

**cathard** *n.* see CAFARD.

**catharsis** *n.* **1.** in psychoanalytic theory, the discharge of previously repressed affects connected to traumatic events that occurs when these events are brought back into consciousness and reexperienced. See also ABREACTION. **2.** more generally, the release of strong, pent-up emotions. [from Greek, literally: “purgation,” “purification”] —**ca-thartic** *adj.*

**cathected** *adj.* see CATHEXIS.

**cathectic discharge** see AFFECTIVE DISCHARGE.

**catheter** *n.* any flexible tubular instrument inserted into a body cavity to introduce or remove fluids or to keep a body passage open. A catheter may be indwelling, if required for a long period of time, or temporary.

**cathexis** *n.* in psychoanalytic theory, the investment of

PSYCHIC ENERGY in an OBJECT of any kind, such as a wish, fantasy, person, goal, idea, social group, or the self. Such objects are said to be **cathected** when an individual attaches emotional significance (positive or negative AFFECT) to them. See also ANTICATHEXIS; DECATHEXIS; HYPERCATHEXIS; OBJECT CATHEXIS.

**cathinone** *n.* see KHAT.

**cation** *n.* a positively charged ION, such as a potassium ion (K<sup>+</sup>) or sodium ion (Na<sup>+</sup>). Compare ANION. —**cationic** *adj.*

**catoptrics** *n.* the field of optics concerned with the reflection of light. Compare DIOPTRICS.

**cat's-eye syndrome** a rare genetic disorder caused when an individual inherits extra genetic material from chromosome 22 (see ACROCENTRIC CHROMOSOME), with widely variable features that include structural defects of the iris of the eye that produce a cat's-eye appearance, skin tags near the ear, narrowing or closure of the anus, defects of the heart or kidneys, and intellectual disability. Also called **Schmid–Fraccaro syndrome**.

**Cattell–Horn theory of intelligence** a theory proposing that there are two main kinds of intellectual abilities nested under general intelligence: *g-c*, or **crystallized intelligence** (or **ability**), which is the sum of one's knowledge and is measured by tests of vocabulary, general information, and so forth; and *g-f*, or **fluid intelligence** (or **ability**), which is the set of mental processes that is used in dealing with relatively novel tasks and is used in the acquisition of *g-c*. In later versions of the theory, other abilities were added, such as *g-v*, or visual intelligence (or ability), which is the set of mental processes used in handling visual-spatial tasks (e.g., mentally rotating a geometric figure or visualizing what pieces of paper would look like if folded). [originated by Raymond B. CATTELL in the 1940s; subsequently developed by U.S. psychologist John L. Horn (1928–2006) beginning in the 1960s]

**Cattell's personality trait theory** an approach to personality description based on the identification of traits through FACTOR ANALYSIS and their classification into SURFACE TRAITS and the 16 SOURCE TRAITS that underlie them. [Raymond B. CATTELL]

**cauda equina** the bundle of nerve roots at the base of the spinal cord, so called because of its resemblance to a horse's tail.

**caudal** *adj.* **1.** pertaining to a tail. **2.** situated at or toward the tail end of an organism. Compare ROSTRAL.

**caudate nucleus** one of the BASAL GANGLIA, so named because it has a long extension, or tail.

**causal ambiguity** a situation in which it is not known which one (or which set) of several phenomena is the cause of a particular effect. Sometimes the ambiguity attaches to the more complex question of which phenomena are causes and which are effects (see REVERSE CAUSALITY). Controlled empirical research is often used to resolve issues of causal ambiguity.

**causal analysis** an attempt to draw dependable inferences about cause-and-effect relationships from research data. Encompassing a variety of methods (e.g., PATH ANALYSIS, STRUCTURAL EQUATION MODELING), such analyses differ in the degree to which they are statistically complex and the degree to which causal inferences from them are, in fact, justified.

**causal attribution** see ATTRIBUTION.

**causal chain** a sequence of conditions or events, either hypothetical or empirically derived, that results in a particular effect. Explanation in terms of causal chains presumes that causation is transitive (see TRANSITIVITY). Also called **causal path**.

**causalgia** *n.* a sensation of intense, burning pain resulting from injury to the peripheral nerves. The condition is most often due to a penetrating wound inflicted by a bullet or knife and involves swelling, redness, and sweating in addition to almost unbearable pain.

**causal inference** the reasoned process of concluding that change in one variable produced change in another variable. See CAUSAL ANALYSIS.

**causality** *n.* in philosophy, the position that all events have causes, that is, that they are consequences of antecedent events. Traditionally, causality has been seen as an essential assumption of NATURALISM and all scientific explanation, although some have questioned whether causality is a necessary assumption of science. Others have suggested that, although causality must be assumed, there are different types of causality, each of which makes different metaphysical assumptions about the nature of the world and adopts different criteria about what types of relationships between phenomena can be considered as legitimately causal. See also CAUSATION; DETERMINISM. —**causal** *adj.*

**causal latency** **1.** the temporal separation of a cause from its effect. Not all causes need have immediate effects; indeed, there may be a lengthy interval between a cause and the effect it produces. Causal latency may be expected to increase when there are other factors in a situation that may influence the cause-and-effect relationship. Some causes studied in psychology and the other social sciences are REMOTE CAUSES, in that they require the presence or activity of other factors or conditions before their effects become manifest. Remote causes may be expected to have large causal latencies. See DELAYED EFFECT. **2.** in the statistical procedure known as PATH ANALYSIS, the quality of a variable that has a measurable statistical effect on prediction only when other predictor variables are also included in the prediction model. Although the statistical relationships identified in such analyses are not, strictly speaking, causal, the language of causality is commonly employed. See CAUSAL PATH.

**causal law** a statement of a consistent or invariant relationship between phenomena in which the relationship is one of causation. A causal law is thus distinguished from other statements of invariant regularity, such as "In temperate climates, when the seasons change, the leaves turn color." Causal laws may reflect different types of causality, ranging from strict DETERMINISM, through PROBABILISM, to TELEOLOGY. Sometimes, in superficial usage, causal laws are understood not as mere statements of consistent relationships but as metaphysical entities or forces that produce the effects that consistently accrue. In such usage, a causal law becomes indistinguishable from a CAUSE.

**causal mechanism** the most immediate and physical means by which something is accomplished. For example, the causal mechanism for opening a door is the turning of the knob and the exertion of pressure on the door. The discovery of a causal mechanism does not resolve questions of causation, as there may well be other latent or REMOTE CAUSES. Nor does the recognition of a causal mechanism

imply that the world is inherently mechanical. For example, although a mechanism is required for opening a door, the ultimate cause may be a nonmechanical intention to leave the room. See also MECHANICAL CAUSALITY; PROXIMATE CAUSE.

**causal modeling** any procedure used to test for cause-and-effect relationships (as opposed to mere correlation) between multiple variables. STRUCTURAL EQUATION MODELING is the best known example. For a causal model to be a useful evaluative tool, strict conditions concerning the measurement of the variables must be met.

**causal nexus** a NEXUS or connection between phenomena that is one of CAUSATION. See CAUSAL CHAIN.

**causal ordering** **1.** the principle that causes must temporally precede their effects, and never vice versa. See also FALSE CAUSE; REVERSE CAUSALITY. **2.** in PATH ANALYSIS and similar statistical procedures, the categorizing of causal variables as either more or less direct.

**causal path** **1.** see CAUSAL CHAIN. **2.** in PATH ANALYSIS and similar statistical procedures, a relatively probable causal sequence among a complex set of potential causes and effects. The analysis is based on first-order and partial correlations among variables indicating possible relations of cause and effect. From the pattern of correlations, conclusions are drawn regarding which set of variables, in which order, represents the most likely path from some presumed cause of interest to some presumed effect of interest.

**causal texture** the very large number of mutually dependent events that make up the fabric of reality. Those philosophers and psychologists who use this term conceive of the interdependencies among events in terms of probability rather than certainty, in part because such interdependencies change and develop over time. [introduced into psychology by Edward C. TOLMAN and Egon BRUNSWIK]

**causal variable** see INDEPENDENT VARIABLE.

**causation** *n.* **1.** the empirical relation between two events, states, or variables such that change in one (the cause) brings about change in the other (the effect). See also CAUSALITY. **2.** in Aristotelian and rationalist philosophy, the hypothetical relation between two phenomena (entities or events), such that one (the cause) either constitutes the necessary and sufficient grounds for the existence of the other (the effect), or the one possesses the capacity to bring about the other. —**causal** *adj.*

**causative verb** a verb that expresses the notion of something being caused, such as *convince*, *harmonize*, or *enliven*. Children's acquisition of causative concepts is a lively area of developmental research at the intersection of linguistic, cognitive, and social development. See also ACTIONAL VERB.

**cause** *n.* **1.** an event or state that brings about another (its effect). **2.** in Aristotelian and rationalist philosophy, an entity or event that is a requirement for another entity or event's coming to be. ARISTOTLE proposed that there were four types of cause—material, formal, efficient, and final. In the case of a sculpture, for example, the **material cause** is the stone or metal from which it is made, the **formal cause** is the form or structure that it takes, the **efficient cause** is the sculptor, and the **final cause** is the sculptor's aim or purpose in making it. —**causal** *adj.*

**cause-and-effect test** an intelligence test to measure causal reasoning that offers alternative causes for different

effects and alternative effects for different causes, requiring the examinee to choose the most logical explanations.

**cautious shift** a CHOICE SHIFT in which an individual making a decision as part of a group adopts a more cautious approach than the same individual would have adopted had he or she made the decision alone. Studies suggest that such shifts are (a) rarer than the opposite RISKY SHIFT and (b) most likely to occur when the majority of the members of the group, prior to discussion, favor a cautious rather than a risky choice. See also GROUP POLARIZATION.

**CAVLT** abbreviation for CHILDREN'S AUDITORY VERBAL LEARNING TEST.

**CBAS** abbreviation for COACHING BEHAVIOR ASSESSMENT SYSTEM.

**CBCA** abbreviation for CRITERION-BASED CONTENT ANALYSIS.

**CBCL** abbreviation for CHILD BEHAVIOR CHECKLIST.

**CBD** abbreviation for CANNABIDIOL.

**CBGD** abbreviation for CORTICOBASAL GANGLIONIC DEGENERATION.

**CBT** abbreviation for COGNITIVE BEHAVIOR THERAPY.

**CBZ** abbreviation for CARBAMAZEPINE.

**CCC theory** abbreviation for COGNITIVE COMPLEXITY AND CONTROL THEORY.

**CCK** abbreviation for CHOLECYSTOKININ.

**CCRC** abbreviation for CONTINUING CARE RETIREMENT COMMUNITY.

**CCRT** abbreviation for CORE CONFLICTUAL RELATIONSHIP THEME.

**CCTV system** abbreviation for CLOSED-CIRCUIT TELEVISION SYSTEM.

**CCU 1.** abbreviation for CONTINUING CARE UNIT. **2.** abbreviation for critical care unit (see INTENSIVE CARE UNIT).

**CD 1.** abbreviation for COMMUNICATION DEVIANCE. **2.** abbreviation for CONDUCT DISORDER.

**CDC** abbreviation for CENTERS FOR DISEASE CONTROL AND PREVENTION.

**CDF** abbreviation for CUMULATIVE DISTRIBUTION FUNCTION.

**CDI** abbreviation for CHILDREN'S DEPRESSION INVENTORY.

**CDQ** abbreviation for CHOICE DILEMMA QUESTIONNAIRE.

**cebocephaly** *n.* a type of congenital defect in which the eyes are abnormally close to each other, the nose may be missing or not fully formed, and the facial features resemble those of a monkey. In some cases, the defect pattern may include CYCLOPIA. Cebocephaly is associated with chromosomal abnormalities, such as TRISOMY 13.

**CEFT** abbreviation for CHILDREN'S EMBEDDED FIGURES TEST.

**ceiling age** the lowest MENTAL AGE level at which a participant on a standardized test answers all the items incorrectly. The concept of mental ages is used relatively rarely in current testing. Compare BASAL AGE.

**ceiling effect** a situation in which the majority of values obtained for a variable approach the upper limit of the scale used in its measurement. For example, a test whose items are too easy for those taking it would show a ceiling

effect because most people would achieve or be close to the highest possible score. In other words, the test scores would exhibit SKEWNESS and have little VARIANCE, thus prohibiting meaningful analysis of the results. Compare FLOOR EFFECT.

**Celexa** *n.* a trade name for CITALOPRAM.

**celiac plexus 1.** in the nervous system, a network of fibers lying anterior to the aorta at the level of the 12th thoracic vertebra. Most autonomic and visceral afferent nerves pass through this plexus. Also called **celiac nervous plexus**. **2.** in the lymphatic system, a network of afferent and efferent lymphatic vessels in the abdomen. Also called **celiac lymphatic plexus**.

**celibacy** *n.* **1.** the state of being unmarried, especially as the result of a religious vow. **2.** abstinence from sexual activity. See also CHASTITY. —**celibate** *adj., n.*

**cell** *n.* **1.** in biology, the basic unit of organized tissue, consisting of an outer plasma membrane, the NUCLEUS, and various ORGANELLES in a watery fluid together comprising the CYTOPLASM. Bacteria lack a nucleus and most organelles. The term was first applied to biological structure by English physicist Robert Hooke (1635–1703) when describing the microscopic appearance of cork. See also CELL THEORY. **2.** a combination of two or more characteristics represented by the intersection of a row and a column in a statistical table. A tabular display resulting from a study of handedness in men and women, for instance, might consist of four cells: left-handed females, left-handed males, right-handed females, and right-handed males.

**cell adhesion molecule (CAM)** any of various proteins on cell surfaces that bind cells to each other and to the extracellular matrix. Certain CAMs have roles in cell migration or extension during development, including axonal pathfinding.

**cell assembly** a group of neurons that are repeatedly active at the same time and develop as a single functional unit, which may become active when any of its constituent neurons is stimulated. This enables, for example, a person to form a complete mental image of an object when only a portion is visible or to recall a memory from a partial cue. Cell assembly is influential in biological theories of learning and memory. [proposed in 1949 by Donald O. HEBB]

**cell body** the part of a NEURON (nerve cell) that contains the nucleus and most organelles. Also called **perikaryon**; **soma**. See also AXON.

**cell-cell interactions** the general processes during embryological development in which one cell affects the differentiation of other, usually neighboring, cells. Also called **cell interactions**.

**cell death** see PROGRAMMED CELL DEATH.

**cell differentiation** see DIFFERENTIATION.

**cell division** the division of a cell to form daughter cells. It usually involves division of the nucleus (see MITOSIS; MEIOSIS) followed by partitioning of the cytoplasm.

**cell interactions** see CELL-CELL INTERACTIONS.

**cell-mediated immunity** see IMMUNE RESPONSE.

**cell migration** the movement of cells during development from their site of origin to their final location.

**cell nucleus** see NUCLEUS.

**cell proliferation** the multiplication of cells by MITOSIS.

**cell theory** the principle that all organisms are composed of one or more CELLS. [proposed in 1839 for animals by German physiologist Theodor Schwann (1810–1882) and for plants by German botanist Matthias Jakob Schleiden (1804–1881)]

**cellular automata** computer programs used in the study of ARTIFICIAL LIFE. Typically, a display is used on a computer screen, split into an array of cells, with an initial pattern of occupied cells. The pattern evolves through a sequence of steps according to certain rules (e.g., whether or not certain numbers of neighboring cells are occupied). Programs of this type have been used in investigations of such phenomena as social behavior and evolutionary development. [developed in the 1940s by Austrian-born U.S. mathematician John von Neumann (1903–1957)]

**cellular fluid** see INTRACELLULAR FLUID.

**cellular respiration** see RESPIRATION.

**CEM** abbreviation for COLLECTIVE EFFORT MODEL.

**cenesthesia (coenesthesia)** *n.* the blend of numerous bodily sensations that produces an implicit awareness of being alive and of being in a particular physical condition, for example, well or ill, energetic or tired. —**cenesthetic** *adj.*

**cenesthopathy** *n.* a general feeling of illness or lack of well-being that is not identified with any particular part of the body.

**ceno-** combining form see COENO-.

**censor** *n.* in psychoanalytic theory, the mental agency, located in the PRECONSCIOUS, that is responsible for REPRESION. The censor is posited to determine which wishes, thoughts, and ideas may enter consciousness and which must be kept unconscious because they violate one's conscience or society's standards or are in conflict with other wishes or perceptions, or because the affect associated with them is disturbing or overwhelming. The censor is also posited to be responsible for the distortion of wishes that occurs in dreams (see DREAM CENSORSHIP). The idea was introduced in the early writings of Sigmund FREUD, who later developed it into the concept of the SUPEREGO. —**censorship** *n.*

**censored data** a set of data in which some values are unknown because they are not observed or because they fall below the minimum or above the maximum value that can be measured by the scale used. For example, in a study of survival rates of a group of people with a particular disease, censored data would be obtained if the deaths of some participants occurred after the study ended.

**censored observation** a score that is missing from a data set, either because the event of interest has not occurred by the end of the study period or because the response falls into an unmeasurable portion of the scale. A response measured by a meter, for instance, may not be recorded because it is too small to be detected or is so large that it exceeds the meter's capability to record. In such a situation, the minimum value is assigned to an undetectable observation, and the maximum value is assigned to an excessive observation.

**censored regression** see TOBIT ANALYSIS.

**censoring** *n.* the situation in which some observations are missing from a set of data (see CENSORED DATA). Censoring is common in studies of survival time, in which the re-

search often ends before the event of interest occurs for all study units. See also LEFT CENSORING; RIGHT CENSORING.

**census** *n.* the complete count of an entire population. A census differs from most experimental studies, which use a SAMPLE from a population in hopes of generalizing from that observed subset to the larger group.

**census tract** a small, generally homogeneous geographic area with boundaries established to facilitate the collection and reporting of census data. Community demographic data are frequently used in the assessment of the area's characteristics and needs, including mental health needs. See also CATCHMENT AREA.

**cent** *n.* in acoustics, a logarithmic unit used to express frequency ratios. There are 1200 cents in an OCTAVE, and successive notes or intervals on the equally tempered musical scale are separated by 100 cents, or one SEMITONE.

**center** *n.* in neurophysiology, a structure or region that controls a particular function, for example, the respiratory center of the brain.

**centered** *adj.* **1.** describing the state of an organism that is perfectly integrated with its environment. [defined by Kurt GOLDSTEIN] **2.** denoting a state of mind characterized by having a firm grip on reality, knowing who one is and what one wants out of life, and being prepared to meet most eventualities in an efficient manner. **3.** in a posture for defense or attack, with body balanced and crouching forward.

**Center for Deployment Psychology** an organization established by the U.S. Department of Defense in 2006 to meet the mental health needs of service members and their families. The center's primary goal is to make mental health care in the military more relevant, available, and effective by educating behavioral health professionals on the psychological issues associated with military deployments and teaching them the latest evidence-based treatment protocols for service members and their families.

**Center for Epidemiologic Studies Depression Scale (CES-D)** a 20-item self-administered rating scale that provides a quantitative measure of different depressive feelings and behaviors that an individual may have experienced during the previous week. Scores range from 0 to 60, with a score of 16 or greater indicating the presence of depressive symptoms and suggesting the need for further testing for a possible depressive disorder. [published in 1977 by Lenore Sawyer Radloff (1935– ) while a researcher at the National Institute of Mental Health]

**Center for Independent Living (CIL)** see INDEPENDENT LIVING.

**centering** *n.* a technique whose aim is to increase and focus attention and energy, to provide relief from stress and anxiety, or both. Various practices (e.g., meditation, yoga) emphasize centering as a way of focusing attention on the process of breathing in order to slow it down or regularize it. Sometimes this state of concentration is an end in itself. In other instances, at the point of concentration, negative thoughts and emotions are released and positive thoughts and emotions are encouraged. In sport psychology, the technique is used by athletes to assist them in achieving an IDEAL PERFORMANCE STATE.

**center median** the largest of the INTRALAMINAR NUCLEI of the THALAMUS in the brain. Unlike other thalamic nuclei, it has no connections with the cerebral cortex and

communicates only with the BASAL GANGLIA. Also called **centromedian nucleus**.

**center of gravity** a balance point, that is, the location about which the mass of an object is evenly distributed. The position of the center of gravity of the body relative to the legs determines whether, for example, a standing posture is stable.

**Centers for Disease Control and Prevention (CDC)** an agency founded in 1946 (now one of the 11 major operating components of the U.S. Department of Health and Human Services) that stands at the forefront of public health efforts to prevent and control infectious and chronic diseases, injuries, workplace hazards, disabilities, and environmental health threats. The CDC works with public health partners, both nationally and internationally, to monitor health, detect and investigate health problems, conduct research to enhance and implement prevention, promote healthy behaviors and safe and healthful environments, and develop and advocate sound public health policies.

**Centers for Medicare and Medicaid Services (CMS)** a federal government agency within the Department of Health and Human Services that is responsible for the administration of the MEDICARE, MEDICAID, and Children's Health Insurance programs, formerly known as the **Health Care Financing Administration (HCFA)**. In 2007, the 10 field offices of the CMS were reorganized into a consortia framework based on the organization's primary lines of business: Medicare Health Plans Operations, Financial Management and Fee-for-Service Operations, Medicaid and Children's Health Operations, and Quality Improvement and Survey and Certification Operations.

**center-surround antagonism** a characteristic of the receptive fields of many visual and somatosensory neurons in which stimulation in the center of the receptive field evokes opposite responses to stimulation in the periphery. Thus, some neurons depolarize with center stimulation and hyperpolarize when the same stimulus appears in the surrounding region of the receptive field, whereas other neurons have the opposite pattern of responses. Center-surround antagonism greatly increases the sensitivity of the nervous system to CONTRAST. See also OFF RESPONSE; ON RESPONSE; SIMPLE CELL.

**center-surround receptive field** a type of receptive field, common in the visual and somatosensory systems, that exhibits CENTER-SURROUND ANTAGONISM. Most center-surround receptive fields consist of a circular center area and an annular (i.e., ringlike) surrounding area.

**centile** *n.* a shortened name for PERCENTILE.

**central** *adj.* of or relating to the CENTRAL NERVOUS SYSTEM (CNS), especially to disorders that occur as a result of injury to or dysfunction of the CNS. Compare PERIPHERAL.

**central anticholinergic syndrome** see ANTICHOLINERGIC SYNDROME.

**central aphasia** loss of the ability to understand or express language resulting from brain lesions. This term is no longer in common use and was never specifically defined: It has been identified with CONDUCTION APHASIA and WERNICKE'S APHASIA, among other types.

**central auditory abilities** see AUDITORY SKILLS.

**central auditory processing disorder (CAPD)** an impaired ability to decode acoustic messages into meaning-

ful information and to discriminate speech, despite only minor changes in auditory sensitivity to sound. In adults, CAPD is typically associated with brain damage caused by stroke, lesions, and neurodegenerative diseases, such as multiple sclerosis; in children, it is most often associated with microscopic pathology in the brain and maturational delays in language acquisition. Also called **auditory processing disorder**.

**central auditory system** see AUDITORY SYSTEM.

**central canal** the channel in the center of the spinal cord, which contains CEREBROSPINAL FLUID.

**central coherence theory** a theory proposing that human beings have an inherent drive to form coherent wholes by integrating pieces of relevant information. Most people tend to process incoming stimuli in context in order to derive a meaningful gist of the situation, often at the expense of surface details. By contrast, individuals with AUTISM SPECTRUM DISORDER exhibit a tendency toward **weak central coherence**, which results in an overreliance on local or piecemeal processing and a failure to integrate information in order to process stimuli in context. Also called **weak central coherence theory**. [proposed in 1989 by German-born British psychologist Uta Frith (1941– )]

**central conceptual structure** a theoretical integrated repository of mental operations and network of concepts and relationships relevant to a particular domain of experience (e.g., the domain of numbers) and important to task performance. Central conceptual structures are one of two mechanisms proposed by Canadian developmental psychologist Robbie Case (1944–2000) as guiding learning and thinking processes in children, the other being the EXECUTIVE CONTROL STRUCTURE.

**central conflict** the intrapsychic struggle between the healthy constructive forces of the real self and the obstructive, neurotic forces of the idealized self-image. [first described by Karen D. HORNEY]

**central deafness** loss or absence of hearing caused by damage to or abnormality of the auditory structures of the brain (i.e., the central AUDITORY SYSTEM), rather than the auditory nerve or the ear itself. Compare CONDUCTION DEAFNESS; SENSORINEURAL DEAFNESS.

**central disposition** see PERSONAL DISPOSITION.

**central distribution** see NONCENTRAL DISTRIBUTION.

**central dyslexia** an acquired DYSLEXIA characterized by difficulties with the pronunciation and comprehension of written words. Unlike in VISUAL WORD-FORM DYSLEXIA, the visual analysis system of the brain is intact, and the damage is to other, higher level brain pathways and systems involved in reading (e.g., the semantic system). The major types of central dyslexia include DEEP DYSLEXIA and SURFACE DYSLEXIA.

**central executive** in the model of WORKING MEMORY proposed in 1974 by British cognitive psychologists Alan D. Baddeley (1934– ) and Graham J. Hitch (1946– ), a component that manages the activities of the PHONOLOGICAL LOOP and VISUOSPATIAL SKETCHPAD. In coordinating the numerous processes of working memory, the central executive thus performs such varied functions as manipulating material held within the loop and sketchpad, focusing attention on and switching attention between different tasks, dividing attention between simultaneous tasks, and initiating long-term memory ENCODING and RETRIEVAL. Despite its crucial role, however, the central executive is of limited ca-

capacity and does not have any storage ability of its own. Its exact structure and operation have yet to be established and remain the focus of much current research.

**central fissure** see CENTRAL SULCUS.

**central gray** see PERIAQUEDUCTAL GRAY.

**central inhibition** a process within the central nervous system that prevents or interrupts the flow of neural impulses that control behavior.

**centralism** *n.* the concept that behavior is a function of the central nervous system mediated by the brain. Compare PERIPHERALISM.

**centralist psychology** **1.** a psychological approach that focuses on behavior as a function of the higher brain centers, as opposed to peripheralist psychology (see PERIPHERALISM), which focuses on the effects of the receptors, glands, and muscles on behavior. Centralist psychology is essentially equivalent to CENTRALISM. **2.** more generally, the idea that mental activity or mind occurs in or is a function of the brain alone.

**centrality of an attitude** **1.** the extent to which an ATTITUDE OBJECT is thought about, reflected in the amount of time devoted to this thinking over an extended period. **2.** the extent to which an attitude is linked to other attitudes in memory. Increased centrality is associated with enhanced ATTITUDE STRENGTH.

**centralized organization** an ORGANIZATIONAL STRUCTURE in which those holding positions of authority at the upper levels of the hierarchy retain control over decision making. Compare DECENTRALIZED ORGANIZATION.

**central limited capacity** the observed constraint on the processing capacity of the cognitive system—that is, the limited number of items or tasks that one can process (e.g., attend to, be aware of) at a given moment. Cognition is particularly subject to narrow capacity limits when items are novel or arbitrarily presented and when a primary task is highly paced or is assessed under an additional task load (see DUAL-TASK COMPETITION). This limited capacity affects voluntary decision making, WORKING MEMORY, effortful cognition, and CHOICE REACTION TIME, among other functions. However, capacity limits can be increased dramatically by way of CHUNKING (organization), LONG-TERM MEMORY, or AUTOMATICITY after habituation.

**central limit theorem (CLT)** the statistical principle that the sum of independent values from any distribution will approach a NORMAL DISTRIBUTION as the number of values in the distribution increases. In other words, the larger the sample size, the more closely the SAMPLING DISTRIBUTION approximates a normal distribution. The central limit theorem is used to justify certain data analysis methods when the appropriateness of a method relies on an assumption of normality.

**central lobe** see INSULA.

**central moment** a MOMENT that describes the shape of a set of scores with regard to its deviation about the mean. Four common central moments that describe a RANDOM VARIABLE are the MEAN (the first central moment), the VARIANCE (the second central moment), the SKEWNESS (the third central moment), and the KURTOSIS (the fourth central moment). Also called **moment about the mean**.

**central nervous system (CNS)** the entire complex of NEURONS, AXONS, and supporting tissue that constitute the brain and spinal cord. The CNS is primarily involved in

mental activities and in coordinating and integrating incoming sensory messages and outgoing motor messages. Compare PERIPHERAL NERVOUS SYSTEM.

**central nervous system disorder** any neurological disorder of the central nervous system (i.e., brain and spinal cord).

**central neuron** a neuron contained entirely within the central nervous system.

**central nucleus** a nucleus forming part of the CORTICOMEDIAL GROUP in the AMYGDALA within the brain. It receives input from other amygdaloid nuclei and projects to the hypothalamus and many brainstem structures, including the PERIAQUEDUCTAL GRAY. It is involved (among other things) in fear behavior.

**central pain** pain that is caused by a disorder of the central nervous system, such as a brain tumor or infection or injury of the spinal cord.

**central pattern generator** any of the sets of neurons in the spinal cord capable of producing oscillatory behavior and thought to be involved in the control of locomotion and other tasks. A central pattern generator is the neural substrate responsible for repetitive coordinated movements that can be modeled using COUPLED OSCILLATORS.

**central processes** see EXECUTIVE FUNCTIONS.

**central processing dysfunction** impairment in the analysis, storage, synthesis, and symbolic use of information. Because these processes involve memory tasks, the dysfunction is believed to be related to difficulties in learning.

**central processor** **1.** the part of a computer that controls and executes operations on data. **2.** in models of cognition based on analogies to INFORMATION PROCESSING in a computer, that part of the system that carries out operations on stored representations. The idea of a single central processor in the human cognitive system has been challenged by models based on DISTRIBUTED PROCESSING, PARALLEL DISTRIBUTED PROCESSING, and PARALLEL PROCESSING.

**central reflex time** the portion of REFLEX LATENCY that is occupied by activity within the central nervous system; it excludes the latency of muscular or endocrine response.

**central route to persuasion** the process by which attitudes are formed or changed as a result of carefully scrutinizing and thinking about the central merits of attitude-relevant information. See also ELABORATION; ELABORATION-LIKELIHOOD MODEL. Compare PERIPHERAL ROUTE TO PERSUASION.

**central scotoma** depressed vision in the central part of the visual field, which may be either absolute (total loss of vision) or relative (partial loss of vision). When caused by unilateral injury to or disease of the peripheral visual system (e.g., the retina or optic nerve), the central visual field of only one eye is affected. When associated with injury to the central visual system (i.e., beyond the optic nerve, in the brain), the central visual fields of both eyes are affected, and patients have great difficulty in guiding their fixation, localizing objects, reading, and recognizing faces.

**central sleep apnea** see BREATHING-RELATED SLEEP DISORDER; SLEEP APNEA.

**central state theory** see IDENTITY THEORY.

**central stimulation** electrical or chemical stimulation of the brain. See INTRACRANIAL STIMULATION.

**central sulcus** a major cleft (see SULCUS) that passes roughly vertically along the lateral surface of each CEREBRAL HEMISPHERE from a point beginning near the top of the cerebrum. It marks the border between the FRONTAL LOBE and the PARIETAL LOBE. Also called **central fissure**; **fissure of Rolando**; **Rolandic fissure**; **Rolandic sulcus**; **sulcus centralis**.

**central tendency** the middle or center point of a set of scores. The central tendency of a sample data set, for instance, may be estimated by a number of different statistics (e.g., MEAN, MEDIAN, MODE).

**central-tendency bias** see END-AVERSION BIAS.

**central vision** the ability to see stimuli in the middle of the visual field, surrounding and including the point of fixation. Central vision is provided by the FOVEA CENTRALIS. Also called **foveal vision**. Compare PARACENTRAL VISION; PERIPHERAL VISION.

**centration** *n.* in PIAGETIAN THEORY, the tendency of children in the PREOPERATIONAL STAGE to attend to one aspect of a problem, object, or situation at a time, to the exclusion of others. Compare DECENTRATION.

**centrencephalic** *adj.* located in or near the center of the brain.

**centrencephalic epilepsy** a form of epilepsy marked by GENERALIZED SEIZURES (absence seizures and some tonic-clonic seizures) that appear to originate near the center of the brain. It is not associated with any particular local anatomical or functional system but instead radiates outward through both cerebral hemispheres. The term was coined in the 1940s by U.S.-born Canadian neurosurgeon Wilder Penfield (1891–1976) and U.S.-born Canadian neuroscientist Herbert Jasper (1906–1999), and its use is restricted primarily to historic contexts.

**centrencephalic system** the concept of a central anatomical brain region (the **centrencephalon**) whose activities provide a coherent unity for mental processes and the seat of free will. [proposed by U.S.-born Canadian neurosurgeon Wilder Penfield (1891–1976)]

**centrifugal** *adj.* directed away from the center. For example, a **centrifugal nerve** carries impulses from the central nervous system to a peripheral region of the body. Compare CENTRIPETAL.

**centripetal** *adj.* **1.** directed toward the center. For example, a **centripetal nerve** carries nerve impulses from the periphery to the central nervous system. Compare CENTRIFUGAL. **2.** characterizing treatment approaches that focus inward on minute changes in feelings and impulses, as in psychoanalysis.

**centripetal impulse** a nerve impulse that travels from the periphery toward the central nervous system, that is, a sensory or afferent impulse.

**centroid** *n.* **1.** in geometry, the center point of an object or area in multidimensional space. It may be determined by calculating the intersection of all straight lines or planes that divide the area into two equal parts. **2.** the MEAN of multivariate data. It may be obtained by calculating the average of the VECTORS for the set of variables.

**centromedian nucleus** see CENTER MEDIAN.

**centromere** *n.* the part of a chromosome at which the CHROMATIDS are joined and that is attached to the equatorial plane of the spindle during cell division. The cen-

tromere occasionally becomes a separate body of genetic material, accounting for certain types of anomalies.

**cephalalgia** *n.* pain in the head (see HEADACHE).

**cephalic** *adj.* pertaining to or located in the head.

**cephalic index** the ratio of the maximum breadth of the head to its maximum length, multiplied by 100. The average, or medium, cephalic index for humans is between 75 and 81 (**mesocephalic**). A measure below 75 indicates a narrow head that is long in proportion to its width (**dolichocephalic**); a measure above 81 indicates a head that is wide in proportion to its length (**brachycephalic**). Also called **cranial index**. [defined by Swedish anatomist Anders Retzius (1796–1860)]

**cephalization** *n.* **1.** the evolutionary tendency for important structures (brain, major sense organs, etc.) to develop at the anterior (front) end of organisms. **2.** the evolutionary tendency for the brain to increase in size. See ENCEPHALIZATION; EVOLUTION OF THE BRAIN.

**cephalo-** (**cephal-**) *combining form* head.

**cephalocaudal** *adj.* from head to tail, as in the long axis of the body. The term typically refers to the maturation of an embryo or infant, wherein the greatest development takes place at the top of the body (i.e., the head) before the lower parts (i.e., the arms, trunk, legs). Compare PROXIMODISTAL.

**cephalocaudal axis** see AXIS.

**cephalogenesis** *n.* formation of the head in embryonic development.

**cephalometry** *n.* the scientific measurement of the dimensions of the head. Cephalometry is used in orthodontics to predict and evaluate craniofacial development. **Fetal cephalometry** is the in utero measurement of the skull of the fetus, using ultrasound or X-ray techniques.

**CER** abbreviation for CONDITIONED EMOTIONAL RESPONSE.

**cereb-** *combining form* see CEREBRO-.

**cerebellar** *adj.* of or relating to the CEREBELLUM.

**cerebellar ataxia** poor muscular coordination (see ATAXIA) due to damage in the cerebellum. Individuals cannot integrate voluntary movements and therefore find it difficult to stand or walk, feed themselves, and perform complex activities (e.g., playing the piano).

**cerebellar cortex** the GRAY MATTER, or unmyelinated nerve cells, covering the surface of the CEREBELLUM.

**cerebellar folia** the pattern of thin folds that subdivide the CEREBELLAR CORTEX.

**cerebellar gait** an unsteady, wobbly, wide-based gait, resembling that of an intoxicated individual and associated with cerebellar lesions or dysfunction.

**cerebellar hemisphere** either of the two main lobes of the CEREBELLUM.

**cerebellar nucleus** any of the small masses of neurons that lie within the white matter of the CEREBELLUM.

**cerebellar peduncle** any of the three bundles of nerve fibers that connect each main lobe (hemisphere) of the CEREBELLUM with other parts of the brain. The superior cerebellar peduncle, or BRACHIUM CONJUNCTIVUM, connects the cerebellum with the MIDBRAIN; the middle peduncle

connects the cerebellum with the PONS; and the inferior peduncle connects the cerebellum with the MEDULLA OBLONGATA.

**cerebellar rigidity** see EXTENSOR RIGIDITY.

**cerebellar speech** a type of speech that is jerky, irregular, and poorly coordinated due to a lesion of the cerebellum. Also called **asynergic speech**.

**cerebellopontine angle** a region of the human brain where the CEREBELLUM touches the PONS. The FACIAL NERVE and the VESTIBULOCOCHLEAR NERVE enter the brainstem in this region, and tumors frequently occur in either of these nerves in this region.

**cerebellum** *n.* (*pl.* **cerebella**) a portion of the HIND-BRAIN dorsal to the rest of the BRAINSTEM, to which it is connected by the CEREBELLAR PEDUNCLES. The cerebellum modulates muscular contractions to produce smooth, accurately timed BALLISTIC movements; it helps maintain equilibrium by predicting body positions ahead of actual body movements, and it is required for some kinds of motor conditioning. [Latin, literally: "little brain," diminutive of CEREBRUM]

**cerebral** *adj.* referring to the CEREBRUM of the brain.

**cerebral achromatopsia** see ACHROMATISM.

**cerebral amblyopia** a depression of light vision and complete loss of form and color vision in either the left or right half of the visual field (unilateral HEMIAMBLYOPIA) or in both the left and right halves (bilateral hemiamblyopia). Movement vision is typically not affected. See also RIDDOCH'S PHENOMENON.

**cerebral anemia** a condition of abnormally low levels of hemoglobin or red blood cells in the blood reaching brain tissues, which may cause CEREBRAL INFARCTION.

**cerebral angiography** a noninvasive technique for examining brain structure by taking X-rays after special dyes have been injected into cerebral blood vessels. Inferences about adjacent tissue can be made from examination of the principal blood vessels. It has been largely superseded by techniques based on MAGNETIC RESONANCE IMAGING, such as magnetic resonance angiography. Also called **cerebral arteriography**.

**cerebral angiomatosis** a disease characterized by the formation of multiple tumors in the blood vessels that supply brain tissue. A congenital form of the disorder is marked by frequent seizures and muscular weakness on one side of the body as a result of impaired blood flow to the brain.

**cerebral aqueduct** a passage containing CEREBROSPINAL FLUID that extends through the MIDBRAIN to link the third and fourth cerebral VENTRICLES of the brain. Also called **aqueduct of Sylvius**; **Sylvian aqueduct**.

**cerebral arteriography** see CEREBRAL ANGIOGRAPHY.

**cerebral arteriosclerosis** a hardening of the arteries that supply the brain.

**cerebral atrophy** degeneration and shrinkage of the brain, usually due to aging, disease, or injury. It is marked by enlargement of the surface clefts (SULCI) and inner cavities (VENTRICLES) of the brain. In normal aging there may be few or no cognitive effects, but cerebral atrophy may be secondary to more serious disorders, such as cerebrovascular disease, encephalitis, Alzheimer's disease, or head injury. Also called **brain atrophy**.

**cerebral beriberi** see WERNICKE'S ENCEPHALOPATHY.

**cerebral blindness** see CORTICAL BLINDNESS.

**cerebral contusion** bruising of the brain, in which blood vessels are damaged but not ruptured, resulting from head injury. The effects vary with the severity of the injury, ranging from temporary neurological symptoms to permanent disability. Also called **brain contusion**.

**cerebral cortex** the layer of GRAY MATTER that covers the outside of the CEREBRAL HEMISPHERES in the brain and is associated with higher cognitive functions, such as language, learning, perception, and planning. It consists mostly of NEOCORTEX, which has six main layers of cells (see CORTICAL LAYERS); regions of cerebral cortex that do not have six layers are known as ALLOCORTEX. Differences in the CYTOARCHITECTURE of the layers led to the recognition of distinct areas, called BRODMANN'S AREAS, many of which are known to serve different functions.

**cerebral death** see BRAIN DEATH.

**cerebral diplopia** see DIPLOPIA.

**cerebral dominance** **1.** the control of lower brain centers by the cerebrum or cerebral cortex. **2.** the controlling or disproportionate influence on certain aspects of behavior by one CEREBRAL HEMISPHERE (e.g., language is typically left lateralized in right-handed people). See HEMISPHERIC LATERALIZATION.

**cerebral dyschromatopsia** **1.** incomplete cerebral ACHROMATISM. **2.** a distortion of color vision, as if the individual is seeing through a color filter. See also VISUAL ILLUSION.

**cerebral dysfunction** any impairment in cerebral processes, including disturbances of memory, language, attention, or executive functioning.

**cerebral dysplasia** any abnormality in the development of the brain. There are various types of cerebral dysplasia, including ANENCEPHALY, marked by failure of the cerebral hemispheres to develop; **porencephaly**, characterized by development of a hemisphere containing abnormal cavities; and callosal AGENESIS.

**cerebral dysrhythmia** a condition of abnormal brain-wave rhythms associated with neurological disease or other pathological conditions, such as a drug overdose.

**cerebral edema** an abnormal accumulation of fluid in the intercellular or intracellular spaces of brain tissues, which may be caused by injury, disease, CEREBROVASCULAR ACCIDENT, or tumor (see also ACUTE MOUNTAIN SICKNESS). The condition results in swelling and a rise in INTRACRANIAL PRESSURE; if uncorrected, this may be followed by herniation of cerebral tissue through weakened areas. It may be reversible unless the damage extends to the brainstem, where the effects can be fatal. The increase in intracranial pressure may result in headaches and visual disorders. Cerebral edema can also cause cognitive dysfunction that recedes when the defect is corrected.

**cerebral electrotherapy (CET)** the application of low-voltage pulses of direct electrical current to the brain, occasionally used in the treatment of depression, anxiety, and insomnia. See ELECTRONARCOSIS.

**cerebral embolism** the presence of a small mass of material in the blood vessels of the brain (see EMBOLISM), which blocks or impedes the flow of blood to a part of the



brain, resulting in an acute or chronic neurological deficit. See EMBOLIC STROKE.

**cerebral gigantism** see SOTOS SYNDROME.

**cerebral hemisphere** either half (left or right) of the cerebrum. The hemispheres are separated by a deep LONGITUDINAL FISSURE, but they are connected by commissural, projection, and association fibers so that each side of the brain normally is linked to functions of tissues on either side of the body. See also HEMISPHERIC LATERALIZATION.

**cerebral hemorrhage** any bleeding into the brain tissue due to a damaged blood vessel. The cause may be cerebrovascular disease, a ruptured aneurysm, a penetrating injury or blow to the head, or other factors. The neurological effects vary with the extent of the hemorrhage. Also called **intracerebral hemorrhage**. See HEMORRHAGIC STROKE.

**cerebral hyperplasia** an abnormal increase in the volume of brain tissue, usually due to a proliferation of new, normal cells. Although neurons do not proliferate after the central nervous system has reached maturity, cells of the GLIA do continue to multiply into adulthood; in some cases neuroglial cell growth is associated with HYDROCEPHALUS.

**cerebral hypoplasia** the incomplete development of the cerebral hemispheres. It may be due to a congenital defect or malnutrition during early childhood.

**cerebral infarction** the death of brain tissue due to an interruption of blood flow caused by rupture of a blood vessel, blockage of a blood vessel by a clot (see EMBOLISM), or a narrowing (stenosis) of a blood vessel.

**cerebral infection** the invasion of brain tissues by a pathogenic organism, such as a virus or bacterium. Most cases occur as a complication of a viral infection (see ENCEPHALITIS); the most common bacterial infection is MENINGITIS.

**cerebral ischemia** a condition in which brain tissue is deprived of an adequate blood supply and thus lacks oxygen and nutrients. It is usually marked by loss of normal function of the affected area and may be accompanied by CEREBRAL EDEMA. A brief interruption in blood supply—a TRANSIENT ISCHEMIC ATTACK (TIA)—usually causes no serious damage. An interruption lasting more than several minutes may result in CEREBRAL INFARCTION. See CEREBROVASCULAR ACCIDENT; STROKE.

**cerebral lateralization** see HEMISPHERIC LATERALIZATION.

**cerebral lesion** see BRAIN LESION.

**cerebral pacemaker** a hypothetical group of nerve cells in the brain that are believed to regulate the rhythms of BRAIN WAVES in the cerebral hemispheres. The cerebral pacemaker is believed to be located at the base of the brain, in the region of the HYPOTHALAMUS or in the RETICULAR FORMATION.

**cerebral palsy (CP)** a set of nonprogressive movement and posture disorders that results from trauma to the brain occurring prenatally, during the birth process, or before the age of 5. Symptoms include spasticity, uncontrolled movements (see ATHETOSIS), paralysis, unsteady gait, and speech abnormalities (see DYSARTHRIA) but may be accompanied by disorders of any other brain function, resulting in cognitive changes, seizures, visual defects, tactile impairment, hearing loss, and intellectual disability. CP is commonly classified into the following types: **spastic**, the most

common, resulting from damage to the motor cortex, corticospinal tract, or pyramidal tract; **dyskinetic**, resulting from damage to the basal ganglia; **ataxic**, resulting from damage to the cerebellum; and **mixed**, in which more than one type is evident.

**cerebral peduncle** either of two cylindrical bundles of nerve fibers that pass through the PONS to form the main connection between the CEREBRAL HEMISPHERES and the spinal cord. Also called **crus cerebri**.

**cerebral specialization** the differential contribution of the two cerebral hemispheres to many functions. See HEMISPHERIC LATERALIZATION.

**cerebral stimulation** see BRAIN STIMULATION.

**cerebral syphilis** a condition that results when untreated syphilis involves the cerebral cortex and surrounding meningeal membranes, causing GENERAL PARESIS. The condition, which usually develops about 10 years after the initial infection, is marked by irritability, memory impairment, inability to concentrate, headaches, insomnia, and behavioral deterioration. See NEUROSYPHILIS.

**cerebral thrombosis** see THROMBOSIS.

**cerebral trauma** any damage to the brain, which may be temporary or permanent, following a blow to the head of sufficient severity to produce a concussion, contusion, or laceration.

**cerebral type** a body type in which the central nervous system is thought to have a dominant role, resulting in pronounced intellectual and cognitive abilities. See CARUS TYPOLOGY; ROSTAN TYPES.

**cerebral vascular accident** see CEREBROVASCULAR ACCIDENT.

**cerebral vascular disease** see CEREBROVASCULAR DISEASE.

**cerebral vascular insufficiency** see CEREBROVASCULAR INSUFFICIENCY.

**cerebral ventricle** see VENTRICLE.

**cerebral vesicle** an outgrowth of the embryonic NEURAL TUBE that develops into one of the three main regions of the brain: namely, the FOREBRAIN, MIDBRAIN, or HINDBRAIN.

**cerebration** *n.* any kind of conscious thinking, such as pondering or problem solving. —**cerebrate** *vb.*

**cerebritis** *n.* an infection of the brain. See CEREBRAL INFECTION.

**cerebro-** (**cereb-**) *combining form* brain.

**cerebrocranial defect** a deformity or dysfunction involving the cerebrum and the eight bones of the skull that form a protective layer around it. An example is the premature closing of the sutures of the skull, resulting in a displacement of cerebral tissues.

**cerebromacular** *adj.* referring to diseases, such as TAY-SACHS DISEASE, that are characterized by impairment of the brain and sometimes also by degeneration of the retina.

**cerebroside** *n.* a type of lipid present in the MYELIN SHEATH of nerve fibers.

**cerebrospinal fluid (CSF)** the fluid within the CENTRAL CANAL of the spinal cord, the four VENTRICLES of the brain, and the SUBARACHNOID SPACE of the brain. It serves as a watery cushion to protect vital tissues of the central ner-

vous system from damage by shock pressure, and it mediates between blood vessels and brain tissue in exchange of materials, including nutrients.

**cerebrotonia** *n.* the personality type that, according to SHELDON'S CONSTITUTIONAL THEORY OF PERSONALITY, is associated with an ectomorphic (linear, fragile) physique (see ECTOMORPH). Cerebrotonia is characterized by a tendency toward introversion, restraint, inhibition, love of privacy and solitude, and sensitivity. —**cerebrotonic** *adj.*

**cerebrovascular accident (CVA)** a disorder of the brain arising from cerebrovascular disease, such as CEREBRAL HEMORRHAGE, CEREBRAL EMBOLISM, or cerebral THROMBOSIS, resulting in temporary or permanent alterations in cognition, motor and sensory skills, or levels of consciousness. This term is often used interchangeably with STROKE. Also called **cerebral vascular accident**.

**cerebrovascular disease** a pathological condition of the blood vessels of the brain. It may manifest itself as symptoms of STROKE or a TRANSIENT ISCHEMIC ATTACK. Also called **cerebral vascular disease**. See also CEREBROVASCULAR ACCIDENT.

**cerebrovascular insufficiency** failure of the cardiovascular system to supply adequate levels of oxygenated blood to the brain tissues. The condition usually arises when one of the four main arteries supplying the brain—namely, the two carotid and two vertebral arteries—is interrupted. It may also result from generalized ARTERIOSCLEROSIS or the inability of the heart to maintain adequate blood flow to the brain. Also called **cerebral vascular insufficiency**.

**cerebrum** *n.* the largest part of the brain, forming most of the FOREBRAIN and lying in front of and above the cerebellum. It consists of two CEREBRAL HEMISPHERES bridged by the CORPUS CALLOSUM. Each hemisphere is divided into four main lobes: the FRONTAL LOBE, OCCIPITAL LOBE, PARIETAL LOBE, and TEMPORAL LOBE. The outer layer of the cerebrum—the CEREBRAL CORTEX—is intricately folded and composed of GRAY MATTER. Also called **telencephalon**. [Latin, literally: “brain”]

**CERQ** abbreviation for COGNITIVE EMOTION REGULATION QUESTIONNAIRE.

**certainty of an attitude** the level of subjective confidence that a person has regarding (a) the extent to which he or she has a clear notion of his or her attitude and (b) the degree to which that attitude is a valid evaluation of the ATTITUDE OBJECT. It is related to ATTITUDE STRENGTH.

**certainty of paternity** the degree to which a putative parent can be certain that he, she, or it is the parent of an offspring. Because of internal fertilization and gestation, all female mammals are certain of maternity, but no male mammal can be 100% certain of paternity. In birds, BROOD PARASITISM can trick parents of both sexes into caring for chicks unrelated to either parent.

**certifiable** *adj.* **1.** describing people who, because of mental illness, may be a danger to themselves or others and are therefore eligible to be institutionalized. See CERTIFICATION LAWS; COMMITMENT LAWS. **2.** having met the requirements to be formally recognized by the relevant licensing or sanctioning body.

**certificate of need (CON)** written permission that a health care organization must obtain from a government body before making changes that involve expansion or reconstruction. The purpose of this requirement is to certify

that the new services so provided will meet the needs of those for whom they are intended and to prevent excessive or duplicative development.

**certification** *n.* **1.** the formal process by which an external agency affirms that a person has met predetermined standards and has the requisite knowledge and skills to be considered competent in a particular area. Certification applies to individuals and ACCREDITATION applies to institutions. See also CREDENTIALING. **2.** the legal proceedings in which appropriate mental health care professionals formally confirm that a person has a mental disorder, which may result in COMMITMENT of that person. —**certificated** *adj.*

**certification laws** **1.** legislation governing the admission of individuals to mental institutions, including commitment proceedings as well as a review of case records to determine whether health care is necessary and whether the institution and type of care are appropriate. **2.** state laws governing the right of an individual to describe himself or herself as a psychologist.

**certiorari** *n.* a writ issued by a superior court demanding review of the action of a lower court. For example, if the U.S. Supreme Court issues a writ of certiorari (Latin, literally: “to be informed”), it has agreed to review a case that was decided by a lower court and subsequently appealed.

**cerumen** *n.* the waxlike secretion normally present in the EXTERNAL AUDITORY MEATUS of the ear. Also called **earwax**.

**cerveau isolé** a nonhuman animal whose MIDBRAIN has been transected between the inferior and superior colliculi (see COLLICULUS) for experimental purposes. See also ENCÉPHALE ISOLÉ. [French, “isolated brain”]

**cervical** *adj.* **1.** relating to, occurring in, or affecting the neck, for example, the CERVICAL NERVES. **2.** pertaining to a necklike structure, especially the CERVIX of the uterus.

**cervical angina** see PSEUDOANGINA.

**cervical ganglion** any of the collections of neural cell bodies (ganglia) of the SYMPATHETIC NERVOUS SYSTEM that occur in the neck region. They innervate the pupils, sweat glands of the head, salivary glands, and heart.

**cervical nerve** any of the eight SPINAL NERVES in the neck area. Each has a DORSAL ROOT that is sensory in function and a VENTRAL ROOT that has motor function.

**cervical plexus** a nerve network formed from the VENTRAL ROOTS of the upper four CERVICAL NERVES. This plexus is anesthetized for surgical operations in the region between the jaw and the collarbone.

**cervical sprain syndrome** see WHIPLASH.

**cervix** *n.* in anatomy, any necklike part, especially the neck of the UTERUS, which is the portion of the uterus that projects into the vagina. The cervix of a tooth is the slightly constricted part between the crown and the root.

**CES** abbreviation for cranial electrical stimulation. See ELECTROSLEEP THERAPY.

**Cesamet** *n.* a trade name for NABILONE.

**cesarean section (caesarean section; C-section)** a surgical procedure in which incisions are made through a woman's abdominal and uterine walls to deliver a baby under circumstances in which vaginal delivery is inadvisable. The name derives from the erroneous belief that Gaius Julius Caesar (100–44 BCE) was delivered in this manner.

**CES-D** abbreviation for CENTER FOR EPIDEMIOLOGIC STUDIES DEPRESSION SCALE.

**CET** abbreviation for CEREBRAL ELECTROTHERAPY.

**CF 1.** abbreviation for characteristic frequency. See TUNING CURVE. **2.** abbreviation for CUMULATIVE FREQUENCY.

**CFA** abbreviation for CONFIRMATORY FACTOR ANALYSIS.

**CFF** abbreviation for CRITICAL FLICKER FREQUENCY.

**C fiber** an unmyelinated peripheral nerve fiber (axon) that conducts pain information slowly. C fibers vary from approximately 0.4 to 1.2  $\mu\text{m}$  in diameter. See also A FIBER; B FIBER.

**CFS** abbreviation for CHRONIC FATIGUE SYNDROME.

**cGMP** abbreviation for CYCLIC GMP.

**chained schedule** a SCHEDULE OF REINFORCEMENT for a single response in which a sequence of at least two schedules, each accompanied by a distinctive stimulus, must be completed before primary reinforcement occurs. For example, in a chained fixed-ratio 10, fixed-ratio 50 schedule, 10 responses change the stimulus situation and then 50 more result in primary reinforcement. Chained schedules are often used to study conditioned reinforcement. Also called **chained reinforcement**. Compare TANDEM REINFORCEMENT.

**chaining** *n.* an OPERANT CONDITIONING technique in which a complex behavioral sequence is learned. Animals, both human and nonhuman, can be taught to perform relatively elaborate sequences of activities by this method, which makes PRIMARY REINFORCEMENT contingent on the final response in the series. In **backward chaining**, the final response is taught first. Once established, the stimulus for that response becomes a conditioned reinforcer that is used to reinforce the next-to-last response in the chain; this stimulus is then used to reinforce another response. The chain is thus taught backward, one response at a time. In **forward chaining**, the chain is taught by reinforcing the first step in the sequence, then the second, and so on until the entire sequence is learned. Also called **behavior chaining**.

**chain of behavior** see BEHAVIOR PATTERN.

**chain reproduction** in social and cultural psychology, the process by which material (e.g., ideas or stories) is relayed from person to person or group to group and altered slightly at each stage of transmission. In group exercises based on this process, the ultimate product can be compared with the original in order to show, for example, that a description of a cat has gradually become that of a lion. The same type of distortion occurs in the passing on of rumors and gossip through the processes of leveling (simplification), sharpening (emphasis on selected details), and assimilation (altering the accounts to suit attitudes, expectations, and prejudices).

**chakra** *n.* in Eastern philosophy, one of the seven energy centers in the body. The chakras roughly correspond with the endocrine system. Each chakra symbolizes different, ascending human needs and has a sound (MANTRA) and color associated with it. Focused awareness and contemplation of the chakras may be practiced in YOGA and in other therapeutic approaches and traditions.

**challenge 1.** *n.* an obstacle appraised as an opportunity rather than a threat. A threat becomes a challenge when the individual judges that his or her coping resources are

adequate not only to overcome the stress associated with the obstacle but also to improve the situation in a measurable way. **2.** *vb.* to pose or face with an obstacle or threat.

**challenged** *adj.* describing an individual with a disability. The word is often considered to be euphemistic.

**challenge for cause** a request made to the judge during VOIR DIRE that a prospective juror be removed for some specific reason. For example, a juror with some relationship to either the prosecution or the defense may be removed as a result of a challenge for cause. Compare PEREMPTORY CHALLENGE.

**challenge suggestion** a suggestion designed to test for and deepen an individual's HYPNOTIC SUSCEPTIBILITY. It usually consists of a simple physical command. For example, the hypnotist may say, "You want to close your eyes": If the individual immediately does so, the hypnotist may conclude that this person is highly suggestible and has entered a state of hypnosis. Compliance with the challenge suggestion may also increase the individual's sense of being without volitional power and reduce his or her ability to reject subsequent suggestions. Also called **challenge test**. See also HYPNOTIC RIGIDITY; IDEOMOTOR SUGGESTION.

**challenging behavior** behavior that is dangerous or that interferes in participation in preschool, educational, or adult services and often necessitates the design and use of special interventions. The term is used principally in human services in the United Kingdom and within educational services in the United States and most typically refers to behaviors of people with intellectual or developmental disabilities.

**CHAMPUS** acronym for CIVILIAN HEALTH AND MEDICAL PROGRAM OF THE UNIFORMED SERVICES.

**chance difference** a difference between two samples that arises from the nature of sampling itself, rather than from any intervention by a researcher. For example, scores obtained from two groups of research participants might vary because of personal factors affecting some individuals (e.g., financial worries) and not because of the conditions of the study.

**chance variation 1.** any change in hereditary traits due to unknown factors. **2.** see RANDOM VARIATION.

**change agent 1.** a specific causative factor or element or an entire process that results in change, particularly in the sense of improvement. In psychotherapy research, a change agent may be a component or process in therapy that results in improvement in the behavior or psychological adaptation of a patient or client. **2.** an individual who instigates or implements change within a social unit or situation (e.g., a family or group) or within an organization by communicating to, managing, and encouraging others in the change.

**change blindness** a failure to notice changes in the visual array appearing in two successive scenes. This is surprisingly common whenever the brief movement (the transient) that usually accompanies a change is somehow masked or interrupted. In experimental investigations, the transient is often blocked by inserting a blank screen between the original image (e.g., a picture of an airplane) and the changed image (e.g., a second picture of the same airplane with an engine missing), or by scattering a few small, high-contrast shapes across the picture simultaneously with the change. Detection failures also occur when changes are made during blinks, SACCADES, and other nat-

ural occlusions, or when changes happen gradually and thus have no transients. Such failures have also been documented in such real-world situations as automobile accidents, eyewitness identifications, military operations, and everyday interpersonal interactions.

Attention-based explanations for the phenomenon attribute it to diversion of an individual's focus from the changing object. Other theories postulate that failure to notice changes represents a failure to encode the visual information in working memory, generally because it was not relevant to task demands. Still other theories emphasize a failure to compare prechange and postchange mental representations of the visual environment. See also ATTENTIONAL BLINDNESS; INATTENTIONAL BLINDNESS; MIND-SIGHT; REPETITION BLINDNESS. [term coined in 1997 by Canadian psychologist and computer scientist Ronald A. Rensink and colleagues]

**change effect** in parapsychology, a phenomenon in which the physical structure of an object appears to have been altered by paranormal means, as in the alleged structural changes to metal in "spoon-bending" demonstrations. See PSYCHOKINESIS.

**change management** the process of planning, implementing, and evaluating change within organizations or communities, with the goal of realizing the benefits of change while implementing it as efficiently, smoothly, and cost-effectively as possible. Change management practices include effective communication regarding the change, such as the identification of intended consequences, and the prediction of and preparation for unintended consequences.

**change of life** see CLIMACTERIC.

**change of venue** the transfer of a trial to another location if there is evidence that obtaining a fair and unbiased jury may be difficult in the original location, often owing to extensive PRETRIAL PUBLICITY.

**change-over delay (COD)** in CONCURRENT SCHEDULES OF REINFORCEMENT, a delay imposed between an organism's switch between alternative responses and the presentation of REINFORCEMENT.

**change score** see DIFFERENCE SCORE.

**change therapy** see CONVERSION THERAPY.

**changing-criterion design** an experimental approach in which an initial baseline phase is followed by implementation of a treatment program delivered in a series of phases. Each phase has its own criterion rate for the target behavior, and—once responding becomes stable—an incremental shift in the criterion occurs to implement another phase. For example, a researcher studying the effectiveness of money in reducing caffeine consumption may use a changing-criterion design with four treatment phases, each gradually decreasing the amount below which participants must maintain their caffeine intake. The changing-criterion design is distinguished from other approaches (e.g., the A-B-A DESIGN) in that it does not require the withdrawal of an intervention, an extended baseline, or treatment implementation across multiple behaviors or treatments.

**channel** *n.* an information transmission system. For example, the nervous system transmits coded messages from sense receptors (input) to effectors (output).

**channel capacity** in information theory, the maximum

capacity of information or messages that a given channel can accommodate.

**channel factors** characteristics of the mode by which a persuasive message is communicated. For example, presentation of a message via written text (vs. an audio recording) is a channel factor. See also MESSAGE-LEARNING APPROACH.

**channels of communication** **1.** in the social psychology of groups, the paths that are usually available for the transmission of information from one person to one or more other people in the group or organization. For example, in a highly centralized communication structure, all information passes through the individual at the center of the network, who then routes it to other members of the organization. **2.** the sensory means by which information is conveyed in face-to-face communication between people, comprising speech (source: vocal track; destination: ear), kinesics (body movement; eye), odor (chemical processes; nose), touch (body surface; skin), observation (body surface; eye), and proxemics (body placement; eye).

**chaos theory** an area of mathematical theory that deals with nonlinear systems that are profoundly affected by their initial conditions, tiny variations in which can produce complex, unpredictable, and erratic effects. It has been applied by some psychological researchers to the study of human behavior. See BUTTERFLY EFFECT; COMPLEXITY THEORY; DYNAMIC SYSTEMS THEORY; SENSITIVE DEPENDENCE.

**character** *n.* the totality of an individual's attributes and PERSONALITY TRAITS, particularly his or her characteristic moral, social, and religious attitudes. Character is often used synonymously with PERSONALITY. See CHARACTER TYPE.

**character analysis** **1.** the form of psychoanalytic treatment advocated by Austrian psychoanalyst Wilhelm Reich (1897–1957) in 1933 as focusing less on symptoms and more on restructuring patients' disordered character to enable them to overcome their self-protective ARMORING (i.e., RESISTANCE) against facing their neuroses. **2.** see CHARACTEROLOGY.

**character development** the gradual development of moral concepts, conscience, religious values or views, and social attitudes as an essential aspect of personality development.

**character disorder** formerly, in psychoanalysis, an alternative name for PERSONALITY DISORDER.

**character displacement** a divergence in a physical, physiological, or behavioral trait within two or more populations of a species that reduces competition between those populations and, over time, leads to the development of separate species. Charles DARWIN found several types of finches in the Galápagos Islands with different forms of bills for eating seeds of different sizes or capturing insects of different sizes. This differentiation of bill size and shape from a founder species is a classic example of character displacement.

**characteristic** *n.* **1.** a particular feature or quality of a person, animal, or other unit of interest, especially any of the enduring qualities or traits that define an individual's nature or personality in relation to others. **2.** a PARAMETER that describes a population distribution, such as its mean or STANDARD DEVIATION.

**characteristic frequency (CF)** see TUNING CURVE.

**character neurosis** in psychoanalysis, a former name, used interchangeably with **neurotic character**, for PERSONALITY DISORDER.

**characterology** *n.* **1.** formerly, the branch of psychology concerned with character and personality. Also called **character analysis**. **2.** a pseudoscience in which character is “read” by external signs, such as hair color or facial type.

**character strength** a positive trait, such as kindness, teamwork, or hope, that is morally valued in its own right and contributes to the fulfillment of the self and others. Also called **human strength**. See POSITIVE PSYCHOLOGY.

**character structure** the organization of the enduring traits and attributes that make up a person’s CHARACTER.

**character traits** in trait conceptions of personality functioning, dispositional tendencies having to do with values, motives, and the regulation of behavior in accord with moral and ethical standards.

**character type** **1.** see PERSONALITY TYPE. **2.** in psychoanalytic theory, a personality type defined by the kinds of DEFENSE MECHANISM used (e.g., a PHOBIC CHARACTER) or by fixation at a particular stage in PSYCHOSEXUAL DEVELOPMENT (e.g., an ORAL PERSONALITY).

**Charcot–Marie–Tooth disease** a slowly progressive neuromuscular disorder characterized by muscle wasting (atrophy) and weakness in the arms (from the elbows down) and legs (from the knees down); feeling and movement in these areas may be lost. The disease, which results from degeneration of peripheral motor and sensory nerves, typically does not affect life expectancy. Usually autosomal dominant (see DOMINANT ALLELE), it occasionally has recessive forms resulting in more severe symptoms. Also called **peroneal muscular atrophy**. [Jean-Martin CHARCOT and Pierre Marie (1853–1940), French neurologists; Howard Tooth (1856–1925), British physician]

**charisma** *n.* the special quality of personality that enables an individual to attract and gain the confidence of large numbers of people. It is exemplified in outstanding political, social, and religious leaders. —**charismatic** *adj.*

**charismatic authority** see AUTHORITY.

**charismatic leader** the type of political or social leader who commands high levels of devotion, enthusiasm, and commitment from his or her followers. German sociologist Max Weber (1864–1920) defined charismatic leaders as those who are widely admired and respected by their followers (e.g., Napoleon, Churchill), but the term is more popularly used to mean leaders who owe their success to personal charm or magnetism.

**charity** *n.* any act that benefits other people who lack essential resources or otherwise are in need of assistance. Unlike ALTRUISM, charitable behavior may be carried out with the expectation of benefits in return. For example, a person who volunteers time at an organization that provides food and shelter to those who are homeless may do so primarily to be recognized in the local newspaper.

**charlatan** *n.* **1.** a person who makes a pretense of having knowledge or skills that he or she does not in fact possess, especially in the field of medicine. See also QUACK. **2.** in parapsychology, a person who uses conjuring tricks or other forms of deliberate deception to claim paranormal powers.

**Charles Bonnet syndrome** complex visual hallucina-

tions without delusions or the loss of insightful cognition, typically seen in older adults who have severe visual impairment. Such hallucinations are usually nonthreatening and often pleasant and are not indicative of mental illness or psychological disorder. Also called **Bonnet syndrome**. [Charles Bonnet (1720–1793), Swiss naturalist and philosopher]

**charm** *n.* **1.** the power of pleasing, attracting, or arousing interest in other people through one’s manner or other personal qualities. **2.** an amulet often worn for its associative value to bring good luck or to protect from evil. **3.** a magic spell, usually consisting of an INCANTATION with associated ritual actions.

**Charpentier’s bands** illusory light and dark bands that appear to follow a moving slit of light in the dark. [Pierre Marie Augustin Charpentier (1852–1916), French experimentalist]

**Charpentier’s illusion** see SIZE–WEIGHT ILLUSION. [Pierre Charpentier]

**chart** **1.** *n.* a graphic or tabular display of data. **2.** *vb.* to create such a display.

**chastity** *n.* the state of abstaining from illicit sexual intercourse or—by extension—from all sexual activity. In religious usage, it also includes the concept of not having sexual urges or impure thoughts. See also CELIBACY. —**chaste** *adj.*

**chat** *n.* see KHAT.

**chauvinism** *n.* excessive favoritism toward a social, political, or ethnic group. Initially, the word referred to extreme patriotism, as it derives from the name of a French soldier (Nicolas Chauvin) who displayed excessive devotion to Napoleon; now, however, it is often used to mean the mistaken belief that men are superior to women (**male chauvinism**). —**chauvinistic** *adj.* —**chauvinist** *n.*

**CHD** abbreviation for CORONARY HEART DISEASE.

**ChE** abbreviation for CHOLINESTERASE.

**cheating** *n.* **1.** influencing one’s own or others’ outcomes by deceit, trickery, or other unfair maneuvers. Because cheating is disruptive to maintaining a variety of social relationships, human beings and other animals have developed strategies to detect and punish it. **2.** in evolutionary psychology, using asocial strategies to gain an evolutionary advantage. For example, males of some species who have formed an exclusive PAIR BOND with a female may nonetheless seek to mate with other females so as to increase their chances of producing offspring. **3.** in RECIPROCAL ALTRUISM, the failure of an individual to aid another individual who has provided assistance in the past. **4.** see INFIDELITY. —**cheat** *vb., n.*

**checkerboard pattern** a pattern of alternating light and dark squares used in visual psychophysical tests and to stimulate visually responsive cells in the brain.

**checklist** *n.* a list of items that are to be observed, recorded, corrected, or otherwise considered in some manner. See also BEHAVIOR CHECKLIST.

**check reading** in ergonomics, a machine display that provides information about the particular state of a system and is used by an operator to assess whether that system is operating within normal limits. Compare ANNUNCIATOR.

**ChEI** abbreviation for CHOLINESTERASE INHIBITOR.

**cheilophagia (chilophagia)** *n.* the repeated biting of one's own lips.

**cheiromancy** *n.* see PALMISTRY. —**cheiromancer** *n.*

**chelation** *n.* the formation of chemical bonds between a metal ion and two or more nonmetallic ions. It can be used to remove certain types of ions from biological reactions or from the body, as in the removal of lead or mercury from the body by use of chelating agents.

**chemesthesis** *n.* the sense receptive to chemical stimuli through activation of receptors in the eyes, nose, mouth, and throat other than those associated with the CHEMICAL SENSES, typically those involved in pain, touch, and thermal awareness. An example is the activation of pain receptors deriving from the burn in the taste of a chili pepper. Also called **common chemical sense**.

**chemical antagonism** see ANTAGONIST.

**chemical brain stimulation** the placing of various NEUROTRANSMITTERS or other brain-active chemicals in specific brain locations for therapeutic or experimental purposes.

**chemical castration** the administration of chemicals (e.g., estrogens or ANTIANDROGENS) that block the effects of androgens and inhibit testicular production to manage advanced prostate cancer or, more controversially, to reduce sexual drive in sex offenders. Research has shown that a minority of sex offenders will offend again after chemical castration, indicating that sex drive is not the only cause of sexual offenses.

**chemical communication** the use of ODORANTS and other substances (see EXTERNAL CHEMICAL MESSENGER) to transmit information between individuals. Many nonhuman animals have specialized scent glands for scent production and specialized behavior for depositing scents. Chemical signals communicate the identity of species, subspecies, and individuals; reproductive status; dominance status; fear; and territorial boundaries. An advantage of chemical communication is that signals can remain long after the communicator has left.

**chemical dependence** see SUBSTANCE DEPENDENCE.

**chemical senses** the senses receptive to chemical stimulation (i.e., through contact with chemical molecules or electrolytes), particularly the senses of SMELL and TASTE. Airborne molecules are inhaled and dissolved in the mucous membrane of the OLEFACTORY EPITHELIUM to confer odors. Molecules dissolved in liquids are delivered to the TASTE CELLS on the tongue, soft palate, larynx, and pharynx to confer tastes.

**chemical stimulation** activity or a change of activity generated in olfactory (smell) or gustatory (taste) receptor cells by contact with specific electrolytes or molecules. Both CHEMICAL SENSES have specialized receptor proteins to which stimulating molecules bind to create electrical potentials. These potentials are passed on to peripheral nerves that transmit the message to the central nervous system for interpretation. See CHEMORECEPTOR.

**chemical sympathectomy** see SYMPATHECTOMY.

**chemical synapse** a type of specialized junction through which a signal is transmitted from one neuron to another across the narrow gap (SYNAPTIC CLEFT) separating them through the release and diffusion of NEUROTRANSMITTER. Though slower than ELECTRICAL SYNAPSES, chemical synapses are more flexible and comprise the ma-

jority of neuronal junctions within the body. Because of this prevalence, the qualifier generally is omitted and SYNAPSE used alone to denote a chemical junction.

**chemical trail** a track of chemical signals left by some nonhuman animals along the ground or another surface that allows group members to follow in the same direction as the trail maker but at a different time. Ants, for example, often leave chemical trails that provide direction toward foraging sites or the home nest.

**chemical transmission** the transmission of nerve impulses between nerve cells by NEUROTRANSMITTER molecules. See also SYNAPSE.

**chemical transmitter** see NEUROTRANSMITTER.

**chemical warfare** combat and associated military operations involving the use of incapacitating agents (e.g., poisons, contaminants, irritants), some of which may be lethal. Chemical weapons conventions prohibit the development, production, stockpiling, and use of such agents.

**chemistry** *n.* 1. the composition, attributes, and reactions of substances, particularly at the atomic level. 2. the science of such phenomena. See also NEUROCHEMISTRY.

**chemoaffinity hypothesis** the notion that each neuron has a chemical identity that directs it to synapse on the proper target cell during development. [developed in the 1940s by U.S. psychologist Roger SPERRY]

**chemoattractant** *n.* a chemical compound that attracts particular classes of GROWTH CONES of neurons and so directs the growth of their axons. Compare CHEMOREPELLANT.

**chemoreceptor** *n.* a sensory nerve ending, such as any of those in the TASTE BUDS or OLEFACTORY EPITHELIUM, that is capable of reacting to certain chemical stimuli. The chemical molecule or electrolyte generally must be in a solution to be detected by the chemoreceptors for taste; it must be volatile to be detected by those involved in smell. In humans, there are hundreds of different taste receptor proteins and a total of about 300,000 TASTE CELLS, with some taste receptors reacting only to certain stimuli, such as those producing a bitter taste. Humans also have about 1,000 types of OLEFACTORY RECEPTORS and about 1,000 receptors of each type, giving a total of one million olfactory receptors; other mammals (e.g., dogs) may have ten times that number. The relation between specific olfactory stimuli and particular olfactory receptors is still being debated.

**chemoreceptor trigger zone (CTZ)** a cluster of cells in the MEDULLA OBLONGATA that is sensitive to certain toxic chemicals and reacts by causing vomiting. The trigger zone is particularly sensitive to narcotics and responds by producing dizziness, nausea, and vomiting, the precise effects depending on the agent and the dosage. See also AREA POSTREMA.

**chemorepellant** *n.* a chemical compound that repels particular classes of GROWTH CONES of neurons and so directs the growth of their axons. Compare CHEMOATTRACTANT.

**chemosensory event-related potential (CSERP)** an electrical BRAIN POTENTIAL produced by a chemosensory event. This is a more general term than **olfactory evoked potential (OEP)**, which refers specifically to electrical potentials produced by olfactory events rather than trigeminal events (see TRIGEMINAL CHEMORECEPTION) or gustatory events.

**chemotaxis** *n.* see TAXIS.

**chemotherapy** *n.* the use of chemical agents to treat diseases, particularly cancer, in which case it is contrasted with RADIATION THERAPY. —**chemotherapeutic** *adj.* —**chemotherapist** *n.*

**Chernoff faces** a representation of data in the form of stylized faces, designed to take advantage of the ability of observers to discern subtle changes in facial expressions. Features such as head and eye eccentricity, eyebrow slant, and mouth size represent different values of the variables of interest. [Herman **Chernoff** (1923– ), U.S. statistician]

**chessboard illusion** an illusion of depth that occurs if a systematically distorted checkerboard pattern (known as the **Helmholtz chessboard**) is viewed close to the retina. The pattern contains small squares in the center, which become progressively larger toward the periphery. The progressive enlargement of the squares compensates for the progressive distortion of the image in the peripheral retina, caused by the optics of the eye. [described by Hermann von HELMHOLTZ]

**chest voice** the lower reaches, or range, of the speaking or singing voice, in which tone is created by pectoral breathing and chest resonance with little or no nasal resonance. A calm and relaxed normal speaking tone is generally delivered in a chest voice. Compare HEAD VOICE.

**Cheyne–Stokes breathing** labored breathing that alternates between increasing and decreasing rates, as in premature infants and individuals in a coma. [John **Cheyne** (1777–1836), Scottish medical writer; William **Stokes** (1804–1878), Irish physician]

**chi (qi)** *n.* in Eastern philosophy, life-force energy (from Chinese, “energy”). Blockages in chi are believed to create illness. The equivalent Hindu concept is **prana** (Sanskrit, literally: “breath of life”). See also ACUPUNCTURE.

**chiaroscuro** *n.* the illusion of depth or distance in a picture produced by the use of light and shade.

**chiasmal syndrome** loss of visual acuity and abnormalities of the visual field associated with damage to the OPTIC CHIASM and the adjacent optic nerve or OPTIC TRACT. Typical features are BITEMPORAL HEMIANOPIA and OPTIC ATROPHY. The majority of cases are caused by brain tumors.

**chibih** *n.* see SUSTO.

**Chicago school** a school of psychology that emerged at the University of Chicago in the early 20th century, associated with psychologists John DEWEY, James R. ANGELL, and Harvey A. CARR. Their approach, called FUNCTIONALISM, was related to the ACT PSYCHOLOGY of Franz BRENTANO; it was an attempt to modify the subject matter of psychology by introducing the Darwinian idea that mental activities subserve an adaptive biological action function that should be the focus of psychology.

**chicken game** a type of laboratory game used in experimental investigations of bargaining and competition, in which each party in the interaction can win only by selecting the competitive rather than the cooperative alternative. For example, if two cars traveling in opposite directions are stopped at a narrow intersection without traffic lights and both drivers are in a hurry, each motorist may want to start first across the intersection, pursuing his or her own interest (i.e., choosing the competitive alternative) and hoping that the other will give way (i.e., will adopt the

more cooperative strategy). The danger is that if both parties choose the competitive strategy, both lose. This game differs from the PRISONER’S DILEMMA, in which both parties have incentives both to cooperate and compete with their partner. See also GAME THEORY.

**chicken pox** a highly contagious viral infection characterized by skin eruptions with fever, headache, anorexia, and other mild constitutional symptoms. The **varicella-zoster** virus, which causes chicken pox in children, also causes shingles in adults, although children or adults may experience both forms (see HERPES INFECTION). A common neurological complication is acute CEREBELLAR ATAXIA. Cranial nerve paralysis also may follow a chicken pox infection. Also called **varicella**.

**child** *n.* a young boy or girl between infancy and adolescence. See CHILDHOOD.

**child abuse** harm to a child caused by a parent or other caregiver. The harm may be physical (violence), sexual (violation or exploitation), psychological (causing emotional distress), or neglect (failure to provide needed care). See also BATTERED-CHILD SYNDROME.

**child advocacy** any organized and structured interventions on behalf of children by professionals or institutions, often in relation to such issues as special parenting needs, child abuse, and adoption or foster care.

**child analysis** the application of psychoanalytic principles (considerably modified from those of CLASSICAL PSYCHOANALYSIS) to the treatment of children. In his first and most famous case, Sigmund FREUD analyzed 5-year-old LITTLE HANS by having the child answer questions through his father, but Freud never analyzed a child patient directly. Pioneers in the field are Melanie KLEIN, who developed the PSYCHOANALYTIC PLAY TECHNIQUE to achieve a deep analysis of the child’s unconscious, and Anna FREUD, whose method was more pedagogical and encouraged EGO DEVELOPMENT. See also PLAY THERAPY.

**Child Behavior Checklist (CBCL)** a standardized instrument used to assess the behavioral problems and competencies of children between the ages of 4 and 18 years (a separate version is available for assessing the behavior of children ages 2 to 3). The CBCL is administered to parents, who describe their children’s behavior by assigning a rating to each of the more than 100 items on the checklist. The items assessed range from internalizing behaviors (e.g., fearful, shy, anxious, inhibited) to externalizing behaviors (e.g., aggressive, antisocial, undercontrolled). See also EXTERNALIZING–INTERNALIZING. [developed in 1983 by U.S. psychologists Thomas M. Achenbach (1940– ) and Craig S. Edelbrock (1951– )]

**child care** **1.** the daytime care of children by a person or organization while parents are at work. **2.** the full-time residential care of children who have no other home or whose home life is seriously troubled. **3.** broadly, the care of children of any age in any setting.

**child care facilities** facilities licensed to provide regular out-of-home care to children during the working day. Child care facilities may be privately run but may also be associated with firms, churches, or social agencies. Such a facility is often referred to as a **day care center**.

**child care worker** an individual trained to attend to children on a day-to-day basis in a variety of group settings, including child care centers, schools, businesses, private households, and health care institutions. Child care

workers perform such tasks as dressing, feeding, bathing, and overseeing play.

**child-centered** *adj.* focused on the needs, interests, safety, and well-being of children, as in **child-centered home** or **child-centered education**. See also CHILD-FOCUSED FAMILY.

**child custody** the care, protection, and supervision of a child. In certain legal proceedings, such as divorce or separation, the court may grant custody to one or both parents following a CHILD CUSTODY EVALUATION.

**child custody evaluation** a procedure, often conducted by clinical psychologists, that involves evaluating parenting behavior, analyzing parental capacity to address a child's needs, and providing the court with a recommendation regarding CHILD CUSTODY arrangements. See PRIMARY CARETAKER STANDARD.

**child day care** see CHILD CARE.

**child development** the sequential changes in the behavior, cognition, and physiology of children as they grow from birth through adolescence. See DEVELOPMENTAL TASK.

**child-directed speech** the specialized REGISTER of speech that adults and older children use when talking to young children. It is simplified and often more grammatically correct than adult-directed speech. See also INFANT-DIRECTED SPEECH.

**child find** in the U.S. educational system, an organized screening and identification program, directed by each state's Department of Education, that identifies preschool children in need of particular services and evaluates their readiness for school entry as well as their risk for developmental disabilities.

**child-focused family** a family in which the needs of one or more children are paramount, sometimes to a point where they dominate the FAMILY CONSTELLATION and the parents' needs become secondary. Also called **child-centered family**.

**child guidance** a mental health approach for children that focuses not only on treatment but also on the prevention of possible future disorders by offering instruction, information, and therapeutic aid to the child and his or her family. Child-guidance services and treatment are typically provided by specialized **child-guidance clinics**. The child-guidance movement emerged in the early 20th century and was at its strongest from the 1940s to 1970s.

**childhood** *n.* **1.** the period between the end of infancy (about 2 years of age) and the onset of puberty, marking the beginning of ADOLESCENCE (10–12 years of age). This period is sometimes divided into (a) early childhood, from 2 years through the preschool age of 5 or 6 years; (b) middle childhood, from 6 to 8–10 years of age; and (c) late childhood or PREADOLESCENCE, which is identified as the 2-year period before the onset of puberty. **2.** the period between 3 or 4 years of age and about 7 years of age. In this context, childhood represents the period after weaning and before children can fend for themselves. Childhood in this more technical sense is unique to humans; other mammals advance directly from infancy to juvenility. See JUVENILE PERIOD. [defined by U.S. anthropologist Barry Bogin (1950– )]

**childhood absence epilepsy** a form of epilepsy in which children below the age of 7 experience frequent ABSENCE SEIZURES. It was formerly called **pyknolepsy**.

**childhood amnesia** the commonly experienced inability to recall events from early childhood (see EARLY MEMORY). Childhood amnesia has been attributed to the facts that (a) cognitive abilities necessary for encoding events for the long term have not yet been fully developed and (b) parts of the brain responsible for remembering personal events have not yet matured. Also called **infantile amnesia**.

**childhood apraxia of speech** see DEVELOPMENTAL APRAXIA OF SPEECH.

**childhood autism** see AUTISM.

**childhood depression** a MAJOR DEPRESSIVE EPISODE that occurs in childhood. Defining symptoms may differ from those of major depressive episodes in adults in that irritable mood is more characteristic than depressed mood, and failure to make expected weight gains often replaces an actual weight loss.

**childhood disintegrative disorder** in *DSM-IV-TR*, a PERVASIVE DEVELOPMENTAL DISORDER characterized by a significant loss of two or more of the following: previously acquired language skills, social skills or adaptive behavior, bowel or bladder control, play, or motor skills. This regression in functioning follows a period of normal development and occurs between the ages of 2 and 10. Impairments in social interaction and communication are also evident. In *DSM-5*, childhood disintegrative disorder is subsumed into AUTISM SPECTRUM DISORDER and is no longer considered a distinct entity.

**childhood disorder** any social, emotional, behavioral, or educational disorder of childhood.

**childhood fears** fears occurring at different stages of childhood, such as fear of strangers, which usually develops around 8 months of age, and fear of heights, which emerges after the child learns to crawl. The content of fear changes for children from 2 to 6 years of age, with fears of darkness, animals, doctors, ghosts, monsters, and storms being common occurrences that usually pass in a few months or years without treatment.

**childhood neurosis** in Freudian theory, the development of psychological symptoms in childhood in response to efforts of defense against conflict.

**childhood-onset fluency disorder** in *DSM-5*, the term for STUTTERING.

**childhood psychosis** a PSYCHOTIC DISORDER with onset in childhood; the defining features (e.g., hallucinations, delusions) are essentially the same as they are for affected individuals in other age groups. Historically, the term has been used much more widely to denote any of a variety of disorders or mental conditions in children that result in severe functional impairment, encompassing, for example, intellectual disability and PERVASIVE DEVELOPMENTAL DISORDERS.

**childhood schizophrenia** schizophrenia with onset prior to age 12; the defining features of schizophrenia are essentially equivalent across all age groups. Historically, the term has been used more widely to denote schizophrenic behavior that appears early in life, encompassing PERVASIVE DEVELOPMENTAL DISORDERS and AUTISM in particular.

**childhood sensorineural lesion** see SENSORINEURAL LESION.

**child molestation** child SEXUAL ABUSE: any sexual be-



havior toward a child by an adult. See also EMOTIONAL INCEST; RITUAL ABUSE.

**child neglect** the denial of attention, care, or affection considered essential for the normal development of a child's physical, emotional, and intellectual qualities, usually due to indifference from, disregard by, or impairment in the child's caregivers. See also PARENTAL REJECTION.

**child–parent relationship therapy (CPRT)** a PLAY THERAPY-focused intervention for parents of children (ages 3–10) with emotional or behavioral difficulties. The therapy aims to help parents gain empathy for their child, improve their parenting skills, and strengthen their relationship with their child so as to reduce parental stress and decrease the child's emotional or behavioral problems. Also called **child–parent relationship training**. [introduced in 1991 by U.S. educator Garry L. Landreth]

**child pornography** pornographic material featuring children. This may include written stories, pictures, or videos of naked children or of children engaging in sexual activity. Child pornography is illegal in the United States, and production or circulation of such materials is usually vigorously prosecuted.

**child psychology** the branch of psychology concerned with the systematic study of the behavior, adjustment, and growth of individuals from birth through adolescence, as well as with the treatment of their behavioral, mental, and emotional disorders. See also DEVELOPMENTAL PSYCHOLOGY.

**child psychotherapy** psychotherapy for children up to the age at which they reach puberty. The focus may be on emotions, cognitions, or behavior. The level of parental involvement typically depends on the age of the child, type of problem, or approach used. The child may be treated concurrently in group or family therapy.

**child-rearing practice** a pattern of raising children that is specific to a particular society, subculture, family, or period in cultural history. Child-rearing practices vary in such areas as methods of discipline, expression of affection, and degree of permissiveness.

**children in need of supervision (CHINS)** children who commit offenses that may lead the court to act in service to them when they cannot be adequately controlled by parents or guardians. The child will typically appear before the court and receive some form of sanction. The crimes that lead to a CHINS classification are STATUS OFFENSES such as truancy, running away from home, and misbehavior at school.

**Children's Apperception Test (CAT)** a projective test for children ages 3 to 10 years that is based on the same principles as the THEMATIC APPERCEPTION TEST. A child is shown 10 drawings of animals (another version of the test, **CAT-H**, presents drawings of humans) and is asked to describe what he or she thinks is happening in each picture. Based on these descriptions, the test aims to measure the child's personality traits, attitudes, and psychodynamic processes. [developed in 1949 by Austrian-born U.S. psychiatrist Leopold Bellak (1916–2002) and Sonya S. Bellak]

**Children's Auditory Verbal Learning Test (CAVLT)** a measure designed for use with children ages 7 to 17 that assesses learning, storage, and retention of auditory information. In five successive LEARNING TRIALS, a child is read the same list of words and asked to recall the list after each time. After a brief delay, the child is again asked to recall the list from memory.

**Children's Complex Figure Test** see COMPLEX FIGURE TEST.

**Children's Depression Inventory (CDI)** a self-report questionnaire, based on the BECK DEPRESSION INVENTORY, designed to assess the severity of depression in children ages 7 to 17 years. Intended primarily as a research tool, the CDI comprises 27 items that each consist of three statements reflecting different levels of severity of a particular symptom. For each item, the participant chooses the statement that best describes himself or herself during the previous 2 weeks. [originally published in 1977 by U.S. clinical psychologist Maria Kovacs (1944– )]

**Children's Embedded Figures Test (CEFT)** a version of the EMBEDDED FIGURES TEST of cognitive style that is designed for children ages 5 to 12 years. Participants are required to detect a simple shape within 25 increasingly complex figures or colored backgrounds. [developed in 1963 by U.S. clinical psychologist Stephen A. Karp (1928– ) and Norma L. Konstadt]

**Children's Manifest Anxiety Scale (CMAS)** a 53-item modification of the TAYLOR MANIFEST ANXIETY SCALE that is appropriate for children. Originally developed in 1956 by U.S. psychologists Alfred Castaneda (1923–1981), Boyd R. McCandless (1915–1975), and David S. Palermo (1929–2011), the CMAS was subsequently revised in 1978 by U.S. educational psychologists Cecil R. Reynolds (1952– ) and Bert O. Richmond (1929– ). This **Revised Children's Manifest Anxiety Scale (RCMAS)** comprises 37 yes–no items measuring the nature and level of anxiety symptoms in children and adolescents ages 6 to 19 years. An updated edition (**RCMAS2**) was published in 2008.

**Children's Personality Questionnaire (CPQ)** a 140-item self-report inventory for children ages 8 to 12 years that is based on CATTELL'S PERSONALITY TRAIT THEORY. It assesses 14 dimensions of personality (e.g., shy vs. bold, self-assured vs. apprehensive, sober vs. enthusiastic) conceptualized as useful in evaluating, understanding, and predicting personal adjustment, social development, and academic performance. [originally developed in 1959 by U.S. educator Rutherford Burchard Porter (1909–2002) and Raymond B. CATTELL]

**child study movement** the first organized effort, launched in the late 19th century by G. Stanley HALL, to apply scientific methods to the study of children. The movement focused on child welfare and, among other things, helped to bring about the passage of laws governing child labor and compulsory education.

**child support** a legally enforceable requirement that parents provide the financial means to meet the economic and educational needs of their children after the parents divorce or separate.

**child visitation** in the context of divorce or situations in which children have been legally placed in the care of another (e.g., foster care), the permission granted by the court allowing a noncustodial parent, grandparent, or other family member some time to visit the child, provided this contact remains in the best interests of the child. Also called **visitation rights**.

**child welfare** the emotional or physical well-being of children, particularly in the context of legal issues or of social programs designed to enrich or intervene in their lives.

**child with special needs** a child who requires SPECIAL

EDUCATION. Such children may have learning disabilities, intellectual disabilities, physical disabilities, or emotional difficulties. Also called **special child**; **special needs child**. See also EXCEPTIONAL CHILD.

**chilophagia** *n.* see CHEILOPHAGIA.

**chimera** *n.* **1.** an organism composed of two or more kinds of genetically dissimilar cells. For example, a chimera may have received a transplant of genetically different tissue, such as bone marrow, or it may have been produced by grafting an embryonic part of one animal onto the embryo of a genetically different animal; the graft may be either from a different species (a xenograft) or from a genetically nonidentical member of the same species (an allograft). **2.** an illusion of the imagination, sometimes something desired but impossible to realize. —**chimeric** *adj.*

**chimeric stimulation** a procedure used by Roger SPERRY and colleagues to study the functions of the two isolated cerebral hemispheres in SPLIT-BRAIN patients. In a typical experiment, participants are presented with an image of a **chimeric face**, showing the left half of one face joined to the right half of a different face. Both halves are shown in gray scale and are adjusted to fit in an apparently natural way. In patients with a surgically severed corpus callosum, the left hemisphere perceives the left half of visual space, and the right hemisphere perceives the right half. If the patient's eyes are fixating on the midline of the chimeric face, each hemisphere fills in the missing half by symmetry, yielding two separate percepts of two different faces. Sperry suggested that in split-brain patients there may be two conscious streams in the two hemispheres. See also COMMISSUROTOMY; LEFT-HEMISPHERE CONSCIOUSNESS; RIGHT-HEMISPHERE CONSCIOUSNESS.

**chimerism** *n.* the presence in an individual of cells with different genotypes, derived from different zygotes. Compare MOSAICISM.

**China white** see FENTANYL.

**Chinese Room argument** a philosophical argument claiming that computers or symbol-processing systems can receive and produce only syntactical streams of ordered signs and not semantic information. The name derives from a thought experiment in which a monolingual English speaker in a sealed room attempts to organize streams of Chinese characters into correct sequences, using only a set of rules of Chinese syntax provided by a computer program, and sends these sequences to a Chinese-speaking recipient outside the room. Success at this task produces an exchange that to the recipient is meaningful conversation but that to the English speaker is an exercise in mastering Chinese syntax; like the computer program that generated the syntactical instructions, the English speaker still has no understanding of the meaning of Chinese. The Chinese Room argument is intended as a challenge to conclusions about the significance of passing the TURING TEST: A computer program that successfully simulated intelligent data (such as syntactical rules) would pass this test, but such a simulation is not the same as actual human intelligence and thought. [proposed by U.S. philosopher John R. Searle (1932–)]

**chin reflex** see JAW JERK.

**CHINS** acronym for CHILDREN IN NEED OF SUPERVISION.

**chipper** *n.* **1.** someone who smokes five or fewer cigarettes on an average of four days a week with no evidence

of withdrawal or addiction. **2.** someone who uses opiates occasionally without reaching the point of abuse or dependence.

**chiromancy (cheiromancy)** *n.* see PALMISTRY. —**chiromancer** *n.*

**chiropractic** *n.* an alternative health care system concerned with the relationship between vertebral alignment within the spine and disease processes. Treatment comprises noninvasive drug-free methods, primarily manipulations and adjustments to the body, theorized to restore proper nerve functioning and to promote health. See also COMPLEMENTARY AND ALTERNATIVE MEDICINE. —**chiropractor** *n.*

**chirosophy** *n.* see PALMISTRY. —**chirosopher** *n.*

**chi-square** (symbol:  $\chi^2$ ) *n.* a statistic that is the sum of the squared differences between the observed scores in a data set and the EXPECTED VALUE. That is, to obtain the chi-square one finds the difference between each observed score and the expected score, squares that difference, and divides by the expected score; finally, one adds the resulting values for each score in the set. The smaller the chi-square, the more likely it is that the model from which the expected score is obtained provides a legitimate representation of the phenomenon being measured.

**chi-square distribution ( $\chi^2$  distribution)** a distribution of the sums of independent squared differences between the observed scores in a data set and the expected score for the set. If a random sample is repeatedly drawn from a normal population and measured on some variable and the obtained scores transformed via STANDARDIZATION, multiplied by themselves, and then added, the result will be a chi-square distribution with DEGREES OF FREEDOM equal to the size of the samples drawn.

**chi-square test** any of various procedures that use a CHI-SQUARE DISTRIBUTION to evaluate how well a theory fits a set of observed data. Unless otherwise specified, this term usually refers to the **chi-square test for independence**, used to determine whether there is a relationship between two variables whose values are categories. For example, it may be used to test whether sex (male vs. female) is unrelated to having a household pet (yes vs. no). It compares observed data to the data that would be expected in each cell of a CONTINGENCY TABLE if the two variables were entirely independent. This discrepancy between observed and expected counts is then used to compute the CHI-SQUARE statistic. Also called **chi-square procedure**.

**chloral hydrate** a short-acting depressant of the central nervous system, first synthesized in 1832 and once widely used chiefly as a hypnotic. It is occasionally still used to induce sleep, but its use is limited by its potential toxicity. U.S. trade name: **Aquachloral**. See also KNOCKOUT DROPS.

**chlordiazepoxide** *n.* the first commercially available BENZODIAZEPINE anxiolytic. Developed in 1957 and in clinical use in the early 1960s, it became one of the most heavily prescribed medications ever developed. It is characterized by extensive metabolism in the liver and possesses a number of metabolic products, giving it a lengthy HALF-LIFE and a consequent long-acting anxiolytic effect. Its use in the management of anxiety and insomnia has been largely supplanted by benzodiazepines with less complicated metabolism and more predictable half-lives, but it remains in common use to protect against the effects of alcohol withdrawal. It is available in oral and injectable

form. Because of erratic absorption, intramuscular administration is not advised. U.S. trade name: **Librium**.

**chloride channel** see ION CHANNEL.

**chloropsia** *n.* see CHROMATOPSIA.

**chlorpromazine (CPZ)** *n.* the first synthesized ANTIPSYCHOTIC agent, introduced into clinical use in Europe in 1952 and in Canada and the United States in 1954. It was initially used to reduce presurgical anxiety and deepen conscious sedation during surgical procedures; its antipsychotic effects were discovered serendipitously. This low-potency PHENOTHIAZINE provided a degree of previously unavailable behavioral control and management of positive psychotic symptoms and ushered in the modern era of psychopharmacological treatment. However, although effective in managing the acute symptoms of schizophrenia, acute mania, and other psychoses, chlorpromazine caused a number of unwanted adverse effects, including neuromuscular rigidity and other EXTRAPYRAMIDAL SYMPTOMS, sedation, ORTHOSTATIC HYPOTENSION, cognitive slowing, and long-term association with TARDIVE DYSKINESIA. Although chlorpromazine has been largely supplanted by newer antipsychotic agents, it is still used as a referent for dose equivalency of other antipsychotics. It has also been used in lower doses to treat nausea, vomiting, and intractable hiccups. U.S. trade name: **Thorazine**.

**chlorprothixene** *n.* a low-potency antipsychotic of the THIOXANTHENE class, similar in its effects to other thioxanthenes. U.S. trade names: **Taractan**; **Taractin**.

**choice axiom** a mathematical model of decision making that assumes, given several alternatives from which to choose, the probability that a particular alternative will be picked is independent of the sequence of decisions. [developed in 1959 by U.S. mathematician and psychologist R. Duncan Luce (1925–2012)]

**choice behavior** the selection of one of many available options or behavioral alternatives.

**Choice Dilemma Questionnaire (CDQ)** a research instrument used in studies of the RISKY SHIFT to measure an individual's willingness to make risky or cautious decisions. Respondents are presented with a series of scenarios involving a course of action that might or might not yield financial, interpersonal, or educational benefits; they then indicate what the odds of success would have to be before they would recommend the course of action. [originally developed by U.S. social psychologists Nathan Kogan (1926–2013) and Michael A. Wallach (1933– )]

**choice reaction time** the total time that elapses between the presentation of a stimulus and the occurrence of a response in a task that requires a participant to make one of several different responses depending on which one of several different stimuli is presented. The time actually required to decide on a response can be calculated using DONDERS'S METHOD. Also called **complex reaction time**; **compound reaction time**. Compare SIMPLE REACTION TIME.

**choice shift** any change in an individual's choices or decisions that occurs as a result of group discussion, as measured by comparing his or her prediscussion and postdiscussion responses. In many cases, a RISKY SHIFT is seen within the group as a whole. See also CAUTIOUS SHIFT.

**choice stimuli** in REACTION-TIME tasks, the array of possible stimuli that may occur in a particular trial. Each stim-

ulus or item in the array is mapped to a different response (e.g., a different key to be pressed). Participants must decide which response to make to a particular stimulus.

**choked disk** see PAPILLEDEMA.

**chokes** *n.* see DECOMPRESSION SICKNESS.

**choking under pressure** a paradoxical effect in which the demands of a situation that calls for good performance—such as a school test, sports competition, or job interview—cause an individual to perform poorly relative to his or her capabilities. *Pressure* denotes the individual's desire to perform well; *choking* refers to the actual decrement in performance that results.

**cholecystokinin (CCK)** *n.* a PEPTIDE HORMONE that is released from the duodenum and may be involved in the satiation of hunger. It also serves as a NEUROTRANSMITTER at some locations in the nervous system.

**choleric type** a type of temperament characterized by irritability and quick temper, as described by GALEN. See HUMORAL THEORY.

**cholesterol** *n.* a steroid derivative abundant in animal tissues, found especially in foods rich in animal fats. Cholesterol is a constituent of plasma membranes, the precursor of other steroids (e.g., the sex hormones), and a component of plasma lipoproteins, especially low-density lipoproteins (LDLs), which are believed to play an important role in forming atherosclerotic plaques (see ATHEROSCLEROSIS).

**choline** *n.* a BIOGENIC AMINE, often classed as a B vitamin, that is a constituent of many important compounds, such as ACETYLCHOLINE and lecithin (a component of plasma membranes).

**choline acetylase** an enzyme that is involved in the production of the neurotransmitter ACETYLCHOLINE from CHOLINE and acetyl coenzyme A. Also called **choline acetyltransferase**.

**cholinergic** *adj.* responding to, releasing, or otherwise involving ACETYLCHOLINE. For example, a **cholinergic neuron** is one that employs acetylcholine as a neurotransmitter.

**cholinergic drug** any pharmacological agent that stimulates activity in the PARASYMPATHETIC NERVOUS SYSTEM because it potentiates the activity of ACETYLCHOLINE or has effects similar to this neurotransmitter. Cholinergic drugs include such alkaloids as PHYSOSTIGMINE and PILOCARPINE; BETHANECHOL; and anticholinesterases (CHOLINESTERASE inhibitors; e.g., EDROPHONIUM, NEOSTIGMINE, and PYRIDOSTIGMINE). They are used for such purposes as treating myasthenia gravis, glaucoma, and urinary retention. Also called **parasympathetic drug**; **parasympathomimetic drug**.

**cholinergic receptor** another name for an ACETYLCHOLINE RECEPTOR. Also called **cholinoceptor**.

**cholinergic synapse** a SYNAPSE that uses ACETYLCHOLINE as a neurotransmitter. Cholinergic synapses are found in postganglionic parasympathetic fibers, autonomic preganglionic fibers, preganglionic fibers to the adrenal medulla, somatic motor nerves to the skeletal muscles, and fibers to the sweat glands.

**cholinergic system** the part of the AUTONOMIC NERVOUS SYSTEM that reacts to the neurotransmitter ACETYLCHOLINE and to cholinergic drugs. Activities of this system

are inhibited by ANTICHOLINERGIC DRUGS, such as atropine. Compare ADRENERGIC SYSTEM.

**cholinesterase (ChE)** *n.* an enzyme that splits ACETYLCHOLINE into choline and acetic acid, thus inactivating the neurotransmitter after its release at a synaptic junction. Cholinesterase occurs in two forms: **acetylcholinesterase (AChE)**, found in nerve tissue and red blood cells; and **butyrylcholinesterase (BuChE, or pseudocholinesterase [PChE])**, found in blood plasma and other tissues. Drugs that block the ability of this enzyme to degrade acetylcholine are called **cholinesterase inhibitors (ChEIs, or acetylcholinesterase inhibitors [AChEIs] or anticholinesterases)**. Some ChEIs are used clinically to slow the progression of dementia in Alzheimer's disease. See COGNITIVE ENHANCER.

**chondroectodermal dysplasia** see ELLIS-VAN CREVELD SYNDROME.

**chorda tympani** see GREATER SUPERFICIAL PETROSAL NERVE.

**chord keyboard** a keyboard with a limited number of keys that can be used to enter a wide range of alphanumeric information by pressing various keys in combination. Some can support one-handed entry. See also DVORAK KEYBOARD.

**chorea** *n.* irregular and involuntary jerky movements of the limbs and facial muscles. Chorea is associated with various disorders, including HUNTINGTON'S DISEASE and **Sydenham's chorea** (formerly known as **Saint Vitus's dance**), which occurs as a complication of a streptococcal infection (e.g., rheumatic fever). —**choreal** *adj.* —**choreic** *adj.*

**choreiform** *adj.* involving involuntary movement that resembles CHOREA. Also called **choreoid**.

**choreoathetosis** *n.* chorea accompanied by ATHETOSIS (involuntary writhing) of the face, tongue, hands, and feet. The condition is characteristic of HUNTINGTON'S DISEASE.

**choreoid** *adj.* see CHOREIFORM.

**choreomania** *n.* an uncontrollable urge to dance, especially in a frenzied, convulsive manner. Major outbreaks of choreomania occurred in Europe during the Middle Ages. Also called **dancing madness; dancing mania**.

**chorion** *n.* the outermost of the membranes that surround and protect the developing embryo. In most mammals (including humans), a section of it forms the embryonic part of the PLACENTA. —**chorionic** *adj.*

**chorionic villus sampling (CVS)** a method of diagnosing diseases and genetic and chromosomal abnormalities in a fetus. Samples of cells of the chorionic villi, the microscopic projections in the protective membrane surrounding the fetus, are obtained for analysis of bacteria, metabolites, or DNA. Unlike AMNIOCENTESIS, this procedure can be carried out in the first trimester of pregnancy. Compare PERCUTANEOUS UMBILICAL CORD BLOOD SAMPLING.

**choroid layer** the vascular pigmented layer of tissue that covers the back of the eye and is located between the retina and the sclera. In the anterior portion of the eye it is continuous with the pigmented portion of the CILIARY BODY. The pigment in the choroid layer absorbs stray light; the blood vessels include the **choriocapillaris**, a plexus of capillaries that provides oxygen and sustenance to the photoreceptors of the retina. Also called **choroid; choroid coat**.

**choroid plexus** a highly vascularized portion of the lining of the cerebral VENTRICLES that is responsible for the production of CEREBROSPINAL FLUID.

**Chotzen's syndrome** a genetic condition characterized by an abnormally shaped head due to premature closing of one or more of the cranial sutures, usually involving the coronal suture (see CRANIOSYNOSTOSIS SYNDROME), and by webbing of the fingers and toes. Delayed development and learning difficulties can be associated with the disorder, but affected children often have average intelligence. Most cases are caused by mutations in the *TWIST1* gene. In a small number of cases, when the cause is a chromosomal deletion instead of a mutation within the *TWIST1* gene, affected children are much more likely to have intellectual disability, developmental delay, and learning difficulties. It is thought that a loss of other genes on chromosome 7 may be responsible for these additional features. Also called **acrocephalosyndactyly Type III; Saethre-Chotzen syndrome**. [F. Chotzen, German physician]

**Christian Science** a Protestant Christian religious denomination founded in 1879 by U.S. spiritual leader Mary Baker Eddy (1821–1910). It is based on the idea that mind has power over matter, enabling MENTAL HEALING, particularly through prayer, of both spiritual ill health (i.e., sin) and physical illness and disease. The reliance of adherents on their beliefs has sparked many controversies regarding refusal of medical and mental health care.

**chrom-** *combining form* see CHROMO-.

**chroma-brightness coefficient** the relationship between saturation and intensity in the MUNSELL COLOR SYSTEM.

**chromatic** *adj.* **1.** in vision, possessing both HUE and SATURATION. Thus, a **chromatic color** is any color other than black, white, or gray. Compare ACHROMATIC. **2.** in music, pertaining to an octave scale in which each note differs from the preceding note by one semitone. Compare DIATONIC.

**chromatic aberration** a defect in the image formed by a simple glass lens resulting from the fact that light of short wavelength is refracted to a greater extent than light of long wavelength. It causes different colors to be focused at different distances, so that the image has colored fringes. Chromatic aberration can be corrected by the use of an ACHROMATIC lens. Also called **chromatic error**.

**chromatic adaptation** decreased sensitivity to a particular color as a result of prolonged exposure to a colored stimulus. Also called **color adaptation**.

**chromatic audition** a type of SYNESTHESIA in which color sensations are experienced when sounds are heard. Also called **phonopsia**. See CHROMESTHESIA.

**chromaticity** *n.* a color-stimulus quality determined by the purity and wavelength of the stimulus, independent of its LUMINANCE. Chromaticity and luminance together provide a description of a colored stimulus that is independent of an observer's perceptions. Also called **chromaticness**.

**chromatics** *n.* in optics, the study of color and the sensation of color.

**chromatid** *n.* in cell division, one of the two duplicate, filamentlike subunits, joined at the CENTROMERE, that make up a chromosome and then separate, each going to a different pole of the dividing cell to become a new chromosome in one of the daughter cells.

**chromatin** *n.* a substance present in chromosomes and cell nuclei that consists of nucleic acids (mainly DNA) combined with protein (i.e., nucleoprotein). It readily stains with certain identifying dyes.

**chromatin negative** denoting the absence of SEX CHROMATIN in the nucleus of a human somatic cell; this absence identifies the cell as being from a male.

**chromatin positive** denoting the presence of SEX CHROMATIN in a human somatic cell; this presence identifies the cell as being from a female.

**chromatopsia** *n.* an aberration in color vision in which there is excessive visual sensitivity to one color, such that objects appear tinged with that color. Chromatopsia is caused by drugs, intense stimulation, or SNOW BLINDNESS, and it can occur after eye hemorrhages, cataract extraction, electric shock, or optic atrophy. There are several forms: **erythropsia** (red vision), **chloropsia** (green vision), **xanthopsia** (yellow vision), and **cyanopsia** (blue vision). Also called **chromopsia**.

**chromesthesia** *n.* a type of SYNESTHESIA in which perception of nonvisual stimuli (e.g., sounds, tastes, odors) is accompanied by color sensations. Strictly speaking, chromesthesia is not a conscious juxtaposition of two different sense perceptions: The two perceptions coincide as responses to the same stimulus (e.g., the musical note G may be consistently experienced as blue). Also called **pseudochromesthesia**.

**chronic myopia** see MYOPIA.

**chromo-** (**chrom-**; **chromato-**) *combining form* color.

**chromopsia** *n.* see CHROMATOPSIA.

**chromosomal aberration** **1.** an abnormal change in the structure of a chromosome. **2.** a congenital defect that can be attributed to an abnormal chromosome. See AUTOSOMAL ABERRATION; SEX-CHROMOSOMAL ABERRATION.

**chromosomal map** the appearance of a stained chromosome when observed under a microscope. Visually distinct light and dark bands give each chromosome a unique pattern, which enables KARVOTYPE testing to be carried out.

**chromosomal mutation** see MUTATION.

**chromosome** *n.* a strand or filament composed of nucleic acid (mainly DNA in humans) and proteins (see CHROMATIN) that carries the genetic, or hereditary, traits of an individual. Located in the cell nucleus, chromosomes are visible, through a microscope, only during cell division. The normal human complement of chromosomes totals 46, or 23 pairs (44 AUTOSOMES and 2 SEX CHROMOSOMES), which are believed to contain a total of 20,000 to 25,000 genes (see GENOME). Each parent contributes one chromosome to each pair, so a child receives half its chromosomes from its mother and half from its father. —**chromosomal** *adj.*

**chromosome 4, deletion of short arm** a chromosomal disorder involving absence of a portion of chromosome 4, resulting in MICROCEPHALY, delayed growth, visual defects, intellectual disability, and seizures. The size of the deleted genetic material varies, and studies suggest that larger deletions tend to result in more severe intellectual disability and physical abnormalities than do smaller deletions. Although sometimes the disorder is passed on from an unaffected parent, most cases are not inherited. Also called **Wolf-Hirschhorn syndrome**.

**chromosome 5, deletion of short arm** see CRI DU CHAT SYNDROME.

**chromosome 18, deletion of long arm** a chromosomal disorder involving absence of a portion of chromosome 18 and resulting in MICROCEPHALY, short stature, hypotonia, hearing impairment, foot deformities, and intellectual disability. Also called **distal 18q-**.

**chromosome abnormality** an abnormality that is evidenced by either an abnormal number of chromosomes or some alteration in the structure of one or more chromosomes.

**chromosome disorder** any disorder caused by a defect in the structure or number of one or more chromosomes. Such disorders can result from AUTOSOMAL ABERRATIONS or SEX-CHROMOSOMAL ABERRATIONS.

**chromosome mosaicism** a condition resulting from an error in the distribution of chromosomes between daughter cells during an early embryonic cell division, producing two and sometimes three populations of cells with different chromosome numbers in the same individual. Mosaicism involving the sex chromosomes is not uncommon (see HERMAPHRODITISM).

**chromosome number** the number of chromosomes present in the tissue cells of an individual. All members of a species normally have the same number of chromosomes. The normal number for humans is 46. In most mammals, the chromosome number of a gamete, or reproductive cell, is half the somatic chromosome number; for example, in humans, it is 23. See DELETION.

**chromotherapy** *n.* see PHOTOBIOLOGY.

**chron-** *combining form* see CHRONO-.

**chronaxie** (**chronaxy**) *n.* an index of excitability of a nerve or muscle, measured as how long it takes an electrical current of twice the THRESHOLD intensity to elicit a nerve impulse or a muscular contraction. Also called **chronaxia**.

**chronesthesia** *n.* a hypothetical ability or capacity of the human brain or mind, acquired through evolution, that allows humans to be constantly aware of the past and the future. The key feature of this “mental time travel” is to enable people to anticipate the future—that is, to learn what to avoid and how to behave in the future—by recalling past events. For example, chronesthesia enables people over time to “distinguish friends from foes” in social relationships and to develop tools that work well (and discard those that do not) in occupational activities. [introduced by Endel TULVING]

**chronic** *adj.* denoting conditions or symptoms that persist or progress over a long period of time and are resistant to cure. Compare ACUTE.

**chronic adjustment disorder** see ADJUSTMENT DISORDER.

**chronic alcoholism** habitual, long-term dependence on alcohol (see ALCOHOL DEPENDENCE).

**chronically accessible constructs** mental contents (e.g., ideas or categories) that are frequently used and therefore come to mind particularly readily.

**chronically suicidal** describing an individual with a history of multiple suicide attempts or episodes that include serious thoughts about or plans for committing sui-

cide. Such a history often occurs in individuals with BORDERLINE PERSONALITY DISORDER.

**chronic anxiety** a persistent, pervasive state of apprehension that may be associated with aspects of a number of anxiety disorders. These include uncontrollable worries in GENERALIZED ANXIETY DISORDER, fear of a panic attack in PANIC DISORDER, and obsessions in OBSESSIVE-COMPULSIVE DISORDER.

**chronic brain disorder** any disorder caused by or associated with brain damage and producing permanent impairment in one or more areas of brain function (cognitive, motor, sensory, and emotional). Such disorders may arise from trauma, stroke, infection, degenerative diseases, or many other conditions. In older literature, these disorders are also referred to as **chronic brain syndromes**.

**chronic care** long-term care and treatment of patients with long-standing health problems.

**chronic fatigue syndrome (CFS)** an illness characterized by often disabling fatigue, decrease in physical activity, and flu-like symptoms, such as muscle weakness, swelling of the lymph nodes, headache, sore throat, and sometimes depression. The condition is typically not diagnosed until symptoms have been ongoing for several months, and it can last for years. The cause is unknown, although certain viral infections can set off the illness.

**chronic illness** illness that persists for a long period. Chronic illnesses include many major diseases and conditions, such as heart disease, cancer, diabetes, and arthritis. Disease management is important when dealing with chronic illness; this includes ensuring adherence to treatment and maintaining quality of life.

**chronicity** *n.* **1.** the state of being CHRONIC. **2.** see SOCIAL BREAKDOWN SYNDROME.

**chronic mood disorder** see MOOD DISORDER.

**chronic motor or vocal tic disorder** in *DSM-IV-TR*, a TIC DISORDER characterized by motor or vocal tics (but not both) for a period of more than 1 year, during which any period without tics lasts for no more than 3 months. The disorder has an onset before the age of 18. It is identified as **persistent (chronic) motor or vocal tic disorder** in *DSM-5*. Compare TOURETTE'S DISORDER.

**chronic myofascial pain (CMP)** a MUSCULOSKELETAL DISORDER characterized by pain and stiffness that is restricted to certain locations on the body, called *trigger points*. It is nonprogressive, nondegenerative, and noninflammatory. Chronic myofascial pain is sometimes referred to as **myofascial pain syndrome (MPS)**, especially in older literature.

**chronic obstructive pulmonary disease (COPD)** any of a group of lung diseases, most commonly chronic bronchitis and emphysema, that are characterized by limited airflow with varying degrees of lung-tissue damage and alveolar (air-sac) enlargement. Marked by coughing, wheezing, and shortness of breath, COPD is caused by cigarette smoking, exposure to other irritants and pollutants, lung infections, or genetic factors. Individuals with COPD frequently experience depression, anxiety, and problems with sexual function; they also sometimes have cognitive and neuropsychological difficulties that may be associated with chronic deficiencies of oxygen to the brain. In addition to medical treatments, behavioral interventions (e.g., those that promote smoking cessation and exercise), psychotherapy, and treatment with psychoactive drugs can

benefit patients with this condition. Also called **chronic obstructive lung disease**.

**chronic pain** pain that continues to occur despite all medical and pharmacological efforts at treatment. In many cases, the pain is initially caused by tissue damage or disease. The continuation of the pain is often the result of pathological changes in the central nervous system.

**chronic posttraumatic stress disorder** a form of POSTTRAUMATIC STRESS DISORDER that is diagnosed when the symptoms persist over a period of more than 3 months.

**chronic preparation** the process by which a research animal undergoes an experimental procedure, often surgical in nature, and is then allowed to recover so that it can be observed over an extended period of time. Compare ACUTE PREPARATION.

**chronic psychosis** **1.** a delusional or hallucinatory state that persists indefinitely. **2.** a former name for CHRONIC SCHIZOPHRENIA. **3.** historically, any irreversible disorder of cognition, mood or affect, and behavior.

**chronic schizophrenia** schizophrenia in which the symptoms persist for an extended period. It is contrasted with ACUTE SCHIZOPHRENIC EPISODES, in which the symptoms are more transient.

**chronic stress** the physiological or psychological response to a prolonged internal or external stressful event (i.e., a STRESSOR). The stressor need not remain physically present to have its effects; recollections of it can substitute for its presence and sustain chronic stress.

**chronic traumatic encephalopathy** see DEMENTIA PUGILISTICA.

**chrono-** (**chron-**) *combining form* time.

**chronobiology** *n.* the branch of biology concerned with BIOLOGICAL RHYTHMS, such as the sleep-wake cycle.

**chronograph** *n.* an instrument that records time sequences graphically. —**chronographic** *adj.*

**chronological age (CA)** the amount of time elapsed since an individual's birth, typically expressed in terms of months and years. Also called **calendar age**. Compare BIOLOGICAL AGE.

**chronometer** *n.* a precise clock that runs continuously and is designed to maintain its accuracy under all conditions of temperature, pressure, and the like.

**chronometric analysis** a method for studying a mental process that involves varying stimulus input conditions and measuring participants' REACTION TIMES to those stimuli. The relations between the stimulus variables and reaction times are then used to make inferences about the underlying mental processes. Also called **mental chronometry**. See DONDERS'S METHOD.

**chronometry** *n.* the measurement of time. —**chronometric** *adj.*

**chronopsychology** *n.* the scientific study of the way in which changes to daily SLEEP-WAKE CYCLES can affect the ability to function.

**chronosystem** *n.* in ECOLOGICAL SYSTEMS THEORY, changes and continuities occurring over time that influence an individual's development. These influences include normative life transitions (e.g., school entry, marriage, retirement), nonnormative life transitions (e.g., divorce, winning the lottery, relocation), and the cumulative effects of

the entire sequence of transitions over the life course. Compare EXOSYSTEM; MESOSYSTEM; MACROSYSTEM. [introduced by Urie BRONFENBRENNER]

**chronotaraxis** *n.* a condition of time confusion in which the individual tends to underestimate or overestimate the passage of time or is confused about the time of day or day of the week.

**chronotherapy** *n.* a treatment for CIRCADIAN RHYTHM SLEEP DISORDERS that systematically moves bedtime progressively later by intervals (phase delays) until it approaches the desired bedtime.

**chronotopic constraints** the limitations imposed by the development of the brain on the timing of maturational events, such as the acquisition of language-processing ability. See also ARCHITECTURAL CONSTRAINTS; REPRESENTATIONAL CONSTRAINTS.

**chunking** *n.* 1. the process by which the mind divides large pieces of information into smaller units (**chunks**) that are easier to retain in SHORT-TERM MEMORY. As a result of this RECODING, one item in memory (e.g., a keyword or key idea) can stand for multiple other items (e.g., a short list of associated points). The capacity of short-term memory is believed to be constant for the number of individual units it can store (see SEVEN PLUS OR MINUS TWO), but the units themselves can range from simple chunks (e.g., individual letters or numbers) to complex chunks (e.g., words or phrases). The exact number of chunks remembered depends on the size of each chunk or the subunits contained within each chunk. 2. the associated principle that effective communication between humans depends on sorting information into units that do not exceed the mind's capacity to chunk them (the **chunking limit**). This has implications for the content and layout of written documents, diagrams and visual aids, websites, and so on. For example, any list of more than nine bullet points should normally be subdivided into two or more shorter lists. [coined by George Armitage MILLER in 1956]

**CI** abbreviation for CONFIDENCE INTERVAL.

**cicatrization** *n.* 1. the formation of a scar, or **cicatrix**, after a wound has healed. 2. the deliberate scarring of some part of the body for cosmetic or religious purposes. —**cicatrize** *vb.*

**cichlid** *n.* a tropical spiny-finned freshwater fish that is commonly the subject of behavioral studies.

**-cide** *suffix* killer or killing (e.g., INFANTICIDE).

**CIE XYZ color space** see XYZ SYSTEM.

**CIL** abbreviation for Center for Independent Living. See INDEPENDENT LIVING.

**cilia** *pl. n.* see CILIUM.

**ciliary body** a part of the eye located behind the iris and consisting of the CILIARY PROCESSES and the CILIARY MUSCLES.

**ciliary muscle** smooth muscle in the CILIARY BODY of the eye that changes the shape of the lens to bring objects into focus on the retina. The ciliary muscle regulates the tension of the ZONULES, causing the lens to flatten (which lessens the power of the lens and allows focus of distant objects) or become more curved (which increases the power of the lens and allows focus of near objects). The action of the ciliary muscle is a large component of ACCOMMODATION.

**ciliary processes** the extensions of the CILIARY BODY that project into the posterior chamber of the eye. The ciliary processes are covered by epithelial cells that produce the AQUEOUS HUMOR and are connected by the ZONULES to the capsule of the lens.

**cilium** *n. (pl. cilia)* 1. an eyelash. 2. a hairlike extension of a cell, usually occurring in tufts or tracts, as in the stereocilia of HAIR CELLS in the cochlea of the inner ear. —**ciliary** *adj.*

**Cinderella syndrome** behavior in childhood based on the child's belief of being a "Cinderella," or a victim of parental rejection, neglect, or abuse.

**cingulate cortex** a long strip of CEREBRAL CORTEX on the medial surface of each cerebral hemisphere in the prefrontal lobe. The cingulate cortex arches over and generally outlines the location of the CORPUS CALLOSUM, from which it is separated by the CALLOSAL SULCUS. It is a component of the LIMBIC SYSTEM and has a role in emotion and memory; it also has a role in motor planning. Also called **callosal gyrus**; **cingulate gyrus**; **gyrus cinguli**. See also ANTERIOR CINGULATE CORTEX; POSTERIOR CINGULATE CORTEX.

**cingulate sulcus** the fissure that separates the CINGULATE CORTEX from the superior frontal gyrus on the medial surface of each cerebral hemisphere.

**cingulotomy** *n.* a procedure used in the treatment of chronic pain in which electrodes are used to destroy portions of the CINGULUM BUNDLE. It is also, albeit rarely, used in the treatment of some chronic mental disorders (e.g., OBSESSIVE-COMPULSIVE DISORDER) that have not responded to other, nonsurgical forms of treatment. Also called **cingulotomy**.

**cingulum bundle** a longitudinal tract of nerve fibers, lying beneath the CINGULATE CORTEX, that connects the frontal lobe with the PARAHIPPOCAMPAL GYRUS and adjacent regions in the temporal lobe.

**CIPS** abbreviation for Clance Impostor Phenomenon Scale. See IMPOSTOR PHENOMENON.

**circadian dysrhythmia** a disruption of the normal cycles of wakefulness and sleep. See CIRCADIAN RHYTHM SLEEP DISORDER.

**circadian oscillator** a neural circuit with an output that repeats about once per day. A circadian oscillator is located in the SUPRACHIASMATIC NUCLEUS of the hypothalamus and is thought to be important in sleep-wake cycles.

**circadian rhythm** any periodic variation in physiological or behavioral activity that repeats at approximately 24-hour intervals, such as the SLEEP-WAKE CYCLE. Also called **diurnal rhythm**. Compare INFRADIAN RHYTHM; ULTRADIAN RHYTHM. See also BIOLOGICAL RHYTHM.

**circadian rhythm sleep disorder** in *DSM-IV-TR*, a sleep disorder that is due to a mismatch between the sleep-wake schedule required by a person's environment or occupational circumstances (e.g., shift work) and his or her circadian sleep-wake pattern, resulting in excessive sleepiness or insomnia. This disorder was formerly called **sleep-wake schedule disorder**. *DSM-5* calls it **circadian rhythm sleep-wake disorder**. See DYSSOMNIA. See also DISORDERS OF THE SLEEP-WAKE CYCLE SCHEDULE.

**circannual rhythm** a BIOLOGICAL RHYTHM of behavior, growth, or some other physiological variable that recurs yearly.

**Circle of Security** a 20-week ATTACHMENT-BASED INTERVENTION that aims to reduce the long-term risks associated with INSECURE ATTACHMENT in children. It is individualized for a particular caregiver–child dyad on the basis of the child’s insecure attachment classification (e.g., anxious-resistant) and the caregiver’s behavior and INTERNAL WORKING MODEL OF ATTACHMENT. It is delivered in a systematic week-by-week, video-based group model and consists of both educational and therapeutic components. [developed by U.S. developmental psychologist Robert S. Marvin (1944– )]

**circle of support** a group of people who provide support for an individual. For a person with a developmental disability, the circle often includes family members, friends, acquaintances, coworkers, and sometimes service providers or coordinators, who meet on a regular basis and help the individual accomplish personal goals. These goals are selected based on extensive and recurrent review of the person’s past and current preferences and interests; they are addressed one stage at a time.

**circle of Willis** a ring of blood vessels on the underside of the brain, formed by links between branches of several major arteries—the BASILAR ARTERY, INTERNAL CAROTID ARTERY, ANTERIOR CEREBRAL ARTERY, ANTERIOR COMMUNICATING ARTERY, MIDDLE CEREBRAL ARTERY, POSTERIOR CEREBRAL ARTERY, and POSTERIOR COMMUNICATING ARTERY. By providing multiple pathways for blood circulation, this arrangement ensures the continuous flow of oxygenated blood to the brain in the event a supplying artery becomes blocked or constricted as a result of an injury, disease, or other condition. Also called **arterial circle**. [Thomas Willis (1621–1675), English anatomist and physician who was the first to illustrate this area definitively and provide a description of its function]

**circuit resistance training** a series of different exercises set out in a specific order, with a specific time or number of repetitions for each exercise. The type and order of exercises will be set according to their use as rehabilitation—health-related exercise for individuals with spinal cord injuries, diabetes, obesity, and other conditions—or as fitness training for athletes.

**circular behavior** any action that stimulates a similar action in others, such as yawning or laughing. Also called **circular response**. See also BEHAVIORAL CONTAGION.

**circular causality** **1.** a sequence of causes and effects that leads back to the original cause and either alters or confirms it, thus producing a new sequence, as in a FEED-BACK loop. **2.** a form of CIRCULAR REASONING in which the cause of some event is held to exist in or be implied by the event itself.

**circular questioning** a technique used in some methods of family therapy to yield information about the dynamics and relationships in a family. For example, one family member may be asked to answer a question about who in the family is most depressed; subsequent family members each respond to the same question. This method of questioning everyone in the “circle” is intended to elicit the various perspectives within the group.

**circular reaction** **1.** any action that generates a response that provides the stimulation for repetition of the action, often such that responses increase in intensity and duration. An example is the contraction of a muscle that sends a nerve impulse toward the brain or spinal cord, which in turn sends a nerve impulse back to the muscle to

maintain the contraction. Also called **circular reflex**. **2.** in PIAGETIAN THEORY, repetitive behavior observed in children during the SENSORIMOTOR STAGE, characterized as primary, secondary, or tertiary circular reactions. The primary phase involves ineffective repetitive behaviors; the secondary phase involves repetition of actions that are followed by reinforcement, typically without understanding causation; and the tertiary phase involves repetitive object manipulation, typically with slight variations among subsequent behaviors. **3.** in the analysis of crowds and collectives, repetitive behavior that produces BEHAVIORAL CONTAGION as individuals imitate others’ actions without considering the meaning or consequences of those actions.

**circular reasoning** a type of informal FALLACY in which a conclusion is reached that is not materially different from something that was assumed as a premise of the argument. In other words, the argument assumes what it is supposed to prove. Circular reasoning is sometimes difficult to detect because the premise and conclusion are not articulated in precisely the same terms, obscuring the fact that they are really the same proposition.

**circulating levels** see BLOOD LEVELS.

**circulatory system** see CARDIOVASCULAR SYSTEM.

**circumcision** *n.* the surgical removal of the foreskin of the penis, typically for religious, cultural, or medical reasons. Circumcision is often performed in infancy but may be performed at any age.

**circumlocution** *n.* **1.** a mode of speaking characterized by difficulty or inability in finding the right words to identify or explain an object that has been perceived and recognized. It involves the use of a variety of words or phrases that indirectly communicate the individual’s meaning. Circumlocution can be a manifestation of ANOMIC APHASIA caused by damage to the left posterior temporal lobe of the brain, but in some cases it is an indication of disorganized thought processes, as in schizophrenia. See CIRCUMSTANTIALITY. **2.** a style of speaking used consciously by healthy individuals to convey meaning indirectly, so that the meaning is inferred by the listener.

**circumplex** *n.* a circular depiction of the similarities among multiple variables. For example, a researcher studying emotions might focus on certain core affects and create a circumplex representation of them, with variables having opposite values or characteristics (i.e., tranquility–frenzy; sadness–enthusiasm; sluggishness–excitement) displayed at opposite points on the circumplex, whereas variables having highly similar characteristics are displayed adjacent to one another on the circumplex. In other words, the similarity (and correlation) between elements declines as the distance between them on the circle increases.

**circumscribed amnesia** see LOCALIZED AMNESIA.

**circumscribed belief** a narrowly defined delusional belief that is internally consistent and highly resistant to disproof and appears to function separately from other beliefs held by the same person.

**circumstantial bilingualism** see FOLK BILINGUALISM.

**circumstantial evidence** evidence from which the existence of a fact may be inferred but that does not constitute direct proof of that fact.

**circumstantiality** *n.* circuitous, indirect speech in which the individual digresses to give unnecessary and



often irrelevant details before arriving at the main point. An extreme form, arising from disorganized associative processes, may occur in schizophrenia, obsessional disorders, and certain types of dementia. Circumstantiality differs from TANGENTIALITY in that the main point is never lost but rather accompanied by a large amount of nonessential information.

**circumstriate cortex** see PRESTRIATE CORTEX.

**circumthanatology** *n.* the study of NEAR-DEATH EXPERIENCES.

**circumvallate papillae** swellings on the posterior portion (back) of the tongue, each surrounded by a trench. In humans, there are 7 to 11 circumvallate papillae, arranged in a chevron; each PAPILLA contains about 250 TASTE BUDS, lining the trench and oriented horizontally. Receptors in circumvallate papillae are particularly sensitive to bitter chemicals.

**circumventricular organs** four small structures located along the third and fourth ventricles at the base of the brain, outside the BLOOD-BRAIN BARRIER, that are believed to influence body fluid HOMEOSTASIS, thirst, vomiting, and other physiological functions. Also called **circumventricular system**. See also AREA POSTREMA; ORGANUM VASculosum OF THE LAMINA TERMINALIS; SUBCOMMISSURAL ORGAN; SUBFORNICAL ORGAN.

**cirrhosis** *n.* a result of chronic liver disease marked by widespread formation of fibrous tissue and loss of normal liver function. In most cases, it is a consequence of alcohol abuse, although it may also be due to congenital defects involving metabolic deficiencies, exposure to toxic chemicals, or infections (e.g., hepatitis). —**cirrhotic** *adj.*

**CISD** abbreviation for CRITICAL-INCIDENT STRESS DEBRIEFING.

**cisgender** *adj.* having or relating to a GENDER IDENTITY that corresponds to the culturally determined gender roles for one's birth sex (i.e., the biological sex one was born with). A **cisgender man** or **cisgender woman** is thus one whose internal gender identity matches, and presents itself in accordance with, the externally determined cultural expectations of the behavior and roles considered appropriate for one's sex as male or female. Also called **cisgendered**. Compare TRANSGENDER. —**cisgenderism** *n.*

**ciassa** *n.* a craving for unusual foods or nonnutritive substances while pregnant. See also PICA.

**cisterna** *n.* (*pl.* **cisternae**) **1.** in anatomy, an enlarged space, such as the CISTERNA MAGNA in the brain. **2.** in cell biology, a flattened membranous sac within the GOLGI APPARATUS of a cell. —**cisternal** *adj.*

**cisterna magna** an enlarged space between the lower surface of the CEREBELLUM and the dorsal surface of the MEDULLA OBLONGATA, which serves as a reservoir of CEREBROSPINAL FLUID. Also called **cisterna cerebellomedullaris**.

**cistern puncture** see SUBOCCIPITAL PUNCTURE.

**CIT** abbreviation for CRITICAL-INCIDENT TECHNIQUE.

**citalopram** *n.* an antidepressant of the SSRI class. It exerts its action by blocking the presynaptic serotonin TRANSPORTER, preventing reabsorption of serotonin into the presynaptic neuron and thereby increasing levels of available serotonin in the SYNAPTIC CLEFT without increas-

ing overall levels of serotonin in the brain. U.S. trade name: **Celexa**.

**citation analysis** a form of research that examines the history, frequency, and distribution of citations of particular writers or particular books, articles, or other sources. It now mostly involves the automated search of online or electronic databases.

**citizen** *n.* one who is a formal member of a particular political community, such as a country or state, and is therefore entitled to full CIVIL RIGHTS as defined, guaranteed, and protected by that political entity. —**citizenship** *n.*

**cittosis** *n.* an abnormal desire for unusual foods or non-nutritive substances. See CISSA; PICA.

**civil commitment** a legal procedure that permits a person who is not charged with criminal conduct to be certified as mentally ill and to be institutionalized involuntarily.

**civil disobedience** public, nonviolent opposition or protest, usually on the grounds of conscience, to a government or its policies that takes the form of refusing to obey certain laws or to pay taxes. See also PASSIVE RESISTANCE.

**civil emergency** a disastrous event, either natural or caused by human activities, that threatens civilian populations. Such emergencies often require the cooperative effort of both civilian and military authorities to provide civil defense and crisis and disaster management.

**Civilian Health and Medical Program of the Uniformed Services (CHAMPUS)** the medical insurer that since 1967 has provided and paid for health care to U.S. military retirees and families and surviving family members of deceased military sponsors. Many new benefits have been added since the program was first established. The current program is called **TRICARE**.

**civilization** *n.* **1.** a highly developed society, advanced in such areas as arts, sciences, technology, law, religion, and moral and social values. **2.** human society as a whole in its present highly advanced state of cultural, intellectual, and technical development. **3.** the process of attaining this level of development. —**civilized** *adj.*

**civil rights** the rights of personal liberty and equality guaranteed to citizens by law. Also called **civil liberties**.

**civil rights movement** any collective effort to gain political or social rights denied by government, usually by such means as demonstrations, lobbying, and CIVIL DISOBEDIENCE. When capitalized, the term usually refers to the struggle for full constitutional rights by African Americans as it originated and developed in the United States in the 1950s and 1960s.

**CJD** abbreviation for CREUTZFELDT-JAKOB DISEASE.

**CK** abbreviation for CREATINE KINASE.

**CL 1.** abbreviation for drug CLEARANCE. **2.** abbreviation for COMPARISON LEVEL.

**cladistics** *n.* a method for classifying organisms on the basis of their evolutionary relationships, which are expressed in treelike diagrams called **cladograms**. —**cladism** *n.* —**cladist** *n.*

**claims review** an evaluation of the appropriateness of a claim for payment for a medical or mental health service rendered. It will consider whether the claimant is eligible for reimbursement, whether the charges are consistent

with customary fees or published institutional rates, and whether the service was necessary.

**clairaudience** *n.* in parapsychology, the alleged ability to hear voices or sounds beyond the normal range of hearing, including supposed messages from spirit guides or the dead. This may involve messages heard from or attuned to an “inner voice” or voices separate from thought. It is the auditory equivalent of CLAIRVOYANCE. See also EXTRASENSORY PERCEPTION. —**clairaudient** *n., adj.*

**clairvoyance** *n.* in parapsychology, the alleged ability to see things beyond the normal range of sight, such as distant or hidden objects or events in the past or future. Clairvoyance is supposedly an organic ability, whereas **remote viewing** is a planned activity, with rules and standards, in which clairvoyance may be used to see or sense things (events, thoughts, locations, etc.) from a distance. Compare CLAIRAUDIENCE. See also EXTRASENSORY PERCEPTION; SECOND SIGHT. —**clairvoyant** *n., adj.*

**clairvoyant dream** in parapsychology, a dream depicting events that appear to be confirmed by later happenings or knowledge. See CLAIRVOYANCE; PREMONITORY DREAM.

**CL<sub>alt</sub>** abbreviation for COMPARISON LEVEL FOR ALTERNATIVES.

**clamminess** *n.* a sensory blend that consists of coldness, moistness, and stickiness. —**clammy** *adj.*

**clan** *n.* **1.** in anthropology, a major social division of many traditional societies consisting of a group of families that claim common ancestry. Clans often prohibit marriage between members and are often associated with reverence for a particular TOTEM. See also DESCENT GROUP; PHRATRY. **2.** in Scotland and Ireland, a kinship group and former social unit based on traditional patterns of land tenure and the concept of loyalty to a clan chief. Clan members often took the name of the supposed clan founder prefaced by Mac (Scotland) or O' (Ireland) but were not necessarily linked by common ancestry.

**Clance Impostor Phenomenon Scale (CIPS)** see IMPOSTOR PHENOMENON.

**clang association** an association of words by similarity of sound rather than meaning. Clang association occurs as a pathological disturbance in manic states and schizophrenia. Also called **clanging**.

**clarification** *n.* a therapist's formulation, in clear terms and without indicating approval or disapproval, of a client's statement or expression of feelings. Clarification goes further than RESTATEMENT and REFLECTION OF FEELING but stops short of interpretation.

**class** *n.* **1.** a group, category, or division. See CATEGORIZATION. **2.** in sociology and political theory, see SOCIAL CLASS. **3.** in BIOLOGICAL TAXONOMY, a main subdivision of a PHYLUM, consisting of a group of similar, related ORDERS. **4.** in logic and philosophy, a collection of entities that have a specified property or properties in common: that is, a SET defined by a condition.

**class advocate** see ADVOCACY.

**class consciousness** awareness of belonging to a particular economic or social group, especially one regarded as being exploited or victimized. Karl MARX viewed class consciousness as a necessary condition for a revolution of industrial workers against the capitalist owners' class. The concept was extended in the late 20th century to include gender, race, ethnicity, and sexual orientation, with similar

implications. Here, the sense of “consciousness” derives from German philosophy and implies a social belief system or worldview (see WELTANSCHAUNG) rather than perceptual or waking consciousness.

**classical** *adj.* denoting a style, mode of operation, or function that was typical or standard at some time in the past. In psychology, for instance, the term CLASSICAL CONDITIONING was used to contrast Pavlovian conditioning with newly recognized OPERANT CONDITIONING when the distinction between the two forms of learning was pointed out by B. F. SKINNER in 1938.

**classical conditioning** a type of learning in which an initially neutral stimulus—the CONDITIONED STIMULUS (CS)—when paired with a stimulus that elicits a reflex response—the UNCONDITIONED STIMULUS (US)—results in a learned, or conditioned, response (CR) when the CS is presented. For example, the sound of a tone may be used as a CS, and food in a dog's mouth as a US. After repeated pairings, namely, the tone followed immediately by food, the tone, which initially had no effect on salivation (i.e., was neutral with respect to it), will elicit salivation even if the food is not presented. Also called **Pavlovian conditioning**; **respondent conditioning**; **Type I conditioning**; **Type S conditioning**. [discovered in the early 20th century by Ivan PAVLOV]

**classical humors** see HUMORAL THEORY.

**classical inference** see FREQUENTIST INFERENCE.

**classical paranoia** as conceptualized in the 19th century by German physician Karl Ludwig Kahlbaum (1828–1899) and later refined by Emil KRAEPELIN, a rare disorder characterized by elaborate, fixed, and systematic DELUSIONS, usually of a persecutory, grandiose, or jealous character, that develop insidiously, cannot be accounted for by any psychiatric disorder, and exist in the context of preserved logical and orderly thinking.

**classical probability** an approach to the understanding of PROBABILITY based on the assumptions that any random process has a given set of possible outcomes and that each possible outcome is equally likely to occur. An example often used is rolling a die, in which there are six possible outcomes and each outcome is assumed to be equally likely.

**classical psychoanalysis** **1.** psychoanalytic theory in which major emphasis is placed on the LIBIDO, the stages of PSYCHOSEXUAL DEVELOPMENT, and the ID instincts or drives. The prototypical theory of this kind is that of Sigmund FREUD. Also called **classical theory**; **drive theory**. **2.** psychoanalytic treatment that adheres to Sigmund Freud's basic procedures, using dream interpretation, free association, and analysis of RESISTANCE, and to his basic aim of developing insight into the patient's unconscious life as a way to restructure personality. Also called **orthodox psychoanalysis**.

**classical test theory (CTT)** the theory that an observed score (e.g., a test result) that is held to represent an underlying attribute (e.g., intelligence) may be divided into two quantities—the true value of the underlying attribute and the error inherent to the process of obtaining the observed score. CTT may be represented mathematically as  $X_p = T_p + e_p$ , where  $X_p$  is the observed score for respondent  $p$ ,  $T_p$  is the respondent's TRUE SCORE for the construct or characteristic being measured, and  $e_p$  is RANDOM ERROR that dilutes the expression of respondent  $p$ 's true score. The theory serves as the basis for models of test RELIABILITY and assumes that individuals possess stable characteristics or

traits that persist through time. See also GENERALIZABILITY THEORY. Compare ITEM RESPONSE THEORY.

**classical theory** see CLASSICAL PSYCHOANALYSIS.

**classic categorical approach** a method for classifying disorders founded on the assumption that there are clear-cut differences between disorders.

**classicism factor** in psychological aesthetics, a dimension of artistic style that emphasizes traditional aesthetic values, particularly those associated with the art and architecture of ancient Greece and Rome. The classicism factor is also used to distinguish more polished and formal art works from those that emphasize novelty and imagination (the **romanticism factor**).

**classification** *n.* **1.** in cognitive psychology, see CATEGORIZATION. **2.** in clinical psychology and psychiatry, the grouping of mental disorders on the basis of their characteristics or symptoms. See also DSM-IV-TR; DSM-5; INTERNATIONAL CLASSIFICATION OF DISEASES; NOSOLOGY. **3.** in biology, see BIOLOGICAL TAXONOMY. —**classify** *vb.*

**classification and regression tree analysis** see CART ANALYSIS.

**classification method** in industrial and organizational psychology, a method of evaluating jobs for the purpose of setting wages or salaries in which jobs are assigned to predefined classes or categories, usually on the basis of job title and job description. This usually involves comparison with one or more BENCHMARK JOBS. An example of such a method is the General Schedule system of the United States Civil Service. Compare FACTOR-COMPARISON METHOD; JOB-COMPONENT METHOD; POINT METHOD; RANKING METHOD.

**classification rule** a mathematical formula for placing units into groups (e.g., within DISCRIMINANT ANALYSIS) so as to maximize the similarities among group members with regard to a set of characteristics. Also called **allocation rule**.

**classification table** a table showing the number or percentage of cases correctly categorized by a given model, rule, or algorithm derived for that purpose. Columns represent the model predictions and rows represent the actual classes to which the items in a sample data set belong. For example, a researcher might use a classification table to display the results of a DISCRIMINANT ANALYSIS of college attendance for a group of high school students so as to evaluate the general accuracy of the model used. Also called **classification matrix**; **confusion matrix**.

**classification test** **1.** a test in which participants are required to sort objects, people, events, or stimuli into specific categories. See CATEGORIZATION. **2.** a test in which participants are themselves sorted into categories (e.g., of ability or psychological type) according to the responses given.

**classifier system** a COGNITIVE ARCHITECTURE consisting of a computational system in which knowledge, in the form of “if → then” classifier rules, is exposed to a reacting environment and as a result undergoes modification over time (learning). The entire system is evaluated over time, with the importance of the individual classifier seen as minimal. See ADAPTIVE PRODUCTION SYSTEM. [created in 1986 by U.S. computer scientist John Henry Holland (1929– )]

**class inclusion** the concept that a subordinate class (e.g., dogs) must always be smaller than the superordinate

class in which it is contained (e.g., animals). Jean PIAGET believed that understanding the concept of class inclusion represented an important developmental step. Children progress from classifications based on personal factors, perceptual features, and common function to classifications based on hierarchical relationships; for example, a monkey is a primate, a mammal, and a vertebrate animal. See CONCRETE OPERATION.

**class interval** a range of scores or numerical values that constitute one segment or class of a variable of interest. For example, individual weights can be placed into class intervals such as 100 lb–120 lb, 121 lb–140 lb, 141 lb–160 lb, and so forth. Class intervals often are used in FREQUENCY DISTRIBUTIONS and HISTOGRAMS to present a large data set in a simpler manner that is more easily interpreted.

**class limit** the uppermost and lowermost values between which lie a range of values constituting a segment or class of a variable: the upper and lower boundaries of a CLASS INTERVAL.

**classroom-behavior modification** an instructor's use of basic learning techniques, such as conditioning, to alter the behavior of the students within a learning environment. Specifically, classroom-behavior modification may utilize such methods as adjusting classroom seating, providing a flexible time deadline for assignments, or altering the lesson requirements. Direct intervention, however, is the most effective modification procedure, using cognitive behavioral techniques to address inappropriate classroom behavior. Such procedures are most useful for students with learning disabilities, attention-deficit/hyperactivity disorder, and other special needs.

**classroom discipline** **1.** traditionally, any form of compliance with discipline imposed on school pupils in class. **2.** the methods of correction used by teachers or schools for student behavior that does not comply with the rules and regulations that have been established for an optimal learning environment. **3.** any type of training expected to produce a specific pattern of behavior within a classroom. In some countries, classroom discipline now excludes physical punishment.

**classroom environment** the physical, social, psychological, and intellectual conditions that characterize an instructional setting. Although the physical environment usually includes classrooms, laboratories, and lecture halls, it may also include alternative locations, such as a museum, home, gymnasium, or even the outdoors. Regardless of the setting, the degree of enclosure or openness, noise, seating arrangements, DENSITY, and size have all been shown to have an effect on student behavior and learning. See also OPEN-CLASSROOM DESIGN.

**classroom test** a test devised by a teacher for use in class, as contrasted with a STANDARDIZED TEST.

**class structure** the composition, organization, and interrelationship of SOCIAL CLASSES within a society. The term encompasses the makeup of individual classes as well as their economic, political, and other roles within the larger SOCIAL ORDER.

**class theory** **1.** the notion that conflict between social and economic classes is a fundamental determining force in human affairs, affecting not only systems of government and social organization but also individual psychology. It is held that one's perceptions, goals, and expectations, and even one's conceptions of psychological health

and illness, are heavily influenced by the class of which one is a member. Most modern manifestations of class theory trace their origins to Karl MARX, although the work of the critical theorists of the Frankfurt school (1930s onward) has also been influential. See MARXISM. **2.** the branch of SET THEORY that is concerned with the properties of CLASSES. It is particularly interested in defining the distinction between classes and sets that are not classes.

**claudication** *n.* **1.** limping. **2.** a cramping pain in the muscles (intermittent claudication), occurring especially in the calf muscles. See also MENTAL CLAUDICATION.

**clause** *n.* a linguistic unit smaller than a sentence but larger than a PHRASE; in traditional grammar, a clause is defined as having both a subject and a finite verb (i.e., one that agrees with the subject in number and person). Clauses are usually divided into two principal types: **main clauses**, which make sense by themselves and can constitute a sentence in their own right, and **subordinate clauses**, which are dependent on a main clause in both these respects. In *I smiled at Jane, who waved back*, for example, the words before the comma constitute a main clause and those after the comma are a subordinate clause. In psycholinguistics, clauses are considered to be an important unit of sentence processing. Sentences that are complex from a syntactic point of view, in that they contain one or more subordinate clauses, are also considered psychologically more complex. See COMPLEX SENTENCE; COORDINATION. —**clausal** *adj.*

**claustrophobia** *n.* a persistent and irrational fear of enclosed places (e.g., elevators, closets, tunnels) or of being confined (e.g., in an airplane or the backseat of a car). Situations where enclosure or confinement may be encountered are often avoided or else endured with intense anxiety or distress. The focus of fear is typically on panic symptoms triggered in these situations, such as feelings of being unable to breathe, choking, sweating, and fears of losing control or going crazy. —**claustrophobic** *adj.*

**claustrum** *n.* (*pl.* **claustra**) a thin layer of gray matter in the brain that separates the white matter of the lenticular nucleus from the INSULA (from Latin, “barrier”). The claustrum forms part of the BASAL GANGLIA and its function is unknown. —**claustral** *adj.*

**clava** *n.* see GRACILE TUBERCLE. [from Latin, “club”]

**clavus** *n.* a sharp sensation as if a nail were being driven into the head.

**clay therapy** a form of therapy in which children manipulate clay, often used in physical rehabilitation, in stimulating individuals with intellectual disability, and in the assessment and treatment of various disorders. The clay can be a metaphor for feelings, yet at the same time it serves as a tangible item that is visible, changeable, and under the child’s control. A child can look at the clay, focus on it, manipulate it, squeeze it, and pound it, which can help reduce anxiety, enable the acting out of hostile emotions, and provide opportunities for gratification, achievement, and acceptance.

**clearance (CL)** *n.* the rate of elimination of a drug from the body in relation to its concentration in a body fluid, as expressed by the equation  $CL = \text{rate of elimination} / C$ , where  $C$  is the concentration of the drug in the body fluid. Clearance is additive, that is, drugs are eliminated by various mechanisms (renal, hepatic, etc.) at differing rates; thus, total clearance is the sum of clearance from each individual organ system.

**clearance requirement** **1.** in the design of security systems, the requirement that only specifically authorized personnel should have access to certain physical areas or types of information. **2.** in SAFETY ENGINEERING, a mandate or guideline specifying the minimal distance or elevation of objects from a potentially hazardous source.

**clear sensorium** see SENSORIUM.

**cleavage** *n.* the first stage of embryonic development, in which a fertilized ovum divides repeatedly to form a mass of smaller and smaller cells (see BLASTULA). Also called **segmentation**.

**cleft palate** a congenital disorder characterized by a fissure in the roof of the mouth caused by failure of bones of the palate to fuse properly during prenatal development. The extent of a cleft palate may vary in different individuals, affecting only the hard palate or both hard and soft palates or extending completely through to the uvula; a **cleft lip** may or may not co-occur. The condition is typically corrected through surgery between 9 and 18 months of age, and repeated surgeries during childhood may be necessary for complete correction. Also called **uranoschisis**.

**CLEP** acronym for COLLEGE LEVEL EXAMINATION PROGRAM.

**Clérambault’s syndrome** a form of EROTIC PARANOIA in which a person has delusions that someone else, who is typically older and of higher social status, is in love with him or her. The person continues to hold this belief despite having little contact with the other person and no reciprocation of feelings. The condition is more common in females than in males. Also called **de Clérambault’s syndrome**. [first described in 1922 by Gaëtan Gatian de Clérambault (1872–1934), French physician]

**clerical aptitude** **1.** the ability to learn specific skills required for office work, such as perceptual speed (e.g., comparing names or numbers), speed in typing, error location, and vocabulary. **2.** the measure of individual abilities in the following areas: vocabulary (understanding words and ideas), arithmetic (handling figures easily and accurately), and checking (recognizing similarities and differences rapidly).

**clerical test** an examination to assess a person’s knowledge or skills needed for office, clerical, or administrative support positions. Also called **clerical-aptitude test**.

**CLES** abbreviation for CONSTRUCTIVIST LEARNING ENVIRONMENT SURVEY.

**Clever Hans** the “thinking horse,” reputed to be able to solve mathematical problems, spell words, distinguish colors, and identify coins, that became famous in Berlin around 1900. It signaled its answers by tapping its foot. However, German psychologist Oskar Pfungst (1874–1932), using experimental methods, demonstrated that the horse was responding to minimal cues in the form of involuntary movements on the part of its owner.

**click-thru rate** the extent to which consumers actually click on BANNER ADVERTISEMENTS to visit a different website. This is viewed as one measure of banner advertising success.

**client** *n.* a person receiving treatment or services, especially in the context of counseling or social work. See PATIENT—CLIENT ISSUE.

**client abuse** see PATIENT ABUSE.

**client-centered consultation** see MENTAL HEALTH CONSULTATION.

**client-centered therapy** a form of psychotherapy developed by Carl ROGERS in the early 1940s. According to Rogers, an orderly process of client self-discovery and actualization occurs in response to the therapist's consistent empathic understanding of, acceptance of, and respect for the client's FRAME. The therapist sets the stage for personality growth by reflecting and clarifying the ideas of the client, who is able to see himself or herself more clearly and come into closer touch with his or her real self. As therapy progresses, the client resolves conflicts, reorganizes values and approaches to life, and learns how to interpret his or her thoughts and feelings, consequently changing behavior that he or she considers problematic. It was originally known as **nondirective counseling** or **nondirective therapy**, although this term is now used more broadly to denote any approach to psychotherapy in which the therapist establishes an encouraging atmosphere but avoids giving advice, offering interpretations, or engaging in other actions to actively direct the therapeutic process. Also called **client-centered psychotherapy**; **person-centered therapy**; **Rogersian therapy**.

**client characteristics** aspects of a client that define his or her physical and personality attributes as well as the problems and symptoms that the client brings into therapy for resolution and healing.

**client education** an intervention aimed at giving individuals information intended to change their cognitions, beliefs, affect, and behaviors. This educational process can take place in formal groups (psychoeducational groups) or as a routine part of initiating psychotherapy.

**client obligations** see CONTRACT.

**client-patient issue** see PATIENT-CLIENT ISSUE.

**client rights** the rights of patients or clients to be fully informed of the benefits or risks of treatment procedures and to make knowledgeable decisions to accept or reject treatment.

**client satisfaction** the extent to which a person seeking mental health services is content with the results.

**client self-monitoring** see SELF-MONITORING.

**client-treatment matching** the selection of therapeutic components (i.e., specific therapies and therapists) that are most appropriate for a client's needs and characteristics (e.g., ethnicity, gender, personality traits). There is evidence that client-treatment matching improves therapeutic outcomes.

**climacteric** *n.* the biological stage of life in which reproductive capacity declines and finally ceases. In women this period, which results from changes in the levels of estrogens and progesterone and is known as **menopause** (popularly, **change of life**), typically occurs between 45 and 55 years of age and lasts 2 to 7 years. During this time, menstrual flow gradually decreases in occurrence, duration, and volume (a transitional phase called **perimenopause**) and finally ceases altogether, and various physical and potentially psychological changes, such as hot flashes, night sweats, joint pain, emotional lability, and depression, may occur in varying combinations and degrees. Some men undergo a similar period about 10 years later than is typical for women (see MALE CLIMACTERIC). Also called **climacterium**. See also GONADOPAUSE.

**climate** *n.* long-term weather conditions in a particular region, such as average temperature, humidity, and sunshine. The study of climatic influences on cognition, mood, and behavior is part of ENVIRONMENTAL PSYCHOLOGY. —**climatic** *adj.*

**climax** *n.* see ORGASM.

**clinging behavior** a form of ATTACHMENT BEHAVIOR in which a child 6 months of age or older clings to the primary caregiver and becomes acutely distressed when left alone. Clinging behavior reaches a maximum in the 2nd and 3rd years and then slowly subsides. The behavior is also observed in the young of other primates and of some rodents.

**clinic** *n.* **1.** a health care facility for the diagnosis and treatment of emergency and ambulatory patients. **2.** a brief instructional program or session with diagnostic, therapeutic, or remedial purpose in the areas of mental or physical health or education.

**clinical** *adj.* **1.** of or relating to the diagnosis and treatment of psychological, medical, or other disorders. Originally involving only direct observation of patients, clinical methods have now broadened to take into account biological and statistical factors in treating patients and diagnosing disorders. **2.** relating to or occurring in a clinic.

**clinical assessment** the systematic evaluation and measurement of psychological, biological, and social factors in a person presenting with a possible psychological disorder. See also DYNAMIC ASSESSMENT.

**clinical counseling** counseling that addresses a client's personal or emotional difficulties. The counseling encompasses general goals for the client, for example, greater self-acceptance, better reality orientation, improved decision-making ability, and greater effectiveness in interpersonal relationships. The counselor's responsibilities include gathering and interpreting data, identifying the client's major problems, and formulating and (sometimes) implementing a treatment plan.

**clinical depression** among mental health professionals, a synonym for MAJOR DEPRESSIVE DISORDER. Within the general public, however, the term is often more broadly used to encompass any DEPRESSIVE DISORDER requiring therapeutic intervention.

**clinical diagnosis** the process of identifying and determining the nature of a disorder through the study of the symptom pattern, review of medical and other records, investigation of background factors, and, where indicated, administration of psychological tests.

**clinical efficacy** the effectiveness of clinical interventions based on the evidence of controlled studies. Such studies typically include random assignment to control groups and treatment manuals that guide therapist actions.

**clinical evidence** information about clients or patients that is relevant to clinical diagnosis and therapy, obtained either directly, through questioning (see CLINICAL INTERVIEW; PSYCHOLOGICAL TEST), or indirectly, through observation of their behavior in a clinical setting, their CASE HISTORIES, and the like.

**clinical geropsychology** an interdisciplinary field of research and practice that utilizes a LIFESPAN PERSPECTIVE as a conceptual basis to address the mental health needs and services of older adults.

**clinical health psychology** a specialty field in HEALTH PSYCHOLOGY that applies biopsychosocial theory, research, and practice principles to promote physical health and to help resolve the immediate problems of patients with medical conditions and related family difficulties. Biofeedback, relaxation training, hypnotherapy, and coping skills are among the many methods used by **clinical health psychologists**, who are also active in health policy and in developing and implementing models of preventive intervention.

**clinical hypnosis** see HYPNOTHERAPY.

**clinical interview** a type of directed conversation initially used with children but now applied in a variety of contexts, including HUMAN FACTORS research, PSYCHOLOGICAL ASSESSMENT, and treatment planning for patients by mental health professionals. In a clinical interview, the investigator may utilize certain standard material but essentially determines which questions to ask based on the responses given by the patient to previous ones. This technique is largely spontaneous and enables the interviewer to adapt questions to the patient's comprehension and ask additional questions to clarify ambiguities and enhance understanding. See also DIAGNOSTIC INTERVIEW.

**clinical investigation** 1. examination of a patient by means of interviews, testing, behavioral observation, or document analysis. 2. an in-depth analysis of an individual's life experiences and personal history.

**clinical judgment** analysis, evaluation, or prediction of the presenting signs and symptoms in an individual with a disease, disorder, dysfunction, or impairment. It includes assessing the appropriateness of particular treatments and the degree or likelihood of clinical improvement. These conclusions are derived from the expert knowledge of health or mental health professionals, as opposed to conclusions drawn from actuarial tables or statistical methods.

**clinical judgment research** empirical studies of the factors influencing the judgments mental health practitioners make with regard to assessment, treatment, predictions (e.g., dangerousness, suicidality), and prognosis in therapeutic and legal settings. Factors researched include individual differences of the practitioner (e.g., values, gender, sexual orientation), social contexts, and complex cognitive thought processes involved in judgment.

**clinically relevant behavior (CRB)** see FUNCTIONAL ANALYTIC PSYCHOTHERAPY.

**clinical marker** an observable sign indicative of disorder. See also BIOCHEMICAL MARKER; BIOLOGICAL MARKER.

**clinical method** the process by which a health or mental health professional arrives at a conclusion, judgment, or diagnosis about a client or patient in a clinical situation.

**clinical neurology** see NEUROLOGY.

**clinical neuropsychology** a specialty of clinical psychology that represents the applied practice of NEUROPSYCHOLOGY and is concerned with assessment of and rehabilitation from brain injury that impairs an individual's ability to function.

**clinical neuroscience** an emerging field in which basic neuroscience data and the scientific method are coupled to such fields as clinical psychology, psychiatry, and neurology in order to better understand the neural underpinnings of mental and nervous system disorders and to improve their diagnosis and treatment.

**clinical pediatric neuropsychology** see PEDIATRIC NEUROPSYCHOLOGY.

**clinical practice** providing health or mental health services to patients or clients. In mental health, clinical practice includes services (e.g. psychological assessment, diagnosis, treatment) provided by a clinical psychologist, psychiatrist, or other mental health care provider who works directly with clients or patients to relieve distress or dysfunction caused by emotional and behavioral problems. Clinical practice typically refers to work in health and mental health clinics or in group or independent practices.

**clinical practice guidelines** systematically developed statements to assist providers, as well as clients or patients, in making decisions about appropriate medical or mental health care for specific clinical conditions.

**clinical prediction** the process of examining such factors as signs, symptoms, and case histories to determine the CLINICAL DIAGNOSIS and likely progress of patients. Clinical prediction can be contrasted with **actuarial prediction**, in which formal statistical methods combine numerical information for the same purposes. See CLINICAL JUDGMENT.

**clinical psychology** the branch of psychology that specializes in the research, assessment, diagnosis, evaluation, prevention, and treatment of emotional and behavioral disorders. **Clinical psychologists** are doctorate-level professionals who have received training in research methods and techniques for the diagnosis and treatment of various psychological disorders. They work primarily in health and mental health clinics, in research, in academic settings, or in group and independent practices. They also serve as consultants to other professionals in the medical, legal, social-work, and community-relations fields. Clinical psychologists comprise approximately one third of the psychologists working in the United States and are governed by the code of practice of the American Psychological Association and by state licensing requirements.

**clinical psychopharmacology** a branch of pharmacology concerned with how drugs affect the brain and behavior and specifically with the clinical evaluation and management of drugs developed for the treatment of mental disorders. See also PSYCHOPHARMACOTHERAPY.

**clinical psychophysiology** the therapeutic use of the theories and principles of PSYCHOPHYSIOLOGY through such techniques as biofeedback, meditation, and hypnosis. See also APPLIED PSYCHOPHYSIOLOGY.

**clinical risk assessment** a clinician-based prediction of the likelihood that an individual will pose a threat to others or engage in a certain behavior (e.g., violence) within a given period. Unlike ACTUARIAL RISK ASSESSMENT, a specific formula or weighting system using empirically derived predictors is not applied. Instead, clinicians make predictions of dangerousness or violent behavior primarily on the basis of their own experience, reasoning, and judgment; their observations, examination, and psychological testing of the individual; and information obtained from his or her life history.

**clinical significance** the extent to which a study result is judged to be meaningful in relation to the diagnosis or treatment of disorders. An example of a clinically significant result would be an outcome indicating that a new intervention strategy is effective in reducing symptoms of

depression. See also PRACTICAL SIGNIFICANCE; STATISTICAL SIGNIFICANCE.

**clinical social work** a field devoted to providing individual, family, and group treatment from a psychosocial perspective in such areas as health, mental health, family and child welfare, and correction. Clinical social work also involves client-centered advocacy that assists clients with information and referral and in dealing with local, state, and federal agencies.

**clinical sociology** see PUBLIC SOCIOLOGY.

**clinical sport psychology** a specialty within clinical psychology focused on individuals involved in sport. **Clinical sport psychologists** perform much the same services for athletes as do professionals in EDUCATIONAL SPORT PSYCHOLOGY (i.e., helping with performance enhancement and consistency), but they also assist athletes with clinical issues that typically extend beyond the training of educational sport psychologists (e.g., depression, eating disorders).

**clinical trial** a research study designed to compare a new treatment or drug with an existing standard of care or other control condition (see CONTROL GROUP). Trials generally are designed to answer scientific questions and to find better ways to treat individuals who have a specific disease or disorder. Also called **clinical study**. See also RANDOMIZED CLINICAL TRIAL.

**clinical type** an individual whose pattern of symptoms or behaviors is consistent with a recognizable disorder of clinical psychology and psychiatry.

**clinical utility** **1.** the extent to which diagnostic testing (e.g., genetic testing) is useful in facilitating beneficial health outcomes (e.g., preventing mortality, ameliorating morbidity and disability) from interventions that are initiated based on test results. **2.** the extent to which the interventions themselves can be applied successfully and cost-effectively.

**clinical utility research** see EFFECTIVENESS RESEARCH.

**clinical validation** the act of acquiring evidence to support the utility of specific procedures for diagnosis or treatment.

**clinical vampirism** see VAMPIRISM.

**clinician** *n.* a medical or mental health care professional who is directly involved in the care and treatment of patients, as distinguished from one working in other areas, such as research or administration.

**clinodactyly** *n.* a permanent deflection of one or more of the fingers. This is a common physical anomaly but is also associated with many genetic or chromosomal disorders, including DOWN SYNDROME.

**clipping** *n.* the shortening of a word in such a way that the new word is used with exactly the same meaning, for example, *exam* from *examination*. In general, adults prefer **back-clipping**, for example, *prof* for *professor*, whereas children prefer **front-clipping**, for example, *fessor* for *professor*. Unlike a BACK-FORMATION, the clipped word has the same part of speech as the full form.

**clique** *n.* a status- or friendship-based subgroup within a larger group or organization. Cliques are particularly common during adolescence, when they are often used to raise social standing, strengthen friendship ties, and reduce feelings of isolation and exclusion.

**clitoral circumcision** see FEMALE GENITAL MUTILATION.

**clitoral hood** a fold of skin that covers the clitoris when it is flaccid. It is homologous to the FORESKIN of the penis. See also PREPUCE.

**clitoridectomy** *n.* the surgical removal of all or part of the clitoris, usually performed on girls as an ethnic or religious rite. It is a highly controversial practice and the most common form of FEMALE GENITAL MUTILATION.

**clitoris** *n.* a small body of erectile tissue situated anterior to the vaginal opening. It is homologous to the penis but usually much smaller. —**clitoral** *adj.*

**cloaca** *n.* **1.** the common cavity, occurring in early mammalian embryos, into which the intestinal, urinary, and reproductive canals open. The proximity of these functions and the pleasure involved in them are a major factor in Sigmund FREUD's psychosexual theory. **2.** in nonmammalian vertebrates, the cavity through which sperm are discharged in the male, and eggs are laid in the female, and through which wastes are eliminated. [Latin, literally: "sewer," "drain"] —**cloacal** *adj.*

**clomipramine** *n.* a TRICYCLIC ANTIDEPRESSANT drug used for the treatment of obsessive-compulsive disorder (OCD) as well as depression and panic disorder. Clomipramine is a more potent inhibitor of serotonin reuptake than other tricyclic antidepressants, and its active metabolite, desmethylclomipramine, inhibits norepinephrine reuptake; it thus is classified as a mixed serotonin–norepinephrine reuptake inhibitor. Because of its tricyclic structure, it has the same adverse side effects and toxicity as other tricyclic antidepressants, and it has been largely supplanted by the SSRIS, one of which—FLUVOXAMINE—is also used for the treatment of OCD. U.S. trade name: **Anafranil**.

**clonazepam** *n.* a highly potent BENZODIAZEPINE originally developed to treat absence seizures but now used for the treatment of panic disorder and other anxiety disorders and as a MOOD STABILIZER. Because it has a slow onset of action, long HALF-LIFE, and slow rate of CLEARANCE, it needs to be taken less frequently (twice a day) than some other benzodiazepines. U.S. trade name: **Klonopin**.

**clone** **1.** *n.* an organism that is genetically identical to another, whether because both organisms originate from a single common parent as a result of ASEXUAL reproduction or because one is derived from genetic material taken from the other, as in reproductive CLONING. Differences in characters between cloned individuals are assumed to be the result of environmental factors. **2.** *n.* a group of genetically identical organisms. **3.** *n.* a group of cells derived from a single parent cell. **4.** *vb.* to produce genetically identical copies of a particular organism or cell. —**clonal** *adj.*

**clonic** *adj.* of, relating to, or characterized by CLONUS.

**clonic phase** see TONIC–CLONIC SEIZURE.

**clonic spasm** see SPASM.

**clonidine** *n.* a drug used for the treatment of hypertension. It functions by direct stimulation of ALPHA-ADRENERGIC RECEPTORS in the brainstem to restrict the flow of impulses in peripheral sympathetic nerves supplying the arteries, thus causing them to relax (widen); most of the other commonly prescribed antihypertensive drugs act as beta blockers or as diuretics. Clonidine has been used as an adjunctive agent in the management of alcohol and opioid withdrawal, as a nonstimulant treatment for attention-deficit/hyperactivity disorder, and in the management of clo-

zapine-induced sialorrhea (i.e., drooling). It has also been tested in patients with bipolar disorder who are resistant to other drug treatments, but with limited effectiveness. U.S. trade name (among others): **Catapres**.

**cloning** *n.* **1.** the process of making copies of a specific piece of DNA, usually a gene. This uses the techniques of GENETIC ENGINEERING to isolate the desired gene and transfer it to a suitable host cell, such as a bacterium, inside which it will undergo replication. Cloning facilitates investigation of gene structure and function and enables identification and analysis of particular gene products. Also called **gene cloning**. **2.** the process of making genetically identical copies (i.e., CLONES) of an entire organism. The potential cloning of human beings raises major ethical and social questions.

**Cloninger's alcoholism typology** a two-part classification for distinguishing different types of persons with ALCOHOL DEPENDENCE. **Type 1** individuals tend to start problem drinking after age 25, experience alcohol dependence that is more psychological than physiological, and feel guilty for drinking. **Type 2** individuals start problem drinking at a younger age, are more likely to have family members with substance abuse problems, and tend to have more behavioral problems. The two types have also been found to differ in personality traits; for example, Type 1 alcoholics are more often harm avoidant (see CLONINGER'S PSYCHOBIOLOGICAL MODEL OF PERSONALITY). These types are sometimes considered representative of either end of a continuum rather than as discrete groups. [developed by U.S. psychiatrist and geneticist C. Robert Cloninger (1944– )]

**Cloninger's psychobiological model of personality** a seven-factor model that includes four dimensions of temperament and three dimensions of character. The temperament dimensions include **harm avoidance** (sensitivity to, and avoidance of, punishing stimuli), **novelty seeking** (a tendency toward exhilaration or excitement in response to cues of potential reward or relief of punishment), **reward dependence** (a tendency to respond to positive signals such as social approval and to maintain rewarded behavior), and **PERSISTENCE** (a tendency to continue a task or activity regardless of frustration, dissatisfaction, or fatigue). The character dimensions include **self-directedness** (the extent to which individuals are goal-oriented and resourceful), **cooperativeness** (the extent to which individuals relate to others), and **self-transcendence** (the extent to which individuals are transpersonal, spiritual, and idealistic). The model suggests that dimensions of temperament are heritable and that novelty seeking and harm avoidance are closely related to the BEHAVIORAL APPROACH SYSTEM and BEHAVIORAL INHIBITION SYSTEM, respectively, described by British psychologist Jeffrey Alan Gray (1934–2004). In addition, the model proposes a link between certain temperaments and specific neurotransmitters: that is, between novelty seeking and dopamine, between harm avoidance and serotonin, and between reward dependence and norepinephrine. Major character traits, however, are said to be related to insight learning and shaped both by temperament and environmental factors. The model has been influential in framing research questions in both psychiatry and psychology, although empirical support for its theoretical assumptions and predictions has been mixed. Measures that assess central concepts of the model include the TEMPERAMENT AND CHARACTER INVENTORY. [developed by C. Robert Cloninger]

**clonus** *n.* a type of involuntary movement caused by a rapid succession of alternate muscular contractions and relaxations. Although some forms of clonus, such as hiccups, are considered normal, most such movements are abnormal; for example, clonus occurs as part of a TONIC-CLONIC SEIZURE. More severe forms are associated with spinal cord damage, poisoning (e.g., from strychnine), or an infection (e.g., syphilis).

**Clopixol** *n.* a trade name for ZUCLOPENTHIXOL.

**clorazepate** *n.* a long-acting BENZODIAZEPINE used in the treatment of anxiety, alcohol withdrawal, and PARTIAL SEIZURES. U.S. trade name (among others): **Tranxene**.

**closed adoption** see ADOPTION.

**closed call system** a system of vocal communication in which there is a limited number of vocalizations that can be used by an organism or in which the vocalizations are not modifiable after a certain age. For example, in some bird species there is little evidence of environmentally induced change in calls after hatching, and in others there is little or no change in vocalizations after a CRITICAL PERIOD for learning has ended. Compare OPEN CALL SYSTEM.

**closed-captioned television** television programs supplemented with printed captions, usually placed at the bottom of the screen, that provide a visual representation of the speech on the audio channel. Closed captioning is used for the benefit of viewers with hearing loss.

**closed-circuit television system (CCTV system)** a type of PRINT ENLARGEMENT SYSTEM for individuals with LOW VISION that uses a video camera to magnify and project printed or handwritten text onto a video monitor or television screen.

**closed-class words** in a language, a category of words that does not readily admit new members, consisting mainly of words that serve key grammatical functions, such as pronouns, prepositions, and determiners (see FUNCTION WORD). Compare OPEN-CLASS WORDS.

**closed economy** an experimental design used in instrumental- or operant-conditioning procedures in which all arranged reinforcement (e.g., food) is obtained within experimental tests, with no supplements occurring outside the experimental context. Compare OPEN ECONOMY.

**closed group** a group consisting of only those members who constitute the original group. In counseling or therapy, the term refers to a group that excludes new members during the course of therapy. Compare OPEN GROUP.

**closed head injury** a head injury, such as a CONCUSSION or ACCELERATION–DECELERATION INJURY, in which the skull is not broken open or pierced. Compare OPEN HEAD INJURY.

**closed-loop system** **1.** a system that recirculates materials, information, or energy without external input. **2.** a self-regulating system in which FEEDBACK from sensors enables a control mechanism to maintain a set of operating conditions. An example would be a central heating or air-conditioning system that is set to maintain an environment at a particular temperature. Compare OPEN-LOOP SYSTEM.

**closed marriage** a marriage that changes little over the years and that involves relatively little change in the individual partners. A closed marriage relies on the legal bond between the parties to enforce permanence and sexual ex-



clusivity. Also called **static marriage**. Compare OPEN MARRIAGE.

**closedmindedness** *n.* a personality trait reflecting a relatively high level of DOGMATISM. Compare OPENMINDEDNESS. —**closedminded** *adj.*

**closed question** see FIXED-ALTERNATIVE QUESTION.

**closed scenario** an experiment in which the participant is required to choose between a limited number of options for solving an assigned problem.

**closed shop** a work arrangement in which union membership is a precondition for hiring. In the United States, the LABOR MANAGEMENT RELATIONS ACT prohibits such a precondition but does allow UNION SHOPS and AGENCY SHOPS. Compare OPEN SHOP.

**closed skill** any motor skill that is performed under the same conditions on every occasion, as in making a free-throw shot in a game of basketball. Compare OPEN SKILL.

**closed society** see OPEN SOCIETY.

**closed system** **1.** an isolated, self-contained system having no contact with the environment, such as the vascular system or a space module. **2.** by analogy, a social system that is resistant to new information or change. Compare OPEN SYSTEM.

**closet homosexual** a gay man or lesbian who does not reveal his or her sexual orientation to others, particularly to family members, parents, or employers. Compare COMING OUT.

**closing** *n.* ending a session in psychotherapy or counseling. Approaches to closing vary among therapists: Some allow the client to initiate the end of the session; others initiate it themselves.

**closure** *n.* **1.** the act, achievement, or sense of completing or resolving something. In psychotherapy, for example, a client achieves closure with the recognition that he or she has reached a resolution to a particular psychological issue or relationship problem. **2.** one of the GESTALT PRINCIPLES OF ORGANIZATION. It states that people tend to perceive incomplete forms (e.g., images, sounds) as complete, synthesizing the missing units so as to perceive the image or sound as a whole—in effect closing the gap in the incomplete forms to create complete forms. Also called **law of closure**; **principle of closure**. See also AUDITORY CLOSURE; GOODNESS OF CONFIGURATION; PRÄGNANZ; VISUAL CLOSURE. **3.** more generally, the act of closing or the state of being closed.

**Closure Flexibility Test** a perceptual test in which each item consists of one simple geometrical figure and four complex figures: The participant is asked to identify which one of the complex figures has the simple figure embedded within it. The test, which was developed from the earlier **Gottschaldt Figures Test**, is considered to be an index of perceptual flexibility. Also called **Concealed Figures Test**. [originally developed by German psychologist Kurt Gottschaldt (1902–1991)]

**clouded sensorium** see SENSORIUM.

**clouding of consciousness** a mental state involving a reduced awareness of the environment, inability to concentrate, and confusion. Also called **mental fog**.

**cloverleaf skull** see KLEEBLATTSCHÄDEL SYNDROME.

**clozapine** *n.* an ATYPICAL ANTIPSYCHOTIC agent of the DIBENZODIAZEPINE class: the first of the atypical antipsy-

chotics to be used clinically and released into the U.S. market in 1990. Although regarded by some as the most effective of all antipsychotic drugs, clozapine has problematic side effects that have limited its use. Among others, these adverse effects may include weight gain, sedation, and—importantly—AGRANULOCYTOSIS, which may occur in 1% to 2% of patients treated with the drug. Use of clozapine therefore requires frequent monitoring of white blood cell counts in patients and is generally reserved for patients who have responded suboptimally to other antipsychotic agents. U.S. trade name: **Clozaril**.

**cloze procedure** a technique used in both testing and teaching reading and comprehension, in which words are deleted from a text, leaving blank spaces. The number of blanks that students fill in correctly is used as a measure of progress in these subjects. The cloze procedure is based on the Gestalt principle of CLOSURE. [introduced in 1953 by Wilson L. Taylor]

**CLT** abbreviation for CENTRAL LIMIT THEOREM.

**club drug** a substance used by teenagers and young adults at bars, dance clubs, or all-night parties known as *raves*. Club drugs include MDMA (Ecstasy); GHB, FLUNITRAZEPAM, and KETAMINE (see also DATE-RAPE DRUG); METHAMPHETAMINE; and LSD. Chronic abuse can have severe physiological or psychological repercussions (or both) and, when combined with the intake of alcohol, might also prove fatal.

**clubfoot** *n.* a type of deformity in which the foot is twisted out of normal position, resulting—in most cases—in more than one positional distortion (e.g., the foot may be turned inward and downward, outward and upward, or in some other variation). Clubfoot may be congenital, or the condition may be due to injury or disease, such as poliomyelitis. Clubfoot often is associated with another anomaly, such as MENINGOMYELOCELE. Also called **talipes**.

**clumsy automation** in ergonomics, any reallocation of system functions from humans to machines that does not lead to the expected gains in safety and efficiency. This is usually because automation alters the human operator's task, resulting in increased workload or UNDERLOAD. Similarly, machine functions may be misallocated to humans. See also ADAPTIVE TASK ALLOCATION; FUNCTION ALLOCATION. [defined in 1989 by U.S. management scientist Earl Wiener (1949– )]

**cluster analysis** a method of multivariate data analysis in which individuals or units are placed into distinct subgroups based on their strong similarity with regard to specific attributes. For example, one might use cluster analysis to form groups of individual children on the basis of their levels of anxiety, aggression, delinquency, and cognitive difficulties so as to identify useful typologies that could increase understanding of co-occurring mental disorders and lead to more appropriate treatments for specific individuals. There are several different forms of cluster analysis—including HIERARCHICAL CLUSTERING and LATENT CLASS ANALYSIS—and each is appropriate for use with different types of data. Results of a cluster analysis often are presented in a DENDROGRAM. Also called **clustering**.

**clustered data** a set of observations or scores that can be grouped into multiple subsets (clusters), such that the items in each subset are similar to one another with respect to certain attributes and the distinctions between subsets help explain the overall variation among the values as a whole. See CLUSTER ANALYSIS.

**cluster evaluation** *n.* 1. a type of PROGRAM EVALUATION, either a FORMATIVE EVALUATION or a SUMMATIVE EVALUATION, carried out at several sites. Each site has the same EVALUATION OBJECTIVES, which are assessed in a coordinated effort by different evaluators in a continuous process. Information so obtained is then shared to enable common PROGRAM OUTCOMES to be assessed and to identify elements that contributed to the failures or successes of the program. 2. a strategy for accumulating information in evaluation research that involves combining and reconciling studies with somewhat different conclusions. This approach suggests criteria for determining when data from dissimilar studies can be pooled. 3. an approach in which individual evaluators of separate projects collaborate with an overarching evaluator. See also META-EVALUATION.

**cluster headache** an extremely severe unilateral headache, typically limited to the area around one eye, that lasts between 15 minutes and 3 hours and occurs in bouts, or “clusters,” every day (sometimes twice or more a day or every other day) for a period of up to 3 months, followed by a headache-free period of months or years. The exact cause is not known but may include vascular dilation, trigeminal nerve activity, or HISTAMINE release. Also called **histamine headache**.

**clustering** *n.* 1. the tendency for items to be consistently grouped together in the course of recall. This grouping typically occurs for related items. It is readily apparent in memory tasks in which items from the same category, such as nonhuman animals, are recalled together. 2. in statistics, see CLUSTER ANALYSIS. 3. in ergonomics, a method of KNOWLEDGE ELICITATION in which a researcher interviewing users of a product or system jots down key ideas or words as they occur and then groups together linked ideas and meanings. The clusters so formed are then used to create taxonomies, task hierarchies, or menu structures. —**cluster** *n.*, *vb.*

**cluster randomization** a process in which preexisting groups are assigned randomly to specific experimental conditions, as occurs in GROUP EXPERIMENTS, GROUP-RANDOMIZED TRIALS, and other designs in which collective entities form the UNIT OF ANALYSIS. When such a process is applied to single individuals it is called RANDOM ASSIGNMENT.

**cluster-randomized trial** see GROUP-RANDOMIZED TRIAL.

**cluster sampling** a tiered method of obtaining units for a study. A population is first subdivided into smaller groups or clusters (often administrative or geographical), and a random sample of these clusters is drawn. The process is then repeated for each sampled cluster until the required level is reached. An example would be sampling voters in a large jurisdiction (e.g., a state) by randomly choosing subgroups (e.g., counties) and then further subgroups (e.g., towns and cities) until individual participants are obtained for a study.

**cluster suicide** a statistically high occurrence of suicides within a circumscribed geographic area, social group, or time period. Cluster suicides have been identified involving adolescents, factory workers, and dispersed individuals who imitated the suicide of an admired role model as described by the media (see WERTHER SYNDROME). Compare MASS SUICIDE.

**cluttering** *n.* 1. a language disorder characterized by rapid speech that is confused, jumbled, and imprecise.

Compare STUTTERING. 2. a tendency to collect items without any intention to do so. It is distinct from the clinically diagnosable condition of HOARDING in that the saved articles do not include trash or other unsanitary items and the individual is able to make rational decisions about and periodically discard materials.

**CM** abbreviation for COCHLEAR MICROPHONIC.

**CMAS** abbreviation for CHILDREN'S MANIFEST ANXIETY SCALE.

**CME** abbreviation for CONTINUING MEDICAL EDUCATION.

**CMHC** abbreviation for COMMUNITY MENTAL HEALTH CENTER.

**CMI** abbreviation for CORNELL MEDICAL INDEX.

**CMP** abbreviation for CHRONIC MYOFASCIAL PAIN.

**CMS** abbreviation for CENTERS FOR MEDICARE AND MEDICAID SERVICES.

**CNS** abbreviation for CENTRAL NERVOUS SYSTEM.

**CNS abnormality** any defect in structure or function of the tissues of the brain and spinal cord, that is, the central nervous system (CNS).

**CNS depressant** any of a group of drugs that, at low doses, depress the inhibitory centers of the brain. At somewhat higher doses, they depress other neural functions, slow reaction times, and lower respiration and heart rate. At still higher doses, they can induce unconsciousness, coma, and death. Examples of CNS depressants are ALCOHOL, BARBITURATES, BENZODIAZEPINES, INHALANTS, and MEPROBAMATE. See also SEDATIVE, HYPNOTIC, AND ANXIOLYTIC DRUG.

**CNS stimulant** any of a group of drugs that, at low to moderate doses, heighten wakefulness and alertness, diminish fatigue, and provoke feelings of energy and well-being. At higher doses, the more powerful stimulants can produce agitation, panicked excitement, hallucinations, and paranoia. In general, stimulants exert their effects by enhancing CATECHOLAMINE neurotransmission and increasing activity in the SYMPATHETIC NERVOUS SYSTEM. COCAINE and the AMPHETAMINES are examples of stimulants thought to activate the reward system (nucleus accumbens, limbic, and frontal cortex) by potentiating dopaminergic neurotransmission. CAFFEINE and NICOTINE are CNS stimulants with different mechanisms of action at ADENOSINE receptors and NICOTINIC RECEPTORS, respectively. In non-Western cultures, BETEL NUT, COCA leaves, GUARANA, KHAT, and numerous other substances are used as stimulants. Some stimulants are used clinically in mental health, and in psychiatric contexts, they are often referred to as **psychostimulants**. These drugs include the amphetamines and related or similarly acting compounds (e.g., METHYLPHENIDATE, PEMOLINE, MODAFINIL), used for the treatment of attention-deficit/hyperactivity disorder, narcolepsy, depression, and brain dysfunction and as appetite suppressants. Caffeine and ephedrine are ingredients of over-the-counter “alertness” medications.

**CNS vasodilation** dilation of cerebral blood vessels leading to increased cerebral blood flow. It can be caused by various agents, such as nitrous oxide.

**CNV** abbreviation for CONTINGENT NEGATIVE VARIATION.

**Co** abbreviation for COMPARISON STIMULUS.

**coaching** *n.* specialized instruction and training provided

to enable individuals to acquire or enhance particular skills, as in EXECUTIVE COACHING or LIFE COACHING, or to improve performance, as in athletic or academic coaching.

**Coaching Behavior Assessment System (CBAS)** an observation system, developed in the 1970s, for determining the frequency of 12 specific coaching behaviors and their effect on athletes. The behaviors may be exhibited by the coach in anticipation of or in reaction to an athlete's or a team's performance and include correcting, rewarding, giving negative feedback, instructing, and disciplining. A 2-hour instructional program, **Coach Effectiveness Training**, was later developed to teach coaches how to monitor their behavior, offer technical instruction, avoid expressing frustration, and praise good performance and effort. [originally developed by U.S. psychologists Ronald E. Smith (1940– ) and Frank L. Smoll (1941– )]

**coacting group** a group consisting of two or more individuals working in one another's presence on tasks and activities that require little or no interaction or communication (COACTION TASKS), such as clerical staff working at individual desks in an open-design office. Researchers often create coacting groups in laboratory studies to determine the effect of the mere presence of others on performance. See also SOCIAL FACILITATION.

**coaction effect** the positive or negative change in an individual's performance sometimes seen when other individuals are present and engaged in the same task. See also AUDIENCE EFFECT.

**coaction task** any performance, competition, work assignment, or other goal-oriented activity that individuals execute in the presence of one or more other individuals who are performing a similar type of task. Examples include an aerobics exercise session and students taking a written test in a classroom. Compare AUDIENCE TASK.

**coactivation** *n.* the activation of the same response at the same time by two different stimuli.

**coactive sport** a sport in which participants perform the same task without the need for interaction or for coordination of their actions with those of other players. Bowling and golf are examples of coactive sports. Compare INTERACTIVE SPORT.

**coadaptation** *n.* the development of interdependent behavioral adaptations between species. For example, a type of fruit tree may depend on a specific mammal to disperse its seeds and that mammal may depend on the tree's fruit as part of its diet. See also SYMBIOSIS.

**coalition** *n.* an alliance of two or more individuals or groups, often formed to gain a better outcome (e.g., power and influence) than can be achieved by each alone. Coalitions tend to be adversarial, in that they seek outcomes that will benefit the coalition members at the expense of nonmembers. They also tend to be unstable because (a) they include individuals who would not naturally form an alliance but are obliged or encouraged to do so by circumstances and (b) members frequently abandon one alliance to form a more profitable one. Such alliances are also formed among nonhuman animals. In chimpanzees, for example, a coalition of two or more lower-ranking chimps can subdue the dominant male in the troop. See also MINIMUM POWER THEORY; MINIMUM RESOURCE THEORY.

**coarse tremor** see TREMOR.

**coarticulation** *n.* a phenomenon in which the performance of one or more actions in a sequence varies accord-

ing to the other actions in the sequence. This is particularly important in speech, where the formation of certain PHONEMES varies according to the speech sounds that immediately precede or follow: For example, the aspirated [p] sound in *pin* differs slightly from the unaspirated [p] in *spin* (see ASPIRATION). Coarticulation also occurs in keyboarding, where the movements used to type a particular key are different when the preceding or following keys are different. See also ALLOMORPH; ALLOPHONE.

**cobedding** *n.* the practice of placing sibling infants, such as twins, in the same crib, bed, or incubator. There is some evidence of improved outcomes for infants born prematurely and those with LOW BIRTH WEIGHT who are cobedded in neonatal intensive care units. However, the practice of cobedding infants at home remains controversial as it is assumed to present an increased risk of SUDDEN INFANT DEATH SYNDROME. Compare BED-SHARING.

**CO blob** abbreviation for CYTOCHROME OXIDASE BLOB.

**coca** *n.* a shrub, *Erythroxylum coca*, that is indigenous to Peru, Bolivia, and other South American countries and cultivated in India, Sri Lanka, and Indonesia. The leaves have been used for centuries as the source of cocaine.

**cocaine** *n.* a drug, obtained from leaves of the COCA shrub, that stimulates the central nervous system (see CNS STIMULANT), with the effects of reducing fatigue and increasing well-being, followed by a period of depression as the initial effects diminish. The drug acts by blocking the reuptake of the neurotransmitters dopamine, serotonin, and norepinephrine. The psychoactive properties of the coca plant were recognized by the Peruvian Incas before 4000 BCE, and in the 1880s the possible therapeutic uses of cocaine were investigated. Sigmund FREUD observed that the drug functioned as a topical anesthetic. See also CRACK; FREEBASE.

**cocaine abuse** in *DSM-IV-TR*, a pattern of cocaine use marked by recurrent significant adverse consequences related to the repeated ingestion of the substance. This diagnosis is preempted by the diagnosis of COCAINE DEPENDENCE: If the criteria for cocaine abuse and cocaine dependence are both met, only the latter diagnosis is given. In *DSM-5*, however, both have been combined into one category, STIMULANT USE DISORDER, and are no longer considered distinct diagnoses. See also SUBSTANCE ABUSE.

**Cocaine Anonymous (CA)** a voluntary organization of men and women who seek to recover from cocaine addiction by using a TWELVE-STEP PROGRAM. See also SELF-HELP GROUP.

**cocaine dependence** in *DSM-IV-TR*, repeated or continued use of cocaine despite significant cocaine-related behavioral, physiological, and psychosocial problems and tolerance or characteristic withdrawal symptoms if use is suspended. In *DSM-5*, cocaine dependence has been combined with COCAINE ABUSE into a single disorder, and neither is considered a distinct diagnosis any longer (see STIMULANT USE DISORDER). See also SUBSTANCE DEPENDENCE.

**cocaine intoxication** in *DSM-IV-TR*, a reversible syndrome due to the recent ingestion of cocaine. It includes clinically significant behavioral or psychological changes (e.g., agitation, aggressive behavior, elation, grandiosity, impaired judgment, talkativeness, hypervigilance), as well as two or more physiological signs (e.g., rapid heartbeat, elevated blood pressure, perspiration or chills, nausea and vomiting). Large doses, especially when taken intrave-

nously, may produce confusion, incoherence, apprehension, transient paranoid ideas, increased sexual interest, and perceptual disturbances (e.g., a sensation of insects crawling on the skin). An hour or so after these effects subside, the user may experience tremulousness, anxiety, irritability, fatigue, and depression. The equivalent term in *DSM-5* is **stimulant intoxication**. See also **SUBSTANCE INTOXICATION**.

**cocaine intoxication delirium** in *DSM-IV-TR* and *DSM-5*, a reversible syndrome that develops over a short period of time (usually hours to days) following the heavy ingestion of cocaine. It includes disturbances of consciousness (e.g., reduced ability to focus, sustain, or shift attention), accompanied by changes in cognition (e.g., memory deficit, disorientation, or language disturbance) in excess of those usually associated with **COCAINE INTOXICATION**. See also **SUBSTANCE INTOXICATION DELIRIUM**.

**cocaine withdrawal** in *DSM-IV-TR*, a characteristic withdrawal syndrome that develops after cessation of (or reduction in) prolonged, heavy consumption of cocaine. The essential characteristic is depressed mood, sometimes severe, and there may also be fatigue, disturbed sleep, increased appetite, vivid and unpleasant dreams, or **PSYCHOMOTOR RETARDATION** or agitation, or all of these features. Marked withdrawal symptoms (see **CRASH**) often follow an episode of intense, high-dose use. The equivalent term in *DSM-5* is **stimulant withdrawal**. See also **SUBSTANCE WITHDRAWAL**.

**coccygeal nerve** see **SPINAL NERVE**.

**coccyx** *n.* (pl. **coccyges**) the last bone of the **SPINAL COLUMN** in apes and humans; it is formed by fusion of the caudal vertebrae. —**coccygeal** *adj.*

**cochlea** *n.* the bony fluid-filled part of the inner ear that is concerned with hearing. Shaped like a snail shell, it forms part of the bony **LABYRINTH**. Along its length run three canals: the **SCALA VESTIBULI**, **SCALA TYMPANI**, and **SCALA MEDIA**, or cochlear duct. The floor of the scala media is formed by the **BASILAR MEMBRANE**; the **ORGAN OF CORTI**, which rests on the basilar membrane, contains the **HAIR CELLS** that act as auditory receptor organs. —**cochlear** *adj.*

**cochlear aplasia** the clinical absence or defective development of the cochlea in the inner ear.

**cochlear duct** see **SCALA MEDIA**.

**cochlear echo** see **OTOACOUSTIC EMISSIONS**.

**cochlear emissions** see **OTOACOUSTIC EMISSIONS**.

**cochlear implant** an electronic device designed to enable individuals with complete deafness to hear and interpret some sounds, particularly those associated with speech. It consists of a microphone to detect sound, a headpiece to transmit sound, a processor to digitize sound, and a receiver to signal electrodes that are surgically implanted in the cochlea to stimulate the auditory nerve. In contrast to a hearing aid, which amplifies sound, it directly stimulates the auditory nerve.

**cochlear microphonic (CM)** an alternating-current electric potential generated by **HAIR CELLS** in the inner ear that has a waveform similar to that of the acoustic input. Also called **Wever-Bray effect**. [discovered in 1930 by U.S. psychologist Ernest Glen **WEVER** and U.S. otologist Charles W. **Bray** (1904–1982)]

**cochlear nerve** see **AUDITORY NERVE**.

**cochlear nucleus** a mass of cell bodies of second-order auditory neurons in the brainstem. The principal subdivisions are the ventral, dorsal, and anterior cochlear nuclei.

**cochlear recruitment** the **RECRUITMENT** of previously unstimulated neurons in the cochlea with an increase in stimulus intensity.

**Cochran Q test** a **NONPARAMETRIC** statistical procedure applied when each experimental unit (e.g., an individual participant) is observed under multiple conditions and the data can have only one of two outcomes (e.g., yes or no, pass or fail). The *Q* test is used to evaluate the equality of the outcomes under the different conditions. [William Gemmell **Cochran** (1909–1980), Scottish-born U.S. statistician]

**Cockayne syndrome** a hereditary disorder characterized by **MICROCEPHALY**, dwarfism, premature aging, severe photosensitivity, hearing loss, and moderate to severe learning delays. There are three types: **Type 1 (Type A)** is diagnosed during early childhood; **Type 2 (Type B)** is a more severe form in which growth and developmental abnormalities are present at birth; and **Type 3 (Type C)** is a milder form of the disorder. Individuals with Type 1 or 2 usually do not survive past childhood, whereas those with Type 3 live into adulthood. [reported in 1936 by Edward Alfred **Cockayne** (1880–1956), British physician]

**cocktail-party effect** the ability to attend to one of several speech streams while ignoring others, as when one is at a cocktail party. Research in this area in the early 1950s suggested that the unattended messages are not processed, but later findings indicated that meaning is identified in at least some cases. For example, the mention of one's name is processed even if it occurs in an unattended speech stream. See also **ATTENUATION THEORY**.

**cocktail-party universal** see **PSYCHOLOGICAL UNIVERSAL**.

**cocoa** *n.* a product derived from the cacao plant (*Theobroma cacao*) by roasting and grinding the beans (seeds) and removing the oils. The pharmacologically active ingredients are **THEOBROMINE** (typically about 1%–3% of dry weight) and **CAFFEINE**.

**coconsciousness** *n.* **1.** generally, experiences (e.g., perceptions, memories, thoughts, volitions) of which one is unaware but that exist in the fringe of consciousness. See **DIVIDED CONSCIOUSNESS**; **UNITY OF CONSCIOUSNESS**. **2.** in cases of **DISSOCIATIVE IDENTITY DISORDER**, a person's sense of having access to coexisting, distinct personalities. —**co-conscious** *adj.* [described by U.S. physician Morton Prince (1854–1929), who preferred *coconscious* to the term **SUBCONSCIOUS**]

**cocontraction** *n.* concurrent activity in the **AGONIST** and **ANTAGONIST** muscles controlling a joint.

**cocounseling** *n.* the counseling of peers by each other, as opposed to one-way, professionally led counseling. See **REEVALUATION COUNSELING**.

**COD** abbreviation for **CHANGE-OVER DELAY**.

**codability** *n.* the extent to which speakers of a language agree on a name for something. For example, the codability of a color is defined by how much agreement there is about a name for that color. —**codable** *adj.*

**codeine** *n.* a morphine-derived **OPIATE** that is used as an analgesic (alone or in combination with other analgesics, e.g., aspirin) and as a cough suppressant. It also induces

euphoria; however, its addiction potential is substantially less than that of heroin. See OPIOID ANALGESIC.

**code of ethics** a set of standards and principles of professional conduct, such as the *Ethical Principles of Psychologists and Code of Conduct* of the AMERICAN PSYCHOLOGICAL ASSOCIATION. See PROFESSIONAL ETHICS; STANDARDS OF PRACTICE.

**codependency** *n.* **1.** the state of being mutually reliant, for example, a relationship between two individuals who are emotionally dependent on one another. **2.** a dysfunctional relationship pattern in which an individual is psychologically dependent on (or controlled by) a person who has a pathological addiction (e.g., alcohol, gambling). —**codependent** *adj.*

**Co-Dependents Anonymous** a SELF-HELP GROUP for individuals who seek to improve problematic codependent relationships with others by using a TWELVE-STEP PROGRAM. See CODEPENDENCY.

**code switching** in sociolinguistics, the practice typical of individuals proficient in two or more REGISTERS, dialects, or languages who will switch from one to the other depending on the conversational context or in order to enhance linguistic or social meaning. See also DIGLOSSIA.

**code test** a test that requires participants to translate one set of symbols into another, for example, by writing *California* in numbers that stand for letters according to the code A = 3, B = 4, C = 5, and so on. Also called **coding test**; **symbol-substitution test**. See CRYPTARITHMETIC; CRYPTOGRAM. See also SYMBOL-DIGIT TEST.

**codification** *n.* **1.** the systematic arrangement of items in an organized fashion or the classification of items into identifiable categories. **2.** the conversion of data or other information into a code that can be translated by others. Also called **coding**.

**codification-of-rules stage** in Jean PIAGET's theory of moral development, the stage at which children of 11 and 12 years of age and older view rules as binding once they are agreed to, and games are seen as a system of interconnecting laws. Although the awareness of rules emerges at an earlier age, systematic adherence is not manifested until the codification-of-rules stage.

**coding** *n.* see CODIFICATION.

**coding test** see CODE TEST.

**codominance** *n.* a sharing of high rank in certain non-human animal populations. Wild macaques, baboons, and chimpanzees may control their groups through a few small males exhibiting codominance, rather than through a linear hierarchy of animal dominance. Coalitions may be formed by lower ranking individuals either to counter the influence of more dominant individuals or to overthrow them. Often these coalitions are short-lived as one coalition member assumes dominance over the others.

**codon** *n.* a unit of the GENETIC CODE consisting of three consecutive bases in a DNA or MESSENGER RNA sequence. Most codons specify a particular amino acid in protein synthesis, although some act as "start" or "stop" signals. Codons on a gene are numbered, and genetic mutations are described as occurring at particular codons or locations on the gene. Thus, a family might be described as having a mutation at codon 630 on EXON 11 of chromosome 10.

**coefficient** *n.* **1.** a quantity or value that serves as a measure of some property. For example, the CORRELATION COEF-

FICIENT is a measure of linear relatedness and a REGRESSION COEFFICIENT is a measure of the relationship between a predictor and a response variable. **2.** in algebra, a scalar that multiplies a variable in an equation. For example, in the equation  $y = bx$ , the scalar quantity  $b$  is said to be a coefficient.

**coefficient alpha** see CRONBACH'S ALPHA.

**coefficient of agreement** a numerical index that reflects the degree of agreement among a set of raters, judges, or instruments as to which of several categories a case belongs. Coefficients of agreement, such as COHEN'S KAPPA, are often corrected for chance agreement. Also called **agreement coefficient**.

**coefficient of alienation** (symbol:  $k$ ) a numerical index that reflects the amount of unexplained variance between two variables. It is a measure of the lack of relationship between the two variables. Also called **alienation coefficient**.

**coefficient of association** any of various quantities that index the relationship between two variables. For example, the Pearson PRODUCT-MOMENT CORRELATION COEFFICIENT might be used to measure a relationship involving linear associations, whereas the SPEARMAN CORRELATION COEFFICIENT might be used for one involving nonlinear associations.

**coefficient of concordance** (symbol:  $W$ ) a numerical index that reflects the degree to which the rankings of  $k$  conditions or objects by  $m$  raters are in agreement. Its value ranges from 0 (*no agreement*) to 1 (*perfect agreement*). Also called **Kendall's coefficient of concordance**; **Kendall's  $W$** .

**coefficient of contingency** (symbol:  $C$ ) a measure of the degree of association between two variables whose values are unordered categories. Its value ranges from 0 to 1, with 0 indicating that the two NOMINAL VARIABLES are independent of each other. Examples include CRAMÉR'S  $V$  and YULE'S  $Q$ . Also called **contingency coefficient**.

**coefficient of determination** (symbol:  $r^2$ ) a numerical index that reflects the proportion of variation in an outcome or response variable that is accounted for by its relationship with a predictor variable. More specifically, it is a measure of the percentage of variance in a DEPENDENT VARIABLE that is accounted for by its linear relationship with a single INDEPENDENT VARIABLE. Obtained by multiplying the value of the CORRELATION COEFFICIENT ( $r$ ) by itself, the coefficient of determination ranges in value from 0 to 1. Low values indicate the outcome is relatively unrelated to the predictor, whereas values closer to 1 indicate that the two variables are highly related. For example, if  $r = .30$ , then the squared correlation coefficient is  $.30^2 = .09$  and interpreted to mean 9% of the variance between the two variables is common or overlapping. Also called **determination coefficient**; **squared correlation coefficient**.

**coefficient of multiple determination** (symbol:  $R^2$ ) a numerical index that reflects the degree to which variation in a response or outcome variable (e.g., workers' incomes) is accounted for by its relationship with two or more predictor variables (e.g., age, gender, years of education). More specifically, it is a measure of the percentage of variance in a DEPENDENT VARIABLE that is accounted for by its relationship with a weighted linear combination of a set of INDEPENDENT VARIABLES. Obtained by multiplying the value of the MULTIPLE CORRELATION COEFFICIENT ( $R$ ) by it-

self, the coefficient of multiple determination ranges in value from 0 to 1. Low values indicate that the outcome is relatively unrelated to the predictors, whereas values closer to 1 indicate that the outcome and the predictors are highly related. For example, if  $R = .40$ , then the coefficient of multiple determination is  $.40^2 = .16$  and interpreted to mean 16% of the variance in outcome is explainable by the set of predictors. Also called **multiple correlation coefficient squared**; **squared multiple correlation coefficient**.

**coefficient of relatedness** the mean number of genes shared between two related individuals. Identical twins share 100% of their genes and have a coefficient of relatedness of 1. Between siblings and between parents and offspring, the coefficient of relatedness is .5; between uncles or aunts and nieces or nephews and between grandparents and grand-offspring, it is .25; and between first cousins, it is .125. Most studies of KIN RECOGNITION and kin-directed behavior show effects only with coefficients of relatedness of 0.25 and greater. See also INCLUSIVE FITNESS.

**coefficient of reliability** see RELIABILITY COEFFICIENT.

**coefficient of variation** a measure of variability in a set or distribution of values. It is determined by dividing the distribution's STANDARD DEVIATION by its MEAN. Also called **variation coefficient**.

**coefficient of visibility** a measure of the visibility of light of a particular wavelength. The coefficient of visibility for PHOTOPIC VISION is 1 at 555 nm, the wavelength at which humans have peak photopic sensitivity. Also called **luminosity coefficient**.

**coenesthesia** *n.* see CENESTHESIA.

**coeno-** (**coen-**; **cene-**; **ceno-**) *combining form* common or general.

**coenzyme** *n.* a nonprotein, organic compound that functions with the protein portion of an enzyme (an APOENZYME). Most enzymes fail to function without a specific coenzyme, which is often a vitamin.

**coerced confession** an accused person's admission of guilt elicited by the use of threats, torture, or promises. Also called **involuntary confession**.

**coercion** *n.* the process of attempting to influence another person through the use of threats, punishment, force, direct pressure, and other negative forms of power. —**coerce** *vb.* —**coercive** *adj.*

**coercive behavior** behavior designed to force others to do one's bidding, often masked as filial devotion or as marital or parental concern and sometimes expressed directly (e.g., "If you don't do what I say, I'll kill myself").

**coercive persuasion** **1.** systematic, intensive indoctrination of political or military prisoners, using such methods as threats, punishments, bribes, isolation, continuous interrogation, and repetitious "instruction." As a countermeasure, military personnel may be trained in methods of coercive persuasion resistance, which are designed to enable them to function and survive to the best of their ability under such adverse circumstances. Also called **thought reform**. See BRAINWASHING. **2.** broadly, a controlled program of social influence to bring about substantial changes in behavior and attitude in members of a group (e.g., military recruits, cult followers). [coined in 1961 by Swiss-born U.S. psychologist Edgar H. Schein (1928– )]

**coercive power** the capacity to compel others' compli-

ance through the use of force, including punishment or the threat of punishment.

**coercive treatment** see FORCED TREATMENT.

**coevolution** *n.* the concurrent evolution of two or more species that mutually affect each other's evolution.

**coexistence hypothesis** a theoretical explanation of the MISINFORMATION EFFECT stating that when misleading information is introduced after a witnessed event, it exists in competition with the original memory of the event. The false information is more accessible due to the RECENCY EFFECT and is more likely to be retrieved upon questioning, leading to erroneous reporting of the event. Compare ALTERATION HYPOTHESIS.

**cofacilitator** *n.* a therapist or student in training who assists in leading a therapy group. The cofacilitator may act as an observer or as one who balances the approach of the other group leader.

**coffee** *n.* a product derived from evergreen trees of the genus *Coffea*, which grow wild or are cultivated in tropical regions worldwide, including Brazil, Columbia, and Ethiopia. Of more than 100 species of *Coffea*, two are commercially important sources of coffee beans (seeds), used in beverages. They are *C. arabica* and *C. robusta*, whose beans contain significant concentrations (about 1% and 2%, respectively) of the stimulant CAFFEINE.

**Coffelt decision** see LANTERMAN DEVELOPMENTAL DISABILITIES ACT.

**configurative culture** a society or culture in which people learn chiefly from other people in the same age group, so that, for example, children learn mostly from children and young adults from young adults. Compare POSTFIGURATIVE CULTURE; PREFIGURATIVE CULTURE. [coined by U.S. anthropologist Margaret Mead (1901–1978)]

**Cogan's syndrome** a condition in which KERATITIS is associated with attacks of vertigo, tinnitus, and deafness. Pain in the eyes and reduced vision are also experienced. As the vertigo subsides (usually within days), the patient may become deaf or, in rare cases, blind. It is believed to be an autoimmune disorder. Also called **nonsyphilitic interstitial keratitis**. [described in 1945 by David Glendenning Cogan (1908–1993), U.S. physician]

**CogAT** acronym for COGNITIVE ABILITIES TEST.

**Cogentin** *n.* a trade name for BENZTROPINE.

**cogito ergo sum** I am thinking, therefore I exist. This Latin statement, made by René DESCARTES, forms the basis for his rejection of metaphysical SKEPTICISM, the doctrine that nothing can be proven to have a real existence: If he (i.e., Descartes) thinks, then he must exist, and if he exists, the doctrine is wrong, leaving open the possibility of the existence of other beings and things. See CARTESIAN SELF.

**cognate** *adj.* denoting words that have a common etymology, or origin, especially words in different languages that have similar form and meaning. For example, the words *picture* (English), *pintura* (Spanish), and *pittura* (Italian) are said to be cognate.

**Cognex** *n.* a trade name for TACRINE.

**cognition** *n.* **1.** all forms of knowing and awareness, such as perceiving, conceiving, remembering, reasoning, judging, imagining, and problem solving. Along with AFFECT and CONATION, it is one of the three traditionally iden-

tified components of mind. **2.** an individual percept, idea, memory, or the like. —**cognitional** *adj.* —**cognitive** *adj.*

**Cognitive Abilities Test (CogAT)** a group of multiple-choice tests measuring students' abstract reasoning and problem-solving abilities. It is divided into a primary edition (for kindergarten–Grade 2) and a multilevel edition (for Grades 3–12), which are further divided into three levels (K, 1, and 2) and eight levels (A–H), respectively. Each edition contains various subtests (e.g., sentence completion, equation building, and figure synthesis) in three groups: verbal, quantitative, and nonverbal. The CogAT, a revision of the now obsolete 1954 Lorge–Thorndike Intelligence Tests, was originally published in 1968; the most recent version is the CogAT Form 7, published in 2011. A British version of the Cognitive Abilities Test is also available. Designed for use with students ages 7½ to 17 years and over, it is known as the **CAT** and is now in its fourth edition (published in 2012). [developed by U.S. psychologists Robert L. Thorndike (1910–1990), Irving D. Lorge (1905–1961), Elizabeth P. Hagen (1915–2008), and David F. Lohman (1949– )]

**cognitive ability** the skills involved in performing the tasks associated with perception, learning, memory, understanding, awareness, reasoning, judgment, intuition, and language.

**cognitive–affective crossfire** a state of conflict between a person's cognitive responses to feedback about the self and his or her affective responses. In particular, an individual's thoughts (cognitions) may favor information that confirms his or her existing self-concept (see SELF-VERIFICATION MOTIVE), whereas the same individual's emotional reactions (affects) may favor pleasant or positive views of the self (see SELF-ENHANCEMENT MOTIVE).

**cognitive–affective personality system** a theoretical conception of personality structure as a complex system that features a large number of highly interconnected cognitions and emotional tendencies. [developed by Austrian-born U.S. personality psychologist Walter Mischel (1930– ) and Japanese-born U.S. psychologist Yuichi Shoda]

**cognitive aging** age-related changes in mental functioning (e.g., attention, memory, decision making) that occur across the lifespan.

**cognitive aid** any external representation that supports a mental process. Examples are reminders, checklists, and other prompts designed to prevent forgetting of critical tasks.

**cognitive analytic therapy** a time-limited, collaborative psychotherapy that emphasizes SCHEMAS and integrates principles and techniques from PSYCHODYNAMIC PSYCHOTHERAPY and COGNITIVE BEHAVIOR THERAPY. [developed in the 1980s by British psychiatrist Anthony Ryle (1927– )]

**cognitive appraisal theory** the theory that cognitive evaluation is involved in the generation of each and every emotion. Evaluation includes both a PRIMARY APPRAISAL and a SECONDARY APPRAISAL. This concept is elaborated in the COGNITIVE–MOTIVATIONAL–RELATIONAL THEORY, which recognizes that cognition is one of three simultaneously operating processes that contribute to the generation of any emotion. See also CORE RELATIONAL THEMES. [proposed by Richard S. LAZARUS]

**cognitive architecture** a hypothesized architecture

for human problem solving, usually represented as a component of a computer program. Examples include the PRODUCTION SYSTEM and SOAR. Empirical testing of cognitive phenomena is often used to establish the validity of aspects of this model.

**cognitive arousal theory of emotion** see SCHACHTER–SINGER THEORY.

**cognitive assessment** evaluation of such skills as learning, memory, judgment, and reasoning.

**Cognitive Assessment System (CAS)** an assessment battery that evaluates cognitive ability according to the PASS MODEL. Applicable to both children and adolescents, the test yields separate scores for planning, attention, simultaneous-processing abilities, and successive-processing abilities, as well as an overall score. Among its uses is the evaluation and assessment of learning disabilities as defined in the INDIVIDUALS WITH DISABILITIES EDUCATION ACT. [devised in the late 1980s by Canadian psychologist Jagannath Prasad (J. P.) Das (1931– ) and U.S. psychologist Jack A. Naglieri (1950– )]

**cognitive balance theory** see BALANCE THEORY.

**cognitive behavioral couples therapy** BEHAVIORAL COUPLES THERAPY that specifically focuses on the reciprocal influence of the partners' idiosyncratic patterns of ideas about each other and about couples in general. Interfering ideas are made conscious and explicit and are then altered to improve the couple's relationship using techniques modified from COGNITIVE BEHAVIOR THERAPY. Compare INTEGRATIVE BEHAVIORAL COUPLES THERAPY.

**cognitive behavioral group therapy** a type of group psychotherapy that uses techniques and methods of COGNITIVE BEHAVIOR THERAPY, such as modeling, restructuring thoughts, relaxation training, and communication skills training, to achieve behaviorally defined goals. Groups can include clients with diverse issues or can be limited to clients with specific problems (e.g., agoraphobia, anger).

**cognitive behavior modification** see COGNITIVE BEHAVIOR THERAPY.

**cognitive behavior theory** any theory deriving from general behavioral theory that considers cognitive or thought processes as significant mediators of behavioral change. A central feature in the theoretical formulations of the process is that people respond primarily to cognitive representations of their environments rather than to the environments themselves. The theory has led to popular therapeutic procedures that incorporate cognitive behavior techniques to effect changes in self-image as well as behaviors.

**cognitive behavior therapy (CBT)** a form of psychotherapy that integrates theories of cognition and learning with treatment techniques derived from COGNITIVE THERAPY and BEHAVIOR THERAPY. CBT assumes that cognitive, emotional, and behavioral variables are functionally interrelated. Treatment is aimed at identifying and modifying the client's maladaptive thought processes and problematic behaviors through COGNITIVE RESTRUCTURING and behavioral techniques to achieve change. Also called **cognitive behavior modification**; **cognitive behavioral therapy**.

**cognitive click** a moment in psychotherapy in which it becomes suddenly clear to the client that his or her thinking is incorrect and therefore that he or she must change his or her attitudes and beliefs.

**cognitive closure** 1. the state in which an individual recognizes that he or she has achieved understanding of something. 2. the final stage in figuratively seeing the total picture and how all pieces of it fit together.

**cognitive complexity** the state or quality of a thought process that involves numerous constructs, with many interrelationships among them. Such processing is often experienced as difficult or effortful. See also CONCEPTUAL COMPLEXITY.

**cognitive complexity and control theory (CCC theory)** the proposal that the ability to follow rules depends on the development of conscious awareness and self-control and is therefore age related. In general, a 4-year-old child can solve problems requiring the application of more complex rules than he or she could at age 3. [proposed by Canadian psychologist Philip D. Zelazo (1966– ) and U.S. psychologist Douglas Frye (1952– )]

**cognitive conditioning** a process in which a stimulus is repeatedly paired with an imagined or anticipated response or behavior. Cognitive conditioning has been used as a therapeutic technique, in which case the stimulus is typically aversive. For example, the client imagines that he or she is smoking a cigarette and gives himself or herself a pinch; the procedure is repeated until the thought produces the effect of discouraging the behavior. See also COGNITIVE REHEARSAL.

**cognitive consistency** the extent to which one cognitive element follows from or is implied by another cognitive element. See also COGNITIVE CONSONANCE; COGNITIVE DISSONANCE.

**cognitive consistency theory** any of a broad class of theories postulating that attitude change is a result of the desire to maintain consistency among elements of a cognitive system. See also BALANCE THEORY; COGNITIVE DISSONANCE THEORY; CONGRUITY THEORY.

**cognitive consonance** in COGNITIVE DISSONANCE THEORY, a situation in which two cognitive elements are consistent with one another, that is, one cognitive element follows from or is implied by the other.

**cognitive construct** see CONSTRUCT.

**cognitive control** the set of processes that organize, plan, and schedule mental operations. See also CONTROL PROCESSES; EXECUTIVE.

**cognitive coping** any strategy in which a person uses mental activity to manage a stressful event or situation. A variety of different forms exist, such as putting the experience into perspective, seeking to understand the causes of the situation, thinking about steps to resolve the situation, thinking about pleasant experiences instead of the current difficulty (positive refocusing), redefining the situation to emphasize potential benefits (positive reappraisal), exaggerating the negative consequences of the event (catastrophizing), blaming oneself or others for the occurrence of the event, dwelling on the negative emotions associated with the event (rumination), and minimizing the situation or its impact (cognitive avoidance). Some of these strategies (e.g., positive reappraisal, positive refocusing, putting things into perspective) generally are considered more effective than others, being associated with more positive psychological outcomes. Compare BEHAVIORAL COPING.

**cognitive decline** reduction in one or more cognitive abilities, such as memory, awareness, judgment, and mental acuity, across the adult lifespan. The presence and de-

gree of decline varies with the cognitive ability being measured: Fluid abilities often show greater declines than crystallized abilities (see CATTELL–HORN THEORY OF INTELLIGENCE). Cognitive decline is a part of normal healthy aging, but a severe decline is not normative and could be symptomatic of disease: It is the primary symptom of disease-induced dementias, such as ALZHEIMER'S DISEASE.

**cognitive deconstruction** a mental state characterized by lack of emotion, the absence of any sense of future, a concentration on the here and now, and a focus on concrete sensation rather than abstract thought. People may cultivate this state to escape from emotional distress or troublesome thoughts. [first described by U.S. social psychologist Roy Baumeister (1953– )]

**cognitive deficit** performance on intellectual and other mentally based tasks (e.g., those involving memory), as measured by individually administered standardized assessments (verbal and nonverbal cognitive measures), that is substantially below that expected given the individual's chronological age and formal educational experience.

**cognitive derailment** the often abrupt shifting of thoughts or associations so that they do not follow one another in a logical sequence. Cognitive derailment is a symptom of schizophrenia; the term is essentially equivalent to THOUGHT DERAILMENT. See also COGNITIVE SLIPPAGE.

**cognitive development** the growth and maturation of thinking processes of all kinds, including perceiving, remembering, concept formation, problem solving, imagining, and reasoning. Various **cognitive developmental theories** exist that attempt to explain the mechanisms underlying such growth and maturation. Explanations may be in terms of stages of development in which the changes in thinking are relatively abrupt and discontinuous, or the changes may be viewed as occurring gradually and continuously over time.

**cognitive discrimination** the ability to make distinctions between concepts and to distinguish between examples and nonexamples of a particular concept.

**cognitive disorder** any disorder that involves impairment of the EXECUTIVE FUNCTIONS, such as organization, regulation, and perception. Impairments in these fundamental processes can affect performance in many cognitive areas, including processing speed, reasoning, planning, judgment, decision making, emotional engagement and regulation, perseveration, impulse control, awareness, attention, language, learning, memory, and timing.

**cognitive dissonance** an unpleasant psychological state resulting from inconsistency between two or more elements in a cognitive system. It is presumed to involve a state of heightened arousal and to have characteristics similar to physiological drives (e.g., hunger). Thus, cognitive dissonance creates a motivational drive in an individual to reduce the dissonance (see DISSONANCE REDUCTION). See also COGNITIVE CONSONANCE. [first described by Leon FESTINGER]

**cognitive dissonance theory** a theory proposing that people have a fundamental motivation to maintain consistency among elements in their cognitive systems. When inconsistency occurs, people experience an unpleasant psychological state that motivates them to reduce the dissonance in a variety of ways (see DISSONANCE REDUCTION). Several variants of this theory have also been proposed, including the NEW-LOOK THEORY and SELF-CONSISTENCY PERSPECTIVE. Alternative theories have been



proposed as well, such as SELF-AFFIRMATION THEORY and SELF-PERCEPTION THEORY. See also COGNITIVE CONSONANCE. [first proposed by Leon FESTINGER]

**cognitive distortion** faulty or inaccurate thinking, perception, or belief. An example is OVERGENERALIZATION. Cognitive distortion is a normal psychological process that can occur in all people to a greater or lesser extent.

**cognitive domain** see BLOOM'S TAXONOMY.

**cognitive dysfunction** any disruption in mental activities associated with thinking, knowing, and remembering.

**cognitive electrophysiology** see ELECTROENCEPHALOGRAPHY.

**Cognitive Emotion Regulation Questionnaire (CERQ)** a 36-item self-report inventory that measures the extent to which adults and adolescents consciously use COGNITIVE COPING strategies to manage emotions associated with negative life events. On a 5-point LIKERT SCALE ranging from *almost never* to *almost always*, participants rate statements that reflect one of nine different cognitive coping strategies (e.g., positive reappraisal, self-blame, rumination). The CERQ is utilized both in research to study relationships between cognitive processes and mental health and in clinical diagnosis to identify individuals with unusual patterns of strategy use that may be indicative of depression and other pathology. A simplified version of the measure for children ages 9 to 11 years (**CERQ-k**) and an abbreviated 18-item adult version (**CERQ-short**) also exist. [developed in 2001 by Dutch psychologists Nadia Garnefski, Vivian Kraaij, and Philip Spinhoven (1954– )]

**cognitive enhancer** a type of drug used to improve cognitive function, usually in the treatment of progressive dementias such as Alzheimer's disease but also of cognitive dysfunction due to traumatic brain injury. Cognitive enhancers do not reverse the course of the dementia but are reported to slow its progress in mild to moderate forms. Many of these drugs work by inhibiting the activity of acetylcholinesterase in the central nervous system, thereby counteracting the disruption of cholinergic neurotransmission observed in patients with Alzheimer's disease. Other drugs use different mechanisms for improving cognitive performance in patients with Alzheimer's disease, including NMDA RECEPTOR antagonism and potentially the prevention of BETA-AMYLOID plaque formation in the brain. Current cognitive enhancers include DONEPEZIL, RIVASTIGMINE, and GALANTAMINE. Also called **memory-enhancing drug**; and, formerly, **nootropic**.

**cognitive ergonomics** a specialty area of ERGONOMICS that seeks to understand the cognitive processes and representations involved in human performance. Cognitive ergonomics studies the combined effect of information-processing characteristics, task constraints, and task environment on human performance and applies the results of such studies to the design and evaluation of work systems.

**cognitive ethology** the study of mental experiences, including CONSCIOUSNESS and INTENTIONALITY, in nonhuman animals and of the influence of these experiences on the animals' behavior as they interact with their natural environment. Whether, and which, animals actually possess consciousness and intentionality remains a subject of controversy. [proposed in 1978 by U.S. zoologist Donald Redfield Griffin (1915–2003)]

**cognitive evaluation theory** a theory postulating

that an individual's performance will improve or decline depending on his or her attitude about the reward for good performance, that is, about whether it is conferred as a true reward for effective performance or as a means by which the grantor of the reward asserts control over the performer. [posited by Leon FESTINGER]

**cognitive–evaluative consistency** the degree to which the cognitive basis of an attitude (see BASES OF AN ATTITUDE) and the overall attitude are evaluatively consistent with one another. For example, if the cognitive basis is extremely positive and the overall attitude is extremely negative, cognitive–evaluative consistency is low. See also AFFECTIVE–COGNITIVE CONSISTENCY; AFFECTIVE–EVALUATIVE CONSISTENCY.

**cognitive faculty** a specific aspect or domain of mental function, such as language, object recognition, or face perception. See FACULTY PSYCHOLOGY.

**cognitive flexibility** the capacity for objective appraisal and appropriately flexible action. Cognitive flexibility also implies adaptability and fair-mindedness.

**cognitive flooding** a method used in psychotherapy, mainly to treat phobias, in which the client is encouraged to focus on negative or aversive mental images to generate emotional states similar to those experienced when faced with a feared object or situation. The simulated fear is then seen to be manageable and associated with images that will reduce the original fear. See also IMPLOSIVE THERAPY; PROLONGED EXPOSURE THERAPY.

**cognitive functioning** the performance of the mental processes of perception, learning, memory, understanding, awareness, reasoning, judgment, intuition, and language.

**cognitive generalization** 1. the ability to apply knowledge, concepts, or cognitive skills acquired in one context or domain to problems in another. See GENERAL TRANSFER. 2. a general principle of human cognition, such as association or categorization, that applies across cognitive faculties or domains. In the theory of COGNITIVE GRAMMAR, such generalities are held to underlie the construction of meaning in language.

**cognitive grammar** in linguistics and psycholinguistics, a theory of grammar in which the constituent units are derived from general cognitive principles, such as associative memory, categorization, and so on, rather than from autonomous linguistic principles. This assumption that language is an integral part of cognition runs counter to the theory of the TASK SPECIFICITY OF LANGUAGE. [introduced in 1987 by U.S. linguist Ronald W. Langacker (1942– )]

**cognitive heuristic** see HEURISTIC.

**cognitive hypothesis testing** problem-solving behavior in which the individual derives a set of rules (hypotheses) that are then sampled and tested until the one rule is discovered that consistently results in correct solutions to the problem.

**cognitive impairment** any impairment in perceptual, learning, memory, linguistic, or thinking abilities. Multiple significant cognitive impairments in memory plus one or more other cognitive defects are characteristic of DEMENTIA. See also MILD COGNITIVE IMPAIRMENT.

**cognitive impenetrability** the condition of certain processes (e.g., visual processes, reflexes) that are characterized as free of influence from prior conceptual or intel-

lectual knowledge and are thought to proceed with a minimum of conscious control. Compare **COGNITIVE PENETRABILITY**. [coined by Canadian cognitive scientist and philosopher Zenon W. Pylyshyn (1937– )]

**cognitive intelligence** one's abilities to learn, remember, reason, solve problems, and make sound judgments, particularly as contrasted with **EMOTIONAL INTELLIGENCE**.

**cognitive interdependence** the tendency of individuals in close, committed relationships to think of themselves less in individual terms and more as partners in a **DYADIC RELATIONSHIP**. For example, cognitive interdependence leads people to increase their use of plural pronouns (*we, us, our*) while decreasing their use of singular pronouns (*I, me, my*). Cognitive interdependence is thought to reflect mental processes that stem from the meshing of perspectives, goals, and identities that characterizes committed relationships and is most commonly observed in romantic relationships such as marriage.

**cognitive interview** a structured technique developed for enhancing eyewitness recollection in criminal investigation. It relies on principles of cognition and memory retrieval, such as **CONTEXT REINSTATEMENT**, reporting everything (however seemingly irrelevant), recalling events in different order, and changing perspectives. See also **AIDED RECALL**. [developed in 1984 by U.S. psychologists R. Edward Geiselman (1949– ), Ronald P. Fisher (1947– ), and colleagues]

**cognitive learning theory** any theory postulating that learning requires central constructs and new ways of perceiving events (see **S–S LEARNING MODEL**). Cognitive learning theories are usually contrasted with behavioral learning theories, which suggest that behaviors or responses are acquired through experience (see **S–R PSYCHOLOGY**).

**cognitive load** the relative demand imposed by a particular task, in terms of mental resources required. Also called **mental load**; **mental workload**. See also **COGNITIVE OVERLOAD**; **MENTAL EFFORT**.

**cognitively based persuasion** an active attempt to change an attitude primarily by altering beliefs regarding attributes associated with the **ATTITUDE OBJECT**. Also called **rationally based persuasion**. See also **BASES OF AN ATTITUDE**. Compare **AFFECTIVELY BASED PERSUASION**.

**cognitively guided instruction** an educational approach in which teachers make decisions about their instruction based on the knowledge and performance level of their students. Students are encouraged to create their own solutions to problems rather than rely on a set of preceived, teacher-directed procedures.

**cognitive map** a mental understanding of an environment, formed through trial and error as well as observation. The concept is based on the assumption that an individual seeks and collects contextual clues, such as environmental relationships, rather than acting as a passive receptor of information needed to achieve a goal. Human beings and other animals have well-developed cognitive maps that contain spatial information enabling them to orient themselves and find their way in the real world (see **SPATIAL COGNITION**); symbolism and meaning are also contained in such maps. See also **ENVIRONMENTAL COGNITION**; **LANDMARK**; **MENTAL MAP**. [introduced by Edward C. TOLMAN]

**cognitive miser** anyone who seeks out quick, adequate

solutions to problems rather than slow, careful ones. Despite this negative denotation, the term describes a general tendency among all people: That is, as a rule people tend to use mental shortcuts in making judgments and drawing inferences.

**cognitive model** a theoretical view of thought and mental operations, which provides explanations for observed phenomena and makes predictions about an unknown future. People are continually creating and accessing internal representations (models) of what they are experiencing in the world for the purposes of perception, comprehension, and behavior selection (action).

**cognitive–motivational–relational theory** an extension of the **COGNITIVE APPRAISAL THEORY** that puts equal emphasis on three processes involved in the generation of an emotion: (a) appraisal (the cognitive process); (b) the central role of the individual's strivings, intentions, and goals (the motivational process); and (c) the relevance of external events to these strivings (the relational process). [proposed by Richard S. LAZARUS]

**cognitive narrowing** focusing on a single aspect of a situation or object rather than on the whole.

**cognitive neuropsychology** the study of the structure and function of the brain as it relates to perception, reasoning, remembering, and all other forms of knowing and awareness. Cognitive neuropsychology focuses on examining the effects of brain damage on thought processes—typically through the use of single-case or small-group designs—so as to construct models of normal cognitive functioning.

**cognitive neuroscience** a branch of **NEUROSCIENCE** and **BIOLOGICAL PSYCHOLOGY** that focuses on the neural mechanisms of cognition. Although overlapping with the study of the mind in **COGNITIVE PSYCHOLOGY**, cognitive neuroscience, with its grounding in such areas as experimental psychology, neurobiology, **BRAIN IMAGING** techniques, physics, and mathematics, is more concerned with the specific neural mechanisms by which mental processes occur in the brain; the two perspectives continually exert significant influence on each other. Also called **neurocognition**.

**cognitive operation** the manipulation of **MENTAL REPRESENTATIONS**, notably by identifying, organizing, and elaborating such representations or retrieving them from memory. See also **COGNITIVE PROCESS**; **OPERATION**; **SYMBOLIC PROCESS**; **THINKING**.

**cognitive overload** the situation in which the demands placed on a person by mental work (the **COGNITIVE LOAD**) are greater than the person's mental abilities can cope with. See also **COMMUNICATION OVERLOAD**; **INFORMATION OVERLOAD**; **SENSORY OVERLOAD**; **STIMULUS OVERLOAD**.

**cognitive penetrability** the capacity of a mental process to be influenced by an individual's knowledge, beliefs, or goals. Compare **COGNITIVE IMPENETRABILITY**.

**cognitive plasticity** the capacity for change (e.g., improved performance) in mental processes such as learning and memory in response to a primary experience (e.g., practice).

**cognitive problem-solving skills training** see **PROBLEM-SOLVING SKILLS TRAINING**.

**cognitive process** any of the mental functions assumed to be involved in the acquisition, storage, interpretation,

manipulation, transformation, and use of knowledge. These processes encompass such activities as attention, perception, learning, and problem solving and are commonly understood through several basic theories, including the SERIAL PROCESSING approach, the PARALLEL PROCESSING approach, and a combination theory, which assumes that cognitive processes are both serial and parallel, depending on the demands of the task. This term is often used synonymously with MENTAL PROCESS.

**cognitive processing therapy (CPT)** a form of COGNITIVE BEHAVIOR THERAPY originally used with victims of rape or sexual trauma and later applied to those with posttraumatic stress disorder resulting from any trauma. CPT emphasizes cognitive strategies to help people alter erroneous thinking that has emerged because of a traumatic event. Practitioners may work with clients on false beliefs that the world is no longer safe, for example, or that they are incompetent because they “let” the traumatic event happen to them. [developed by U.S. psychologists Patricia A. Resick, Candice Monson, and Kathleen Chard]

**cognitive psychology** the branch of psychology that explores the operation of mental processes related to perceiving, attending, thinking, language, and memory, mainly through inferences from behavior. The cognitive approach, which developed in the 1940s and 1950s, diverged sharply from contemporary BEHAVIORISM in (a) emphasizing unseen knowledge processes instead of directly observable behaviors and (b) arguing that the relationship between stimulus and response was complex and mediated rather than simple and direct. Its concentration on the higher mental processes also contrasted with the focus on instincts and other unconscious forces typical of psychoanalysis. More recently, cognitive psychology has been influenced by approaches to INFORMATION PROCESSING and INFORMATION THEORY developed in computer science and ARTIFICIAL INTELLIGENCE. See also COGNITIVE SCIENCE.

**cognitive rehabilitation** specific REHABILITATION interventions designed to address problems in mental processing that are associated with chronic illness, brain injury, or trauma, such as stroke. Cognitive rehabilitation may include relearning specific mental abilities, strengthening unaffected abilities, or substituting new abilities to compensate for lost ones.

**cognitive rehearsal** a therapeutic technique in which a client imagines those situations that tend to produce anxiety or self-defeating behavior and then repeats positive coping statements or mentally rehearses more appropriate behavior.

**cognitive remediation** an intervention to improve neuropsychological function, such as in attention or memory, that has been impaired due to traumatic brain injury, stroke, severe mental illness (e.g., schizophrenia), or other conditions. See COGNITIVE REHABILITATION.

**cognitive reserve** a capacity of the adult brain to sustain the effects of disease or injury without manifesting clinical symptoms of dysfunction and to draw on the active acquisition and differential use of numerous sophisticated cognitive strategies to process information, solve problems, and perform tasks. In other words, individuals with high cognitive reserve have developed a variety of efficient NEURAL NETWORKS and NEURAL PATHWAYS to cope with brain pathology such that they can have a greater degree of underlying neurological damage than individuals with low

cognitive reserve before becoming symptomatic. The size of this hypothesized supply of mental abilities and mechanisms, and thus the degree of protection against dementia and other neurological disorders it conveys, is believed to depend on the intellectual challenges a person experiences throughout life: More mental stimulation creates more reserve.

Possible mechanisms by which this might occur include the following: (a) Knowledge can enhance memory in the form of richer and more elaborate encoding and more effective retrieval cues facilitated by a superior organizational structuring of information; (b) knowledge can result in easier access to relevant information and better organized representations of the problem, resulting in enhanced problem-solving skills; (c) knowledge of past consequences of various alternatives can provide an effortless means of making accurate predictions regarding future consequences; (d) knowledge can enable reliance on previously compiled efficient algorithms, rather than on slow and controlled processes; and (e) knowledge of prior solutions to familiar problems can reduce online processing requirements. Commonly used indirect measures of cognitive reserve include number of years of education, literacy level, vocabulary knowledge, occupational complexity, estimated premorbid intelligence, and frequency and range of participation in mentally stimulating leisure activities (e.g., reading, writing, doing crossword puzzles, playing board or card games, playing music) or complex mental activities generally.

It is important to distinguish cognitive reserve from the closely related BRAIN RESERVE, which posits that brain-based anatomical differences among people convey differential abilities to tolerate neuronal damage or loss before developing cognitive impairment. Despite the different emphases of the two terms, many researchers use them interchangeably.

**cognitive resource theory 1.** a general theoretical framework that assumes that individuals respond to problems, challenges, and choices by actively encoding, processing, and recalling needed information, but that these mental activities place demands on cognitive capacity such that heavy loads in one cognitive domain will lead to reductions in activity in another. **2.** a conceptual analysis of leadership effectiveness that assumes that team performance depends on a combination of the leader’s cognitive resources (e.g., intelligence, skills, experience) and the particular group setting, especially with regard to the level of interpersonal conflict and stress in the group. This model was developed from the CONTINGENCY THEORY OF LEADERSHIP to give greater weight to the traits of individual leaders. See LEADERSHIP THEORIES. [developed in 1987 by Fred FIEDLER and his colleagues]

**cognitive response theory** a theory postulating that attitude change occurs primarily as a function of people’s evaluative responses to attitude-relevant information. Such responses include inferences generated about the information, assessments of its validity, and other evaluative reactions that may or may not be cognitive in nature (e.g., emotional responses). This theory holds that it is primarily the number and VALENCE of these responses, rather than memory for the information itself, that determines the magnitude and duration of attitude change. See also MESSAGE-LEARNING APPROACH.

**cognitive restructuring** a technique used in COGNITIVE THERAPY and COGNITIVE BEHAVIOR THERAPY to help the client identify his or her self-defeating beliefs or cogni-

tive distortions, refute them, and then modify them so that they are adaptive and reasonable.

**cognitive schema** see SCHEMA.

**cognitive science** an interdisciplinary approach to understanding the mind and mental processes that combines aspects of cognitive psychology, philosophy of mind, epistemology, neuroscience, anthropology, psycholinguistics, and computer science.

**cognitive self-guidance system** the use of private, self-directed speech to guide problem-solving behavior. [proposed by Lev VYGOTSKY]

**cognitive self-management** the use of SELF-TALK, imagery, or both to direct one's behavior in demanding or stressful situations.

**cognitive set** the predetermined way an individual construes a situation, which is based on a group of concepts, related to the self and other things, that determines an individual's view of the world and influences his or her behavior.

**cognitive sign principle** the belief that, through learning, stimuli come to signal outcomes or events in the environment (see S-S LEARNING MODEL). Edward C. TOLMAN offered cognitive sign learning as an alternative to the ideas of other behavioral theorists, such as Clark L. HULL, who postulated that stimuli become directly associated with responses (see S-R LEARNING MODEL).

**cognitive slippage** a mild form of disconnected thought processes or LOOSENING OF ASSOCIATIONS. Cognitive slippage may be seen in patients with a range of physical and mental disorders; it is a common characteristic of individuals with schizophrenia. [coined by Paul Everett MEEHL]

**cognitive-social learning theory** see SOCIAL-COGNITIVE THEORY.

**cognitive specificity hypothesis** the proposition that specific feeling states, such as depression and anxiety, are linked to particular kinds of AUTOMATIC THOUGHTS. [proposed by Aaron T. BECK]

**cognitive stage** in some theories of cognitive development, especially that of Jean PIAGET, a plane of cognition that is characterized by a particular, qualitatively different level of thinking than earlier or later stages.

**cognitive strategy** any predetermined plan to control the process and content of thought. In sport psychology, for example, such strategies involve use of the SELF-TALK dialogue to assist athletes to keep focused, energized, confident, and "in the zone."

**cognitive structure 1.** a mental framework, pattern, or SCHEMA that maintains and organizes a body of information relating to a particular topic. When a need arises for the cognitive structure, as in a college test, the individual is thought to engage in a memory search in which the stored cognitive structure is retrieved and applied to the present requirements. **2.** a unified structure of facts, beliefs, and attitudes about the world or society. See COGNITIVE MAP; CONCEPTUAL SYSTEM; FRAME.

**cognitive style** a person's characteristic mode of perceiving, thinking, remembering, and problem solving. Cognitive styles might differ in preferred elements or activities, such as group work versus working individually, more structured versus less defined activities, or visual versus

verbal ENCODING. Other dimensions along which cognitive styles vary include REFLECTION-IMPULSIVITY, ABSTRACT ATTITUDE versus CONCRETE ATTITUDE, and FIELD DEPENDENCE versus FIELD INDEPENDENCE. The term is also commonly used to refer to the idea that people differ with respect to the mode of learning (e.g., instruction, study) that is most effective for them. Indeed, many use the term **learning style** interchangeably with cognitive style, whereas others use the former more specifically to mean a person's characteristic cognitive, affective, and psychological behaviors that influence his or her preferred instructional methods and interactions with the learning environment. Also called **thinking style**. See also LEARNING TYPES; THEORY OF MENTAL SELF-GOVERNMENT.

**cognitive system** a set of cognitions that are organized into a meaningful complex with implied or stated relationships between them. See also COMPLEX OF IDEAS.

**cognitive task analysis** the use of descriptive and analytical techniques to identify the knowledge and decision-making processes required to perform a given task proficiently.

**cognitive theory** any theory of mind that focuses on mental activities, such as perceiving, attending, thinking, remembering, evaluating, planning, language, and creativity, especially a theory that suggests a model for the various processes involved.

**cognitive theory of leadership** any of various models that define and explain leadership in terms of the perceptual, intellectual, and mental processes of both leaders and those they lead. See also LEADERSHIP THEORIES.

**cognitive therapy (CT)** a form of psychotherapy based on the concept that emotional and behavioral problems in an individual are, at least in part, the result of maladaptive or faulty ways of thinking and distorted attitudes toward oneself and others. The objective of the therapy is to identify these faulty cognitions and replace them with more adaptive ones, a process known as COGNITIVE RESTRUCTURING. The therapist takes the role of an active guide who attempts to make the client aware of these distorted thinking patterns and who helps the client correct and revise his or her perceptions and attitudes by citing evidence to the contrary or by eliciting it from the client. See also COGNITIVE BEHAVIOR THERAPY. Also called **Beck therapy**. [developed by Aaron T. BECK]

**cognitive triad** a set of three beliefs thought to characterize MAJOR DEPRESSIVE EPISODES. These are negative beliefs about the self, the world, and the future. Also called **negative triad**. [proposed in 1976 by Aaron T. BECK]

**cognitive tunneling** a psychological state, typical of people concentrating on a demanding task or operating under conditions of stress, in which a single, narrowly defined category of information is attended to and processed. Cognitive tunneling involves the processing of highly critical task-relevant information, with limited or no processing of secondary information that may also be important to the task. For example, cognitive tunneling occurs when a pilot focuses on the HEAD-UP DISPLAYS without also scanning out the windows of the plane. Compare SOCIAL TUNNELING.

**cognitive unconscious** unreportable mental processes such as implicit percepts, memories, and thoughts. There are many sources of evidence for a cognitive unconscious, including regularities of behavior due to habit or AUTOMATICITY, inferred grammatical rules, the details of sensori-

motor control, and implicit knowledge after brain damage. It differs from the psychoanalytic notion of the dynamic UNCONSCIOUS, which involves material that is excluded from consciousness to avoid anxiety, shame, or guilt. Compare EMOTIONAL UNCONSCIOUS. See also TACIT KNOWLEDGE. [proposed by U.S. cognitive psychologist John F. Kihlstrom (1948– )]

**cognitive vulnerability** a set of beliefs or attitudes thought to make a person vulnerable to emotional disorders such as depression and anxiety. Examples include PERFECTIONISM, DEPENDENCE, and SOCIOTROPY.

**cognitive walkthrough method** in ergonomics, a method of assessing the usability of a product or design in which several evaluators, representing the targeted user group, perform its various functions while discussing and identifying or anticipating problems arising from flawed design.

**cognitive well-being** see SUBJECTIVE WELL-BEING.

**cognitivism** *n.* adherence to the principles of COGNITIVE PSYCHOLOGY, especially as opposed to those of BEHAVIORISM.

**cognitivist** **1.** *n.* a theorist concerned primarily with describing either intellectual development (e.g., Jean PIAGET, Jerome Seymour BRUNER) or early language behavior (e.g., Roger BROWN). **2.** *adj.* describing a perspective or approach that is based on COGNITIVISM.

**cognize** *vb.* to know or become aware of. —**cognizance** *n.* —**cognizant** *adj.*

**cogwheel rigidity** MUSCULAR RIGIDITY that produces a ratcheted resistance to passive movement of the limbs of people who have Parkinson's disease. It may also be seen as the side effect of medication, especially antipsychotic drugs such as the PHENOTHIAZINES. Also called **cogwheeling**. Compare LEAD-PIPE RIGIDITY.

**cohabitation** **1.** *n.* the state or condition of living together as sexual and domestic partners without being married. See COMMON-LAW MARRIAGE; DOMESTIC PARTNERSHIP. **2.** broadly, people or nonhuman animals sharing living quarters or a habitat. —**cohabit** *vb.* —**cohabitee** *n.*

**Cohen's *d*** a measure of EFFECT SIZE based on the standardized difference between two means: It indicates the number of STANDARD DEVIATION units by which the means of two data sets differ. For example, a mentoring intervention associated with a Cohen's *d* of +0.25 indicates an increase of 0.25 standard deviation units for the average child who received mentoring relative to the average child who did not receive mentoring. The metric is used to represent effect sizes in META-ANALYSIS as well as in the determination of POWER, with values of 0.20, 0.50, and 0.80 representing small, medium, and large effect sizes, respectively. See also GLASS'S *D*. [Jacob Cohen (1923–1998), U.S. psychologist and statistician]

**Cohen's kappa** (symbol:  $\kappa$ ) a numerical index that reflects the degree of agreement between two raters or rating systems classifying data into mutually exclusive categories, corrected for the level of agreement expected by chance alone. Values range from 0 (*no agreement*) to 1 (*perfect agreement*), with kappas below .40 generally considered poor, .40 to .75 considered fair to good, and more than .75 considered excellent. In accounting for chance, Cohen's kappa avoids overestimating the true level of agreement as might occur through simply determining the number of times

that two raters agree relative to the total number of ratings. [Jacob Cohen]

**coherence** **1.** meaningful interconnections between distinct psychological entities. For example, a system of independent beliefs that is logically consistent from one belief to another would be described as **coherent**. **2.** a measure of the extent to which energy waves (such as light waves) are correlated between two times (**temporal coherence**) or two points (**spatial coherence**). Beams of such waves that are in phase, or have a constant phase relationship, are said to be coherent. **3.** in imagery, the tendency for an image to be influenced by its background.

**cohesion** *n.* see GROUP COHESION.

**cohort** *n.* a group of individuals who share a similar characteristic or experience. The term usually refers to an **age** (or **birth**) **cohort**, that is, a group of individuals who are born in the same year and thus of similar age.

**cohort analysis** a statistical procedure to assess the effects attributed to members of a group sharing a particular characteristic, experience, or event. In other words, it is the evaluation of data obtained from studies involving COHORTS, as may be the case in LONGITUDINAL DESIGNS, for example.

**cohort effect** any outcome associated with being a member of a group whose members all undergo similar experiences. Cohort effects may be difficult to separate from AGE EFFECTS and PERIOD EFFECTS in research.

**cohort sampling** a method of sampling data in which one or more groups sharing a similar characteristic, such as year of birth, are identified and observed.

**cohort-sequential design** an experimental design in which multiple measures are taken over a period of time from two or more groups of different ages (birth COHORTS). If, for instance, individuals ranging in age from 5 to 10 years are sampled and then the members of each age group are studied for a 5-year period, the resulting data would span 15 years of development. Such studies essentially are a combination of a LONGITUDINAL DESIGN and a CROSS-SECTIONAL DESIGN. Also called **accelerated longitudinal design**.

**cohort study** see LONGITUDINAL DESIGN.

**coital anorgasmia** failure of a woman to reach orgasm during penile–vaginal intercourse. Studies show that roughly half of women do not have coital orgasms in the absence of concurrent clitoral stimulation. Sex therapists do not consider this a dysfunction; if the woman can have orgasm with her partner in other ways, and enjoys intercourse, there is no requirement that both happen simultaneously.

**coitus** *n.* an act of sexual union, usually the insertion of the penis into the vagina followed by ejaculation. Variations include, among others, **coitus a tergo**, in which the penis is inserted from the rear, and **coitus inter femora** (INTERFEMORAL SEX), in which the penis is inserted between the pressed thighs of the partner. Also called **coition**; **intercourse**; **sexual intercourse**. See also ANAL INTERCOURSE; CAREZZA; COPULATION. —**coital** *adj.*

**coitus analis** see ANAL INTERCOURSE.

**coitus a tergo** see COITUS.

**coitus in ano** see ANAL INTERCOURSE.

**coitus inter femora** see COITUS; INTERFEMORAL SEX.

**coitus interruptus** the withdrawal of the penis during intercourse, prior to orgasm, with orgasm occurring external to the vagina. This is done mainly to reduce the likelihood of conception but is not very effective, as some semen is often released prior to orgasm.

**coitus intra mammas** coitus in which the penis is inserted between the breasts of the female.

**coitus prolongatus** see CAREZZA.

**coitus reservatus** sexual intercourse in which the man suppresses the ejaculation of semen. Also called **male continence**.

**coke** *n.* a common colloquial term for COCAINE.

**cola nut** see KOLA NUT.

**cold-blooded animal** see ECTOTHERM.

**cold cognition** a mental process or activity that does not involve feelings or emotions. For instance, reading a list of nonsense syllables or factoids (brief pieces of invented or inaccurate information) typically involves cold cognition. Compare HOT COGNITION. [introduced in 1963 by U.S. social psychologist Robert P. Abelson (1928–2005)]

**cold-deck imputation** one of several methods of inserting values for missing data (see IMPUTATION) in which missing observations are replaced by values from a source unrelated to the data set under consideration. Suppose, for example, that a patient questionnaire was administered in a hospital and that five people failed to respond to an item. Substituting responses from a similar item on a survey conducted previously would be an example of cold-deck imputation. Compare HOT-DECK IMPUTATION.

**cold emotion** a reaction to some stimulants (e.g., epinephrine) that entails the physiological responses of emotional arousal without an identifiable affective root.

**coldness** *n.* **1.** a psychological characteristic featuring a relative absence of empathy toward and emotional support of others. **2.** a thermal sensation produced by a stimulus that is below skin temperature. Exposure to low temperatures may affect physical and mental health. Research indicates that reaction time, tracking proficiency, tactile discrimination, and other types of performance begin to deteriorate at temperatures of 13 °C (55 °F) or below. Studies of **cold effects** on social behavior have produced conflicting evidence of both increased and decreased aggression.

**cold pressor pain test** a test of pain produced by immersing a limb in iced water. Also called **cold pressor test**.

**cold spot** any point on the surface of the skin containing nerve receptors sensitive to low-temperature stimuli.

**cold turkey** a common colloquial term for the abrupt cessation of the use of drugs, particularly opiates, without cushioning the impact by the use of medications (e.g., methadone) that provide some of the same actions as the drug being stopped. The name refers specifically to the chills and gooseflesh experienced during OPIOID WITHDRAWAL.

**coleadership** *n.* the sharing of the organizational, directive, and motivational duties of leadership between two or more individuals. For example, two therapists or counselors may engage in coleadership during GROUP THERAPY. The leadership role may be deliberately divided, or division may occur spontaneously as the various leadership duties

become associated with several individuals (see ROLE DIFFERENTIATION). In some cases, the leaders are equal in status and responsibilities, but in other cases, one leader may have more status than another.

**colera** *n.* see BILIS.

**colic** *n.* **1.** the condition in an otherwise healthy baby of crying at least 3 hours a day, at least 3 days a week, for at least 3 weeks; the cause is not understood. **2.** a type of pain marked by abrupt onset and cessation.

**colitis** *n.* inflammation of the colon, the main part of the large intestine. Colitis may be caused or aggravated by emotional disturbances, such as depression or anxiety.

**collaboration** *n.* **1.** the act or process of two or more people working together to obtain an outcome desired by all, as in COLLABORATIVE CARE and COLLABORATIVE LEARNING. **2.** an interpersonal relationship in which the parties show cooperation and sensitivity to the others' needs. [first described by Henry Stack SULLIVAN] —**collaborative** *adj.*

**collaborative care** **1.** collaboration between two or more disciplines or practitioners to assess a client's problem or problems, develop a treatment plan, and monitor progress. Also called **split treatment**. **2.** collaboration across agencies to coordinate services to a particular client or client group.

**collaborative empiricism** an approach to psychotherapy in which the therapist and client work together as equal partners in addressing issues and fostering change through mutual understanding, communication, and respect. The therapist views the client as a peer who is capable of objective analyses and conclusions.

**collaborative evaluation** see PARTICIPATORY EVALUATION.

**collaborative family health care** a form of interdisciplinary practice based on the belief that health events occur simultaneously on biological, psychological, and social levels. Collaborative clinicians share decision making and responsibility with patients and their families and integrate clinical expertise from relevant disciplines to provide patients with comprehensive and coordinated care.

**collaborative filtering** a partially automated decision-making procedure in which a computer recommends certain choices on the basis of choices made by others who are similar to the present chooser.

**collaborative learning** **1.** the interaction between two or more people working on a task that allows greater learning to be achieved, particularly by those who are less skilled, than would occur if the participants worked alone. **2.** the third stage of CULTURAL LEARNING, in which two or more individuals who are equal in expertise or authority work together to solve a common problem. See also IMITATIVE LEARNING; INSTRUCTED LEARNING. [proposed by U.S. psychologist Michael Tomasello (1950– ) and colleagues]

**collaborative memory** the recall output of a group of individuals working together to remember shared information or events. Also called **collaborative remembering**. See also COLLECTIVE MEMORY.

**collaborative therapy** **1.** any form of therapy employing COLLABORATIVE EMPIRICISM. **2.** COUPLES THERAPY conducted by two therapists, each seeing one partner but conferring from time to time. Also called **collaborative marriage therapy**; **collaborative marital therapy**.

**collagen** *n.* the major protein of the white fibers of the body's connective tissue (e.g., in skin, cartilage, bone, and tendons).

**collapsing** *n.* the process of combining multiple response options or categories to form a smaller number of responses or categories. For example, a researcher could collect demographic data for students at a particular college by each year of matriculation (i.e., freshman, sophomore, junior, and senior) and then collapse the information from four to two categories (e.g., lower division and upper division).

**collateral** *adj.* secondary to something else. For example, a **collateral fiber** is a nerve fiber that branches off the main axon of a neuron, and **collateral circulation** is an alternative route for blood when the primary vessel is obstructed (see ANASTOMOSIS). —**collaterally** *adv.*

**collateral behavior** behavior that is not required by a REINFORCEMENT CONTINGENCY but occurs in a regular, temporal relation to behavior directly reinforced by the contingency. Compare ADJUNCTIVE BEHAVIOR; INTERIM BEHAVIOR; MEDIATING BEHAVIOR.

**collateral heredity** descent along different lines but from a common ancestry.

**collateral sulcus** a fissure that runs along the inferior surface of each cerebral hemisphere from approximately the posterior end of the OCCIPITAL LOBE to the anterior end of the TEMPORAL LOBE.

**collative properties** the structural properties of such stimulus patterns in art forms as complexity and novelty. Studies indicate that people tend to prefer stimuli with moderate levels of collative properties. See also AROUSAL POTENTIAL.

**collective** *n.* any aggregate of two or more individuals, especially a larger, spontaneous, and relatively short-lived social grouping such as a crowd or mob. A collective often includes individuals who are dispersed over a wide area and have no direct contact with one another but who nonetheless display common shifts in opinion or action.

**collective bargaining** the process in which unionized employers negotiate with employee representatives on wages, benefits, hours, and other conditions of work, such as seniority, discipline, and discharge procedures. See also GOOD-FAITH BARGAINING.

**collective behavior** joint or similar actions performed by members of a collective, especially when these actions would be atypical of the same individuals outside of the collective. Examples of collective behavior by groups or aggregations concentrated in a specific location include lynching, rioting, and panics. Others, such as fads and SOCIAL MOVEMENTS, involve widely dispersed individuals who nonetheless engage in similar actions (see COLLECTIVE MOVEMENTS).

**collective conscience** the shared values, norms, sentiments, and beliefs that form the basis of moral thinking and action in a cohesive society. Also called **common conscience**. [introduced by Émile DURKHEIM]

**collective consciousness** see GROUP MIND.

**collective efficacy** the belief that a group is capable of integrating skills, efforts, and the persistence of its members to complete the demands of a task successfully.

**collective effort model (CEM)** an EXPECTANCY-VALUE

MODEL of productivity losses in groups that posits that working on a task collectively reduces members' motivation by lowering their expectations of successful goal attainment and diminishing the value of group goals. See also SOCIAL LOAFING; SUCKER EFFECT. [developed in 1993 by U.S. social psychologist Steven J. Karau (1965– ) and U.S.-born Australian social psychologist Kipling D. Williams (1953– )]

**collective experience** in group psychotherapy, the common body of emotional experience that develops out of the individual members' identification with each other's problems and mutual support and empathy. [first described by Russian-born U.S. psychotherapist Samuel Richard Slavson (1890–1981)]

**collective guilt** **1.** an unpleasant emotional state involving a shared realization that one's group or social unit has violated ethical or social principles, together with associated feelings of regret. Collective guilt is more likely when members of a group (a) strongly identify with that group, (b) feel a sense of control over or responsibility for the negative actions of other members, and (c) recognize the group's actions are illegitimate. **2.** the idea that members of a group may be held responsible for violations of norms or laws committed by other members of the same group. See GROUP FALLACY; GUILT BY ASSOCIATION.

**collective hypnosis** see GROUP HYPNOSIS.

**collective hysteria** the spontaneous outbreak of atypical thoughts, feelings, or actions in a group or social aggregate. Manifestations may include psychogenic illness, collective hallucinations, and bizarre actions. Instances of epidemic manias and panics, such as CHOREOMANIA in the Middle Ages, TULIPMANIA in 17th-century Holland, and radio listeners' reactions to the Orson Welles broadcast based on H. G. Wells's *War of the Worlds* in 1938, have been attributed to collective hysteria. Also called **group hysteria**; **epidemic hysteria**; **mass hysteria**.

**collective induction** group discussion or problem solving, especially when this involves identifying general principles or rules from a set of specific facts, instances, or evidence.

**collective information-processing model** a general theoretical explanation of group decision making that assumes that group members combine and process information through group discussion to formulate decisions, choices, and judgments.

**collective memory** shared recollection: mental representations of past events that are common to members of a social group. For example, mine workers may collectively remember the accidental death of a coworker differently than the general public, just as younger and older people may remember significant historical events differently. Collective memory is expressed in numerous forms—including oral and written narratives, monuments and other memorials, commemorative rituals, and symbols—and serves a range of functions, such as establishing and maintaining relationships, teaching or entertaining others, and supporting group identity. The memory is common to the group, but it is remembered by individuals, and research suggests that they coordinate their personal memories with those of their groups through a process of attunement: Stimuli assumed to be experienced by one's social group are more prominent in both cognition and behavior because they receive greater attentional focus or more

elaborated ENCODING, which in turn increases their accessibility. Also called **cultural memory**; **social memory**.

**collective mind** see GROUP MIND.

**collective monologue** a form of egocentric, unsocialized speech in which children talk among themselves without apparently communicating with each other in a meaningful way; that is, the statements of one child seem unrelated to the statements of the others. Also called **pseudoconversation**. [first described by Jean PIAGET]

**collective movements** instances of COLLECTIVE BEHAVIOR in which the number of individuals responding similarly to some event or experience increases over time until numerous people are affected across physically distant locations. Some movements, which include SOCIAL MOVEMENTS, are organized, deliberate attempts to involve and influence individuals, whereas others (fads, crazes, protests, or instances of COLLECTIVE HYSTERIA) occur spontaneously.

**collective psychology** **1.** the mental and emotional states and processes characteristic of individuals when aggregated in such groups as audiences, crowds, mobs, and SOCIAL MOVEMENTS. The term is mainly associated with early theorists in this area, such as Gustave LE BON. **2.** the scientific study of these phenomena.

**collective representations** the institutions, laws, symbols, rituals, and stories that embody a society's key concepts and values and its sense of itself as a distinct community with its own identity and way of life. [introduced by Émile DURKHEIM]

**collective self** see SOCIAL IDENTITY.

**collective self-esteem** individuals' subjective assessment of that portion of their self-concept that is based on their membership in social groups, such as families, teams, or schools, as well as on categories that have psychological significance for them, such as race, ethnicity, or nationality. Collective self-esteem is often measured using the **Collective Self-Esteem Scale (CSES)**, developed in 1992 by U.S. social psychologists Riia K. Luhtanen and Jennifer Crocker (1952– ). Respondents evaluate their general group memberships across four subscales pertaining to membership esteem (evaluation of their worthiness as members of a group), private collective self-esteem (evaluation of the worthiness of the group), public collective self-esteem (evaluation of others' perceptions of the group), and the importance of the group to their identity.

**collective suicide** see MASS SUICIDE.

**collective unconscious** the part of the UNCONSCIOUS that, according to Carl JUNG, is common to all humankind and contains the inherited accumulation of primitive human experiences in the form of ideas and images called ARCHETYPES and manifested in myths as well as other cultural phenomena (e.g., religion) and in dreams. It is the deepest and least accessible part of the unconscious mind. See also PERSONAL UNCONSCIOUS; RACIAL MEMORY.

**collectivism** *n.* **1.** the tendency to view oneself as a member of a larger (family or social) group, rather than as an isolated, independent being. **2.** a social or cultural tradition, ideology, or personal outlook that emphasizes the unity of the group or community rather than each person's individuality. Most Asian, African, and South American societies tend to put more value on collectivism than do Western societies, insofar as they stress cooperation,

communalism, constructive interdependence, and conformity to cultural roles and mores. Compare INDIVIDUALISM. —**collectivist** *adj.*

**college admission tests** tests for college applicants, which are used to help determine academic achievement and college readiness. For admission to undergraduate programs, these tests, also called **college boards**, often include the SCHOLASTIC ASSESSMENT TEST and the ACT ASSESSMENT. Depending on the field of study, students applying to graduate programs are usually required to take standardized admissions tests such as the GRADUATE RECORD EXAMINATIONS, Graduate Management Admission Test, Law School Admission Test, or Medical College Admission Test.

**College Entrance Examination Board Advanced Placement Program** see ADVANCED PLACEMENT EXAMINATIONS.

**College Level Examination Program (CLEP)** the most widely accepted credit-by-examination program in the United States, helping students of any age earn college credits by obtaining certified evidence of what they already know. A student can earn from 3 to 12 units of credit toward a college degree for each CLEP examination that is successfully completed.

**collegial model** any collaborative approach that encourages equal participation by all interactants while minimizing status differences. In research, for example, this approach enjoins researchers to involve participants fully in the research process; in therapeutic settings, the model requires therapists to treat clients as equals.

**colliculus** *n.* (*pl.* **colliculi**) a small elevation. Two pairs of colliculi are found on the dorsal surface of the MIDBRAIN. The rostral pair, the SUPERIOR COLLICULI, receive and process visual information and help control eye movements; they are also thought to have a role in BLINDSIGHT. The caudal pair, the INFERIOR COLLICULI, receive and process auditory information. [from Latin, "small hill"]

**collinearity** *n.* in REGRESSION ANALYSIS, the situation in which two INDEPENDENT VARIABLES are so highly associated that one can be closely or perfectly predicted by the other. For example, collinearity likely is present if a researcher examines how height and age contribute to children's weight, since the two predictors are highly interrelated (i.e., as children grow older they get taller). Collinearity leads to difficulties in interpreting the unique influences of the independent variables and requires the use of PARTIALING procedures to distinguish their separate effects. See also MULTICOLLINEARITY. —**collinear** *adj.*

**colloid** *n.* **1.** a large, glue-like molecule that cannot pass through the plasma membrane of a cell. When injected into the peritoneum, colloids attract and retain water by OSMOSIS. **2.** a system consisting of two or more phases in which one phase (the **dispersed phase**) is distributed throughout the other phase (the **continuous phase**). A sol, for example, consists of large molecules or small solid particles distributed in a liquid, as when starch is mixed with water. —**colloidal** *adj.*

**collusion** *n.* in psychotherapy, the process in which a therapist consciously or nonconsciously participates with a client or third party to avoid an issue that needs to be addressed. —**collusional** *adj.*

**collusional marriage** a marriage in which one partner instigates or engages in inordinate, deficient, irregular, or illegal conduct and the other partner covertly endorses it



or covers it up, while ostensibly being in the role of passive victim or martyr. See also MARITAL SKEW.

**coloboma** *n.* an apparent absence or defect of some eye tissue, usually due to failure of a part of the fetal intraocular fissure to close. See IRIS COLOBOMA.

**colocalization** *n.* spatial overlap, in particular the presence of more than one neurotransmitter or neurochemical in the same PRESYNAPTIC terminal or of more than one brain activation in neuroimaging.

**colonialism** *n.* see POSTCOLONIALISM.

**colonial species** a species in which several breeding groups of birds live in spatial proximity. Cliff swallows and herring gulls, for example, build nests in proximity to many others of their species (**colonial nesting**). Colonial species can benefit from their proximity in collective defense against predators, but there may be extreme competition or INFANTICIDE between neighbors and increased risk of disease transmission.

**colony** *n.* **1.** a gathering of animals of the same species into a relatively large group that may or may not display SOCIAL ORGANIZATION. A colony may provide the advantage of having many individuals available for locating food and defending against predators, but it has potential costs in terms of increased competition for food or breeding opportunities and increased potential for disease transmission. **2.** a group of people who settle in a new territory but continue to have some relationship with their homeland. **3.** a territory that has become subject to the political and economic control of another country, usually a distant one, as a result of settlement from that country. The settlers or their descendants usually form the ruling class, despite being a minority. **4.** a group of individuals who share a common interest and live in proximity, such as an artists' colony or nudist colony, or the place inhabited by such a group. —**colonial** *adj.* —**colonialism** *n.* —**colonist** *n.* —**colonize** *vb.*

**color** *n.* the quality of visible light that corresponds to wavelength as perceived by retinal receptors. It is thus the subjective experience of a physical entity. Color is characterized by the three separate attributes of HUE, SATURATION, and LUMINOUS INTENSITY, but in general usage the term refers to hue only. See also ACHROMATIC; CHROMATIC; PRIMARY COLORS.

**color adaptation** see CHROMATIC ADAPTATION.

**color agnosia** see VISUAL AGNOSIA.

**color amnesia** an inability to recall the characteristic colors of objects (e.g., a fire truck is red), despite intact color vision and perception.

**color anomia** the inability to name a presented color while being able to point to it when the name is given and to match colors correctly. Color anomia is explained as a disconnection of the cortical color centers from the language areas in the left hemisphere of the brain.

**color attribute** any of the basic characteristics of color: HUE, SATURATION, or LUMINOUS INTENSITY.

**color balance** the amounts of different colors that are most pleasing with each other. German poet and scholar Johann Wolfgang von Goethe (1749–1832) was the first to formulate a mathematical description of color balance; his work was amplified by U.S. painter Albert H. Munsell (1858–1918). See also MUNSELL COLOR SYSTEM.

**color blindness** the inability to discriminate between colors and to perceive color hues. Color blindness may be caused by disease, drugs, or brain injury (see ACQUIRED COLOR BLINDNESS), but most often it is an inherited trait (**congenital color blindness**) that affects about 10% of men (it is rare in women). The most widely used classification of the different types of color blindness is based on the trichromatic nature of normal color perception, using prefixes to indicate the three primary colors: **proto-** (red), **deutero-** (green), and **trit-** (blue). The type of deficiency is indicated by suffixes: **-anomaly** for partial inability to perceive one or more of the primary colors and **-anopia** for complete inability to do this. The most common form of the disorder involves the green or red receptors of the cone cells in the retina, causing a red–green confusion (see DEUTERANOPIA; PROTANOPIA). Total color blindness is rare, affecting about 3 individuals out of every 1 million (see ACHROMATISM). See also DICHROMATISM; MONOCHROMATISM; TRICHROMATISM.

**color-blindness test** any task or device that tests the ability to distinguish different colored stimuli, specifically to discover abnormalities in the perception of color. The most common tests involve the detection of colored figures against a colored background under conditions that require the use of hue information, rather than luminous intensity or saturation. See also ISHIHARA TEST FOR COLOR BLINDNESS.

**color cells** the three types of RETINAL CONES, each of which is sensitive to one of the visual primary colors: red, green, and blue. See PHOTOPIGMENT; TRICHROMATIC THEORY. See also COLOR BLINDNESS.

**color circle** **1.** an array of CHROMATIC colors around the circumference of a circle. The colors are arranged in the order in which they are seen in the spectrum, but nonspectral purples and reds are also included. Complementary colors are opposite each other. **2.** the arrangement of color sectors on a disk such that the disk appears gray when the colors are “mixed” by rotation of the disk. [first devised by Isaac NEWTON]

**color cone** a three-dimensional representation of all visible colors that takes into account HUE, SATURATION, and LUMINOUS INTENSITY. Luminous intensity is represented on the vertical axis, hue is represented in polar coordinates around the vertical axis, and saturation is represented radially around the vertical axis. See COLOR SOLID.

**color constancy** the tendency to perceive a familiar object as having the same color under different conditions of illumination. For example, a red apple will be perceived as red in well or poorly illuminated surroundings. Color constancy is an example of PERCEPTUAL CONSTANCY. Compare BRIGHTNESS CONSTANCY; OBJECT CONSTANCY; SHAPE CONSTANCY; SIZE CONSTANCY.

**color contrast** the effect of one color upon another when they are viewed in proximity. In **simultaneous contrast**, complementary colors, such as yellow and blue, are enhanced by each other: The yellow appears yellower, and the blue appears bluer. In **successive contrast**, the complement of a color is seen after shifting focus to a neutral surface.

**Colored Progressive Matrices** see RAVEN'S PROGRESSIVE MATRICES.

**color harmony** the extent to which colors are pleasing in combination with one another. At least in isolation,

complementary colors and colors of the same hue but differing considerably in saturation or lightness are judged to be most harmonious.

**color hearing** see CHROMATIC AUDITION.

**colorimeter** *n.* an instrument used to compare, identify, or reproduce colors by comparison with a known mixture of monochromatic and white lights or a mixture of the three primary colors.

**color induction** see INDUCED COLOR.

**color mixer** a device that enables light of two different wavelengths to be presented simultaneously or in rapid sequence to the same region of the retina.

**color mixture** a fusion effect produced by combining pigments (SUBTRACTIVE MIXTURE), projecting lights simultaneously (ADDITIVE COLOR MIXTURE), or rapidly sequencing lights in a COLOR MIXER (retinal mixture).

**color perception** the awareness of the stimulus attribute of HUE.

**color purity** a measure of the extent to which a color is free of white, gray, or black. A color that is predominantly free of such admixtures is said to have **high chromaticity**.

**color pyramid** see COLOR SOLID.

**color saturation** see SATURATION.

**color scotoma** an area of depressed or lost color vision in one or both eyes. Color scotomas may be present in cases of OPTIC NEURITIS and are found in the contralateral half of the visual field of each eye after unilateral brain injury (see HEMIACHROMATOPSIA).

**color sensation** the experience evoked by exposure of the visual system to chromatic stimuli. Mental awareness and the integration of color sensations lead to COLOR PERCEPTION.

**color solid** a three-dimensional representation of all aspects of color, including the various degrees and combinations of hue, luminous intensity, and saturation. Various solid shapes can be used to form such a representation; these give rise to different types of color solids, such as the COLOR CONE, **color pyramid**, and **color spindle**.

**color subtraction** a process in which some wavelengths of an illuminating light source are absorbed by pigments in an object, while the remaining wavelengths are reflected. The reflected wavelengths are therefore the only ones that can be perceived, regardless of the wavelength composition of the original illumination. See also COLOR MIXTURE.

**color surface** a plane made by cutting through a COLOR SOLID to show all possible hues and saturations at a specific level of luminous intensity.

**color system** any system devised to organize colored stimuli that takes into account the attributes of hue, saturation, and luminous intensity. Examples include the DIN COLOR SYSTEM, MUNSELL COLOR SYSTEM, Ostwald color system, and Ridgway color system.

**color temperature** the temperature in kelvin (K) of a nonblack body indicated by the temperature to which a black body would need to be heated to give the same spectral distribution as that of the nonblack body. For example, candlelight has a color temperature of 1500 K, whereas blue sky is over 9000 K.

**color theory** any of a variety of theories formulated to

explain color phenomena. Examples include the dual process theory of color vision (see OPPONENT PROCESS THEORY OF COLOR VISION), the LADD-FRANKLIN THEORY, and the RETINEX THEORY.

**color triangle** a triangular two-dimensional representation of the relationship between hue, luminous intensity, and saturation. Compare COLOR SOLID.

**color value 1.** an attribute of a colored stimulus related to its LUMINANCE or perceived amount of gray. **2.** a dimension in the MUNSELL COLOR SYSTEM that specifies the lightness of a stimulus.

**color vision** the ability to distinguish visual stimuli on the basis of the wavelengths of light they emit or reflect. See COLOR THEORY.

**color wheel** a disk divided into sectors of different colors. The wheel is rotated to investigate COLOR MIXTURE.

**color zones 1.** areas of the retina that are differentially sensitive to different colors. All colors are perceived in the FOVEA CENTRALIS; blues, yellows, and grays in the middle zone; and (with some overlap) only ACHROMATIC colors in the periphery. **2.** in PERIMETRY, regions in the visual field with different color sensitivity, corresponding to the regions of retinal color sensitivity.

**colostrum** *n.* the first milk secreted by a woman immediately following the end of pregnancy. The milk is thin and opalescent and has a different nutrient composition than milk secreted during the remaining lactation period, which has high levels of antibodies that confer passive IMMUNITY on the infant.

**column** *n.* in anatomy, a structure that resembles an architectural pillar. Columns range from macroscopic, such as the SPINAL COLUMN, to microscopic, such as CORTICAL COLUMNS and DORSAL COLUMNS. —**columnar** *adj.*

**columnar organization** see CORTICAL COLUMN.

**coma** *n.* a profound state of unconsciousness due to dysfunction of the ASCENDING RETICULAR ACTIVATING SYSTEM, cerebral cortex, and other brain areas critical to alertness and cognition. A person in a coma is unaware of the self or environment, does not engage in any voluntary activity, and does not respond to light, sound, touch, or other stimuli. He or she cannot be roused, his or her eyes remain closed, and normal sleep and wake cycles cease. Causes are numerous but commonly include head injury or other trauma, blockage or rupture of cerebral blood vessels, infection, oxygen deprivation (from cardiac arrest, hypoxia, etc.), severe drug or alcohol intoxication, seizures, strokes, tumors, and metabolic disturbances and other disorders. Comas typically last 10 to 14 days, with affected individuals often progressing to a MINIMALLY CONSCIOUS STATE or a VEGETATIVE STATE. Prognosis depends on the severity and site of neurological damage as well as the cause and duration of the coma. The GLASGOW COMA SCALE is the most commonly used instrument for assessing the severity of consciousness deficits, but others include the GRADY COMA SCALE, the FULL OUTLINE OF UNRESPONSIVENESS SCORE, and the Wessex Head Injury Matrix. ELECTROENCEPHALOGRAPHY and somatosensory POTENTIALS also are regarded as useful tools for exploring residual brain activity and providing information for recovery. —**comatose** *adj.*

**coma stimulation** the use of multimodal sensory stimulation in an attempt to speed up the process of recovery from coma or improve arousal level. The efficacy of such approaches remains unestablished.

**coma therapy** see INSULIN-SHOCK THERAPY.

**coma vigil** an imprecise and obsolescent term generally used to denote a VEGETATIVE STATE. In coma vigil, individuals may appear alert and aware (e.g., by opening and moving their eyes) but do not respond to stimuli in any adaptive, meaningful way.

**combat and operational stress control (COSC)** as defined by the U.S. Army, programs developed and actions taken by military leadership to prevent, identify, and manage adverse COMBAT STRESS REACTIONS, with the goal of returning soldiers to duty expeditiously, enhancing unit cohesion, optimizing mission performance, and minimizing the occurrence of POSTTRAUMATIC STRESS DISORDER.

**combat stress reaction (CSR)** any psychological reaction, ranging from mild to severe, to traumatic events in military operations. In World War I, such reactions were known as SHELL SHOCK, whereas in World War II, the terms **battle fatigue**, **combat fatigue**, and **combat neurosis** were widely used. Adverse and persistent combat stress reactions are now categorized as POSTTRAUMATIC STRESS DISORDERS. Also called **combat and operational stress reaction (COSR)**. See also COMBAT AND OPERATIONAL STRESS CONTROL; STRESS CASUALTY.

**combat stress reduction** a set of measures designed to develop skills to reduce COMBAT STRESS REACTIONS. Stress reduction entails remediation procedures, regulatory techniques, and preventive strategies (psychological coping techniques). See also COMBAT AND OPERATIONAL STRESS CONTROL.

**combination** *n.* the selection of  $r$  objects from among  $n$  objects without regard to the order in which the objects are selected. The number of combinations of  $n$  objects taken  $r$  at a time is often denoted as  ${}_nC_r$ . A combination is similar to a PERMUTATION but distinguished by the irrelevance of order.

**combination law** see LAW OF COMBINATION.

**combination test** a type of test in which the main task is to assemble or combine words or objects into a more complex whole.

**combination therapy** the application of two or more distinct therapeutic approaches by the same therapist to a client's presenting problem. It is distinct from ADJUNCTIVE THERAPY, which involves multiple practitioners.

**combination tone** a tone generated in the ear that is produced when two **primary tones** (i.e., two tones differing in frequency) are presented simultaneously. For example, under certain conditions a 1000 Hz tone and a 1200 Hz tone will produce audible combination tones whose frequencies are 200 Hz (a **difference tone**) and 800 Hz (a **cubic difference tone**). Most combination tones are produced by nonlinear distortion that occurs within the cochlea.

**combinatorial operation** a mental process that generates new representations by merging constituents according to a set of rules. For example, sentences are constructed by combinatorial operations on words and phrases according to the rules of syntax.

**combined therapy** **1.** psychotherapy in which the client is engaged in two or more treatments with the same or different therapists. For example, COUPLES THERAPY may include group therapy with several other couples in addition to individual therapy or CONJOINT THERAPY for each couple.

**2.** treatment using a combination of psychotherapy and medication. See also ADJUNCTIVE THERAPY; ADJUVANT THERAPY.

**coming out** revealing that one is gay, lesbian, bisexual, or transgender. Such a declaration can sometimes lead to problems with the individual's family, employers, or friends and can therefore be a difficult step, even for those who accept and are comfortable with their sexual orientation. Also called **coming out of the closet**.

**command style** in education, a highly structured, traditional instruction method in which the teacher makes all decisions regarding lesson development and implementation and the students' role is to receive the information passively and perform required tasks. Compare INDIVIDUAL PROGRAM.

**commensalism** *n.* an INTERSPECIES INTERACTION in which two species live closely together with neither species gaining or losing any benefits from the association. Compare MUTUALISM; PARASITISM. —**commensal** *adj.*, *n.*

**commissural fiber** an axon from any of various neurons that connect the same or equivalent structures in the left and right cerebral hemispheres. Compare ASSOCIATION FIBER.

**commissure** *n.* a structure that forms a bridge or junction between two anatomical areas, particularly the two cerebral hemispheres or the halves of the spinal cord. Examples include the two key landmarks in brain mapping: the **anterior commissure**, a bundle of myelinated fibers that joins the TEMPORAL LOBES and contains fibers of the OLFACTORY TRACT; and the **posterior commissure**, a bundle of myelinated fibers that connects regions in the midbrain and Diencephalon. See also CORPUS CALLOSUM; GRAY COMMISSURE; WHITE COMMISSURE. —**commissural** *adj.*

**commissurotomy** *n.* a surgical procedure involving a partial cutting of a COMMISSURE or fiber bridge, especially the great fiber bridge between the two cerebral hemispheres, the CORPUS CALLOSUM. A complete sectioning of the corpus callosum is called a **callosotomy**; this also severs its large forward portion, the anterior commissure. Complete callosotomies are now avoided if possible, in favor of partial transections. This surgery has been used to treat severe and intractable epilepsy, and it has also enabled researchers to study the isolated functions of each hemisphere. Research in this area was pioneered by Roger SPERRY (see CHIMERIC STIMULATION). Also called **callosotomy**; **split-brain procedure**; **split-brain technique**. See SPLIT BRAIN.

**commitment** *n.* **1.** confinement to a mental institution by court order following certification by appropriate mental health authorities. The process may be voluntary but is generally involuntary. See CERTIFICATION LAWS. See also CIVIL COMMITMENT; CRIMINAL COMMITMENT. **2.** obligation or devotion to a person, relationship, task, cause, or other entity or action.

**commitment laws** legislation governing the holding of a patient in a mental hospital involuntarily upon certification. See CERTIFICATION LAWS.

**commodity theory** a theory proposing that the value of a product or service is related to its availability. In general, a product that is in short supply is perceived as having greater value than one that is readily available. However, a product's value is also related to the demand for it. It may be scarce, but if no one wants it, it will not have a high

value. Commodity theory is used to explain CONSUMER BEHAVIOR in times of product or service restriction. [formulated in 1968 by Timothy C. BROCK]

**commonality analysis** in MULTIPLE REGRESSION, a technique by which the known variance in an outcome or response variable is separated out into the parts that can be uniquely attributed to each individual predictor variable and the parts that are common to any two or more variables.

**common cause hypothesis** the hypothesis that all changes in sensory ability and intellectual functioning (COGNITIVE AGING) in old age are due to a common factor, the deterioration of brain function.

**common chemical sense** see CHEMESTHESIS.

**common conscience** see COLLECTIVE CONSCIENCE.

**common factor 1.** in psychotherapy, any of several variables that are common to various types of therapy, such as the THERAPEUTIC ALLIANCE, and that promote therapeutic success regardless of the different approaches used; common factors can thus be contrasted with factors that are unique to a particular therapy, such as the use of interpretation. The concept of common factors is a premise underlying INTEGRATIVE PSYCHOTHERAPY. THERAPEUTIC FACTORS are similar but typically apply to therapies with groups. [first articulated by Saul ROSENZWEIG in a 1936 article, "Some Implicit Common Factors in Diverse Methods of Psychotherapy"] **2.** see SPECIFIC FACTOR.

**common fate** one of the GESTALT PRINCIPLES OF ORGANIZATION, stating that objects functioning or moving in the same direction appear to belong together, that is, they are perceived as a single unit (e.g., a flock of birds). Also called **law of common fate**; **principle of common fate**.

**common knowledge effect** in groups, the tendency for information that is known by more members prior to a discussion to more strongly influence the group's subsequent discussion and judgment. [proposed in 1993 by U.S. social psychologists Daniel Gigone and Reid Hastie]

**common law 1.** the legal principles deriving from previous decisions of the courts, as opposed to those established by statute. Also called **judge-made law**. See CASE LAW. **2.** the legal system originating in England and used in the United States and some other English-speaking countries, especially as opposed to those systems deriving from Roman law used in Continental Europe.

**common-law marriage** a relationship between an unmarried but long-term cohabiting couple that is considered legally equivalent to marriage. Most states in the United States do not recognize common-law marriages, although cohabitants may be regarded as equivalent to married partners for some purposes.

**common metric** a unit or scale of measurement that is applied to data from different sources. In a META-ANALYSIS, for instance, the results from multiple studies may need to be placed on a common metric so that they may be meaningfully compared.

**common region** a recently introduced GESTALT PRINCIPLE OF ORGANIZATION, stating that objects sharing a common bounded region of space appear to belong together and tend to be perceived as a distinct group. For example, animals in a fenced-in enclosure are more likely to be seen as a group than are the same distribution of animals arrayed in open space. Also called **law of common region**;

**principle of common region.** [proposed in 1992 by U.S. psychologist Stephen E. Palmer (1948– )]

**commons dilemma** see TRAGEDY OF THE COMMONS.

**common sense 1.** beliefs or propositions that are generally agreed upon to reflect sound judgment and nonesoteric reasoning. **2.** see SENSUS COMMUNIS. —**commonsense** *adj.*

**commonsense justice** practices and procedures that ordinary people consider to be fair and just, which may differ from legal conceptions of justice and fairness.

**commonsense psychology** ideas about psychological issues derived from common experience and not necessarily from empirical laboratory or clinical studies. See FOLK PSYCHOLOGY; POPULAR PSYCHOLOGY.

**common trait** in the personality theory of Gordon W. ALLPORT, any of a number of enduring characteristics that describe or determine an individual's behavior across a variety of situations and that are common to many people and similarly expressed. Common traits, such as assertiveness, thus serve as a basis for comparison of one person to another and are distinct from PERSONAL DISPOSITIONS.

**communality** *n.* in FACTOR ANALYSIS, the proportion of variance in one variable that is accounted for by an underlying element common to all of the variables in a set. It is given by the **communality coefficient** ( $h^2$ ), which is scaled such that the closer it is to 1.0 in value the more completely the underlying element accounts for the observed variability. Also called **common variance**. Compare UNIQUENESS.

**communal nursing** see ALLONURSING.

**communal relationship** a relationship in which interaction is governed primarily by consideration of the other's needs and wishes. This contrasts with an exchange relationship, in which the people involved are concerned mainly with receiving as much as they give. See also EQUITY THEORY. [discussed by U.S. social psychologists Margaret Clark and Judson Mills (1932–2008)]

**commune** *n.* a collective living arrangement among individuals or families, typically involving shared chores, resources, and child rearing, as an alternative to marriage and the NUCLEAR FAMILY. Such arrangements were fashionable in the COUNTERCULTURE of the 1960s and 1970s.

**communicated authenticity, regard, empathy (CARE)** qualities of a psychotherapist regarded by some theorists as necessary for therapy to be effective and, ultimately, successful. CARE is considered essential to CLIENT-CENTERED THERAPY.

**communicating hydrocephalus** HYDROCEPHALUS in the absence of any blockage in the flow of cerebrospinal fluid in the ventricular system. Cerebrospinal fluid passes freely from the brain into the spinal canal but is overproduced or abnormally or inadequately reabsorbed. Compare NONCOMMUNICATING HYDROCEPHALUS.

**communication** *n.* the transmission of information, which may be by verbal (oral or written) or nonverbal means (see NONVERBAL COMMUNICATION). Humans communicate to relate and exchange ideas, knowledge, feelings, and experiences and for many other interpersonal and social purposes. Nonhuman animals likewise communicate vocally or nonvocally for a variety of purposes (see ANIMAL COMMUNICATION). Communication is studied by cognitive and experimental psychologists, and COMMUNICA-

TION DISORDERS are treated by mental and behavioral health therapists and by speech and language therapists. **Communications** is the discipline that studies the processes and systems involved in communication at both the interpersonal and broadly social levels, in the latter case paying particular attention to the publishing media and telecommunication systems (telephones, radio, television, Internet, etc.).

**communication analysis** the study of the oral and written communications among people, particularly employees in an organization, with the objective of understanding and improving the process. It can include a determination of the patterns and types of these communications as well as an analysis of breakdowns in the communication process. See COMMUNICATION ERGONOMICS.

**communication apprehension** anxiety related to initiating or maintaining conversation with others. This is a common feature of SOCIAL PHOBIA. See also PUBLIC-SPEAKING ANXIETY.

**communication channels** see CHANNELS OF COMMUNICATION.

**communication deviance (CD)** lack of clarity in communication, making it hard to follow and difficult for the listener to share a common focus of attention and meaning with the speaker. Communication deviance is thought to be a long-term trait within families that may engender inefficient patterns of thinking and information processing. It is also thought to be associated with schizophrenia and other psychological disorders.

**communication disorder** any of a group of disorders characterized by difficulties with speech and language, such as EXPRESSIVE LANGUAGE DISORDER, MIXED RECEPTIVE-EXPRESSIVE LANGUAGE DISORDER, PHONOLOGICAL DISORDER, and STUTTERING.

**communication engineering** the application of scientific principles to the development of technical systems for communication, such as telephone, radio, television, and computer networks. The development and proliferation of computer networks have made knowledge of computer technology essential to communication engineering.

**communication ergonomics** a specialty area of ERGONOMICS that identifies those factors that support or undermine communication in shared tasks. Such factors, including information systems, technical systems, and COMMUNICATION NETWORKS and protocols, may be especially important when participants in a task are widely distributed and safety depends on clear, unambiguous communication (e.g., in air traffic control).

**communication network** the patterns of information transmission and exchange that occur in a group or organization, showing who communicates most frequently (and to what extent) with whom. Such networks may be either centralized or decentralized and characterized mainly by DOWNWARD COMMUNICATION or UPWARD COMMUNICATION. See also CHANNELS OF COMMUNICATION.

**communication overload** a condition in which more information is presented to a person or a computer system than can be processed or otherwise effectively utilized by the person or system. See also COGNITIVE OVERLOAD; INFORMATION OVERLOAD; SENSORY OVERLOAD; STIMULUS OVERLOAD.

**communication skills** the skills required to achieve effective communication. In addition to general language

proficiency (adequate vocabulary and knowledge of syntax), effective communication involves the ability to listen and read with comprehension, to present one's thoughts clearly both in speech and in writing, to accept that the perspectives of others may differ from one's own, and to anticipate the effect of what one says or writes on listeners or readers.

**communication skills training** an intervention that teaches individuals to express themselves clearly and directly and to listen in an active and empathic way, using such techniques as feedback and modeling, in group, family, or work contexts. Training sessions typically focus on a specific theme (e.g., active listening, problem solving, or conflict resolution) after which homework is assigned. Initially developed for couples and families, the training is now used with such populations as people with developmental impairment and with teams in industry settings.

**communication system** an organized scheme or mechanism for transmitting and receiving information for the purposes of communication. The communication may be between people, between machines (usually computers), or between people and machines. Traditional systems include one-way communication (e.g., broadcast radio, television) and two-way communication (e.g., telephone, citizens-band radio). Computers and computer networks provide both one-way communication (e.g., websites) and two-way communication (e.g., e-mail, instant messaging, social media).

**communication theory 1.** the theoretical treatment of the interchange of signs and signals that constitutes communication. **2.** the branch of science concerned with all aspects (technical, physiological, psychological, and social) of the storage and transmission of information. See INFORMATION THEORY.

**communicative act** any verbal or nonverbal behavior through which one party deliberately or unintentionally transmits information to others. For example, a father may point at an object while helping his daughter clean her room to convey to the child that the object should be put away.

**communicative competence** a speaker's knowledge of language and ability to use it appropriately in various communicative settings and with a range of different interlocutors. In contrast to Noam CHOMSKY's notion of COMPETENCE, which explicitly excludes nonlinguistic factors, the idea of communicative competence stresses the social uses of language and the importance of context. See also COMMUNICATION SKILLS. [first described by U.S. sociolinguist Dell H. Hymes (1927–2009)]

**communicology** *n.* an area covering the theory and practice of AUDIOLOGY, speech and language pathology, and improvement in communication by means of exchanging ideas, relating experiences, and giving voice to feelings.

**communitas** *n.* a society or social group with a strong sense of unity and shared purpose, especially one bound together by shared rituals and traditions. *Communitas* (Latin for COMMUNITY) was also the title of the classic 1947 text on city planning by U.S. psychologist Paul Goodman (1911–1972) and his architect brother Percival Goodman, which stressed the relationship between city design and human potential.

**community** *n.* **1.** a socially organized set of species

members living in a physically defined locality. Human communities are often characterized by (a) commonality of interests, attitudes, and values; (b) a general sense of belonging to a unified, socially integrated group; (c) members' self-identification as community members; and (d) some system of communication, governance, education, and commerce. In general parlance, "the community" often means society or the general public. **2.** a collection of individuals who are not socially connected but do have common interests or shared qualities and are therefore perceived by others or by themselves as distinctive in some way (e.g., the scientific community). **3.** in BEHAVIORAL ECOLOGY, a unit comprising all the animal and plant species that coexist and are necessary for each other's survival. Thus, a community includes predator and prey species as well as the various plants that animals need for food, shelter, and so forth; the plants may benefit from the presence of the animals in the community through seed dispersal or INTERSPECIES INTERACTIONS.

**community action group** a group of citizens organized to campaign against specific problems within the local community, such as inadequate delivery of health services, homelessness, or crime.

**community care** in psychiatry, psychology, and rehabilitation, comprehensive community-based services and supports for people with developmental, psychiatric, or physical disabilities. These facilities or services include halfway houses, group homes, sheltered workshops and supported work arrangements, supervised and supportive residences, special education or integrated education programs for children and young people, in-home treatment and family support, personal-care or home-care assistance, case management or service coordination, cooperative living, and hospital-based or free-standing clinics.

**community-centered approach** a concerted, coordinated approach by local agencies and facilities to address such problems in a community or CATCHMENT AREA as mental disorder, delinquency, and substance abuse. This approach holds that since these problems developed in the community, efforts at prevention and treatment should be community based rather than the province primarily of state institutions or federal agencies.

**community competence** the efficacy of a unified, socially organized group of people in producing and regulating its outcomes, or its members' perceptions of this efficacy.

**community control** see NEIGHBORHOOD CONTROL.

**community correction** see ALTERNATIVE SENTENCING.

**community ergonomics** the application of ergonomic principles and practices to address cumulative social trauma in complex societal systems. Community ergonomics focuses on distressed community settings characterized by poverty, social isolation, dependency, and low levels of self-regulation and control. In practice, community ergonomics seeks to identify and implement a community-environment interface to bridge the gap between the disadvantaged residents of a community and the resources defining the social environment within which they function.

**community inclusion** the practice of accepting and encouraging the presence and participation of people with disabilities—in particular, intellectual and developmental disabilities—in the full range of social, educational, work, and community activities.

**community integration** the practice of assisting people with disabilities, especially developmental disabilities, to participate in community activities. Those with such disabilities are encouraged to attend community functions, engage in social interactions with peers and community members without disabilities, and join formal and informal community groups. One model of community integration has service settings that consist of clusters of houses in which adults with disabilities who can function somewhat independently participate in work and daily routines with people without disabilities. With the help of staff members, these adults manage the houses independently—planning meals, purchasing and preparing food, and participating in household maintenance chores—and enjoy leisure activities with their peers. In many instances, staff live in the community as well.

**community mental health** activities undertaken in the community, rather than in institutional settings, to promote mental health. The community approach focuses on the total population of a single CATCHMENT AREA and involves overall planning and demographic analyses of the area's mental health needs. It emphasizes preventive services (e.g., by identifying sources of stress within the community) and seeks to provide a continuous, comprehensive system of services designed to meet the mental health needs in the community. Mental health is approached indirectly through consultation and education, with emphasis on such strategies as BRIEF PSYCHOTHERAPY and CRISIS INTERVENTION and on using such workers as paraprofessionals and indigenous mental health workers.

**community mental health center (CMHC)** a community-based facility or group of facilities providing prevention, treatment, and rehabilitation mental health services, sometimes organized as a practical alternative to the largely custodial care given in mental hospitals. Typical services are full diagnostic evaluation; outpatient individual and group psychotherapy; emergency inpatient treatment; specialized clinics for people with substance abuse problems and for disturbed children and families; aftercare (foster homes, halfway houses, home visiting); vocational, educational, and social rehabilitation programs for current and former patients; consultation with physicians, clergy members, courts, schools, health departments, and welfare agencies; and training of mental health personnel. Also called **comprehensive mental health center**.

**Community Notification Act** see MEGAN'S LAW.

**community prevention and intervention** organized efforts by professionals, indigenous nonprofessionals, and others to implement preventive programs as well as systems for intervention in dealing constructively with problems in the community, such as substance abuse, homelessness, child abuse, juvenile delinquency, cigarette smoking, and a high suicide rate. These efforts are typically most effective where the residents are themselves involved in dealing with such problems through existing community groups, such as neighborhood councils, block committees, service groups, social and fraternal organizations, and community educational and self-help programs. See also COMMUNITY-CENTERED APPROACH.

**community psychology** a branch of psychology that encourages the development of theory, research, and practice relevant to the reciprocal relationships between individuals and the social systems that constitute the community context. It intersects with other branches of psychology (e.g., social psychology) and with other disci-

plines, such as sociology and public health. A particular emphasis is on social welfare, community mental health, and prevention. Its research findings and methods are applied with regard to poverty, substance abuse, violence, school failure, and other social issues. See ECOLOGICAL PERSPECTIVE.

**community residence** a residential setting, usually serving 3 to 15 people and located in a regular house, with live-in or shift staffing. Community residences—some of which provide clinical services in addition to supervision, personal assistance, and training in everyday living skills—represent the most common out-of-home residential setting for people with intellectual or developmental disabilities.

**community services** the complex of community-based services and facilities designed to maintain health and welfare, including mental health clinics, public health and adoption services, family services, vocational training facilities, rehabilitation centers, and living facilities (e.g., half-way houses, home care, and foster-family care). See COMMUNITY CARE; COMMUNITY-CENTERED APPROACH.

**community social worker** a professional who serves as a liaison between local, state, and federal government officials and the public on matters affecting the community. Community social workers may, for example, try to raise awareness among officials about the need for local recreational facilities, about employment problems in the community, and about environmental obstacles in public buildings to residents with physical impairments.

**community speech and hearing center** see SPEECH, LANGUAGE, AND HEARING CENTER.

**comorbidity** *n.* the simultaneous presence in an individual of more than one illness, disease, or disorder. —**comorbid** *adj.*

**companionate grandparent** the type of grandparent who has a warm, loving relationship with his or her grandchildren but does not take on day-to-day responsibility for them. Compare INVOLVED GRANDPARENT; REMOTE GRANDPARENT.

**companionate love** a type of love characterized by strong feelings of intimacy and affection for another person rather than strong emotional arousal in the other's presence. In these respects, companionate love is distinguished from PASSIONATE LOVE. From the perspective of Robert J. Sternberg's TRIANGULAR THEORY OF LOVE, the relationship is high in intimacy and commitment.

**companionate marriage** a marriage of warmth, affection, and trust between spouses, usually one based on equality of the partners and interchangeability of their relationship roles.

**comparable form** see ALTERNATE FORM.

**comparable-forms reliability** see ALTERNATE-FORMS RELIABILITY.

**comparable worth** the principle that men and women should be paid equally for work requiring similar skills and responsibilities. In other words, comparable worth advocates equal pay for work of equal value, such as a woman working as a receptionist and a man working as a mail-room clerk. The principle has been invoked as a means of closing the GENDER PAY GAP and remedying systematic discrimination in pay for female-dominated occupations in comparison to male-dominated occupations with similar

behaviors and demands. Also called **pay equity**. See EQUITY THEORY.

**comparative analysis** see COMPARATIVE METHOD.

**comparative cognition** a subfield of comparative psychology that investigates the origins and mechanisms of cognition in various species and studies the differences and similarities in cognitive processes (e.g., perception, spatial learning and memory, problem solving, social cognition) across a range of animals, including humans, dolphins, elephants, chimpanzees, parrots, and bees.

**comparative judgment** a psychophysical judgment in which two or more stimuli are compared with one another or with a given standard. Also called **relative judgment**. Compare ABSOLUTE JUDGMENT.

**comparative linguistics** the branch of linguistics that studies similarities and differences between languages with the general purpose of understanding the historical relationships between them. See DIACHRONIC LINGUISTICS; GENETIC LINGUISTICS; PHILOLOGY.

**comparative method** an experimental research method of analyzing and comparing the behavior of different species of nonhuman animals, different cultures of humans, and different age groups of humans and other animals so as to identify similarities and dissimilarities and obtain an understanding of a phenomenon of interest. For example, macaques are often used as a model for understanding human mother–infant relationships. However, male macaques rarely become interested in or involved with care of the young, so comparative study of other species is needed to understand when and how male care of the young develops. Also called **comparative analysis**.

**comparative neuropsychology** the study of the relationships between behavior and neural mechanisms in different animal species, including humans, especially in relation to the effects of brain damage.

**comparative psychology** the study of nonhuman animal behavior with the dual objective of understanding the behavior for its own sake and furthering the understanding of human behavior. Comparative psychology usually involves laboratory studies (compare ETHOLOGY) and typically refers to research involving nonhuman species whether or not it utilizes the COMPARATIVE METHOD. Some **comparative psychologists** engage in both field and laboratory studies. See also ANIMAL–HUMAN COMPARISON; COMPARATIVE COGNITION.

**comparative trial** see CONTROLLED TRIAL.

**comparator** *n.* an information-processing unit that compares one variable against a similar variable or standard measure and—based on the difference—may act to bring the variable within desired limits. For example, a thermostat may compare the ambient temperature against a preset temperature, turning the heating system on or off to minimize or eliminate any difference. See also BRAIN COMPARTOR; SERVOMECHANISM.

**comparator hypothesis** a theory of CLASSICAL CONDITIONING proposing that the strength of conditioning is based on a comparison of the likelihood that an unconditioned stimulus will occur following a conditioned stimulus with the likelihood that it will occur in the absence of a conditioned stimulus. It predicts that a response will be observed only if the former probability is higher.

**comparison** *n.* any appraisal of two or more groups in order to identify differences, such as that between the mean of a variable in one population and its mean in another. Comparisons may be planned in advance, as in **A PRIORI COMPARISONS**, or decided upon after data analysis has already begun, as in **POST HOC COMPARISONS**. Also called **contrast**.

**comparison group** **1.** see **SOCIAL COMPARISON THEORY**. **2.** see **CONTROL GROUP**.

**comparison level (CL)** in **INTERDEPENDENCE THEORY**, a standard by which an individual evaluates the quality of any social relationship in which he or she is currently engaged. The CL represents the average outcomes one expects to receive in one's dealings with others based on one's prior relationships. In most cases, individuals whose prior relationships yielded positive rewards with few costs will have higher CLs than those who experienced fewer rewards and more costs in prior relationships. If the reward-to-cost ratio of the current relationship falls below the CL, the individual will experience dissatisfaction. [proposed in 1959 by Harold H. KELLEY and John W. THIBAUT]

**comparison level for alternatives (CL<sub>alt</sub>)** in **INTERDEPENDENCE THEORY**, a standard used by individuals making decisions about whether to remain in a relationship. According to this theory, such decisions are based on a comparison of the outcomes (reward-to-cost ratios) of the current relationship with the possible outcomes of available alternative relationships or of no relationship at all. If the reward-to-cost ratio outside of the current relationship is higher, the relationship will become unstable and may not last. [proposed in 1959 by Harold H. KELLEY and John W. THIBAUT]

**comparison process** in self psychology, evaluating one's abilities, traits, or performances in relation to those of selected other people. Comparisons may be upward, as when weekend golfers compare themselves to professionals, or downward, as when weekend golfers compare themselves to beginners. See also **SOCIAL COMPARISON THEORY**.

**comparison stimulus (Co)** in psychophysical testing, one of a set of stimuli to be compared with a standard stimulus.

**comparison-wise error rate** see **TESTWISE ERROR RATE**.

**compartmentalization** *n.* a **DEFENSE MECHANISM** in which thoughts and feelings that seem to conflict or to be incompatible are isolated from each other in separate and apparently impermeable psychic compartments. In the classical psychoanalytic tradition, compartmentalization emerges in response to fragmentation of the **EGO**, which ideally should be able to tolerate ambiguity and ambivalence. See also **ISOLATION**. —**compartmentalize** *vb.*

**compassion** *n.* a strong feeling of **SYMPATHY** with another person's feelings of sorrow or distress, usually involving a desire to help or comfort that person. —**compassionate** *adj.*

**Compassionate Friends** a voluntary organization that offers support, friendship, and understanding to families grieving the death of a child. See **SELF-HELP GROUP**.

**compassionate love** a form of love that emphasizes the well-being of another person. Compassionate love is affectionate and giving, focused on reducing the other's suffering and promoting the other's flourishing. Originally used

to define a type of selfless caring described by several religious traditions, the concept is now applied broadly to romantic partners, family members, social groups, and humanity as a whole. Compassionate love is similar to the Platonic ideal of altruistic love. See also **AGAPE**; **COMPANIONATE LOVE**; **PASSIONATE LOVE**.

**compassion fatigue** the **BURNOUT** and stress-related symptoms experienced by caregivers and other helping professionals in reaction to working with traumatized people over an extended period of time. See also **POSTTRAUMATIC STRESS DISORDER**. [defined by U.S. psychologist Charles R. Figley (1944– )]

**compatibility** *n.* **1.** the state in which two or more people relate harmoniously because their attitudes, traits, and desires match or complement those of the other or others. **2.** in philosophy, the position that **FREE WILL** and **DETERMINISM** are congruent and can, in some sense, coexist. Compare **INCOMPATIBILITY**. See also **SOFT DETERMINISM**. —**compatible** *adj.*

**Compazine** *n.* a trade name for **PROCHLORPERAZINE**.

**compensable job factors** the factors used to determine the pay rate of a particular job, commonly including skills, effort, or education required; amount of responsibility entailed; and working conditions. The identification of such factors is the basis of the **FACTOR-COMPARISON METHOD** and the **POINT METHOD** of job evaluation.

**compensation** *n.* **1.** substitution or development of strength or capability in one area to offset real or imagined deficiency in another. This may be referred to as **overcompensation** when the substitute behavior exceeds what might actually be necessary in terms of level of compensation for the deficiency. Compensation may be a conscious or unconscious process. In his classical psychoanalytic theory, Sigmund FREUD described compensation as a **DEFENSE MECHANISM** that protects the individual against the conscious realization of such deficiencies. The idea of compensation is central to Alfred ADLER's theory of personality, which sees all human striving as a response to feelings of inferiority (see also **INFERIORITY COMPLEX**). However, many psychologists emphasize the positive aspects of compensation in mitigating the effects of a weakness or deficiency (see **COMPENSATORY MECHANISM**). For example, it can be regarded as an important component of successful aging because it reduces the negative effects of cognitive and physical decline associated with the aging process. See **SELECTIVE OPTIMIZATION WITH COMPENSATION**. **2.** in neuroscience, the recruitment of brain areas to substitute for the loss, due to injury or disease, of neural activity in other areas. See also **BRAIN RESERVE**. **3.** in **PIAGETIAN THEORY**, a mental process—a form of **REVERSIBILITY**—in which one realizes that for any operation there exists another operation that compensates for the effects of the first; that is, a change in one dimension can compensate for changes in another. Also called **reciprocity**. —**compensate** *vb.* —**compensatory** *adj.*

**compensation effect** an increase in group performance that occurs when one or more members work harder to compensate for the real or imagined shortcomings of their fellow members. Compare **KÖHLER EFFECT**; **SUCKER EFFECT**.

**compensatory damages** a sum of money awarded in a civil action ideally to restore the injured party to his or her state prior to the injury. Typical losses recoverable in compensatory damages are medical expenses, lost wages,



and compensation for pain and suffering. Compare PUNITIVE DAMAGES.

**compensatory education** educational programs that are specially designed to enhance the intellectual and social skills of disadvantaged children. An example of such a program is HEAD START.

**compensatory eye movements** movements of the eyes that counteract movement of the head. An example is the VESTIBULO-OCULAR REFLEX.

**compensatory mechanism** a cognitive process that is used to offset a cognitive weakness. For example, someone who is weaker in spatial abilities than in verbal abilities might use compensatory mechanisms to attempt to solve spatial problems, such as mentally rotating a geometric figure by using verbal processes. The underlying theory is that intelligence partly consists of finding ways to compensate for the skills that one has lost over time or in which one was not adept in the first place.

**compensatory nystagmus** see BEKHTEREV'S NYSTAGMUS.

**compensatory reflex** a response that is opposite to, and therefore compensates for, another response. For example, a compensatory response to the suppression of pain by opioid drugs would be an increase in pain sensitivity. Therefore, with extended use, more of the opioid would be needed to achieve the same effect of pain suppression.

**compensatory self-enhancement** a strategy for maintaining self-esteem or public image in which a person responds to poor performance or feedback in one sphere by focusing on or emphasizing his or her positive traits in an unrelated sphere. This emphasis on the positive is intended to offset the unwelcome implications of the bad feedback.

**compensatory task** a task or project that a group can complete by averaging individual members' solutions or recommendations. Groups are more likely to outperform individuals on such tasks when (a) the members are equally proficient at the task and (b) the members do not share common biases that produce systematic tendencies toward overestimation or underestimation. Compare ADDITIVE TASK; CONJUNCTIVE TASK; DISJUNCTIVE TASK. See also WISDOM OF CROWDS.

**compensatory tracking** in ergonomics, a TRACKING task requiring the operator to use a control (e.g., a joystick) to compensate for the movement of a cursor or other indicator on a display so that it remains within a defined target area. A driver, for example, must control his or her speed so that the needle on the speedometer remains at or below the mark showing the legal speed limit.

**competence** *n.* **1.** the ability to exert control over one's life, to cope with specific problems effectively, and to make changes to one's behavior and one's environment, as opposed to the mere ability to adjust or adapt to circumstances as they are. Affirming, strengthening, or achieving a client's competence is often a basic goal in psychotherapy. **2.** one's developed repertoire of skills, especially as it is applied to a task or set of tasks. A distinction is sometimes made between competence and performance, which is the extent to which competence is realized in one's actual work on a problem or set of problems. **3.** in linguistics and psycholinguistics, the nonconscious knowledge of the underlying rules of a language that enables individuals to speak and understand it. In this sense, competence is a rationalist concept that must be kept distinct from the actual linguist-

tic **performance** of any particular speaker, which may be constrained by such nonlinguistic factors as memory, attention, or fatigue. Both terms were introduced by Noam CHOMSKY, who proposed the study of linguistic competence as the true task of linguistics; in doing so, he effectively declared linguistics to be a branch of cognitive psychology. See GENERATIVE GRAMMAR; GRAMMATICALITY; LANGUAGE ACQUISITION DEVICE. **4.** in law, the capacity to comprehend the nature of a transaction and to assume legal responsibility for one's actions. See COMPETENCY TO STAND TRIAL. Compare INCOMPETENCE. —**competent** *adj.*

**competence motivation** the drive to interact effectively with the environment and develop personal skill and capability in solving problems and performing tasks, such mastery being reinforced by a sense of control and positive self-esteem.

**competency-based instruction** a teaching method in which students work at their own pace toward individual goals in a noncompetitive setting. The teacher works with students in identifying appropriate goals and monitoring their progress toward those goals.

**competency evaluation** evaluation of a defendant by a psychologist to determine his or her competency to stand trial.

**competency to stand trial** the capacity to be tried in court as determined by a person's ability, at the time of trial, to understand and appreciate the criminal proceedings against him or her, to consult with an attorney with a reasonable degree of understanding, and to make and express choices among available options. It is a component of ADJUDICATIVE COMPETENCE. See DUSKY STANDARD. See also INCOMPETENCY PLEA.

**competent reservoir** see DILUTION EFFECT.

**competing response training** a technique in BEHAVIOR THERAPY that involves two sequential stages: (a) identification of habit occurrence, including antecedents and warning signs; and (b) creation and practice, in session and through homework, of a competing (i.e., alternative) response to the problem behavior. The competing response should be physically incompatible with the behavioral habit, inconspicuous, and easy to practice. This technique is typically used with habit disorders and is also used in ANGER MANAGEMENT training. See also ALTERNATIVE BEHAVIOR COMPLETION.

**competition** *n.* any performance situation structured in such a way that success depends on performing better than others. **Interpersonal competition** involves individuals striving to outperform each other; **intergroup competition** involves groups competing against other groups, with such groups including both small, face-to-face gatherings and very large groups, such as nations; **intragroup competition** involves individuals within a group trying to best each other. Because competing individuals sometimes increase their chances of success by actively undermining others' performances, such goal structures can lead to conflict. Compare COOPERATION. —**compete** *vb.* —**competitive** *adj.*

**competition by resource defense** the use of territory or other defended space to exclude others from access to resources. The resources are defended indirectly rather than by direct aggression or competition. A special case is RESOURCE DEFENSE POLYGYNY, in which a male can acquire additional mates if it is able to defend a larger than average set of resources.

**competition for resources** in ECOLOGY, the use of the same resource by individuals of the same species (intraspecific competition) or of different species (interspecific competition) when the supply of the resource is insufficient for the combined needs of all individuals. It is a major factor in NATURAL SELECTION. Also called **struggle for existence**. See also DARWINISM; SURVIVAL OF THE FITTEST.

**competition routine** a predetermined pattern of behavior, SELF-TALK, and imagery used during competition to enhance performance.

**competition tolerance** **1.** acceptance of goal structures that require interactants to compete with one another. **2.** a positive, healthy reaction when one must perform competitively.

**competitive bargaining** see DISTRIBUTIVE BARGAINING.

**competitive goals** **1.** goals that can only be attained by outperforming or outmaneuvering other individuals or groups who are also seeking to attain them. **2.** in sports psychology, standards of excellence to be achieved during competition rather than during practice or training. Also called **competition goals**. **3.** established goals that cannot be achieved simultaneously—in effect, they compete or conflict with one another. By spending time and effort to achieve one goal, an individual cannot achieve another goal.

**competitive goal structure** a performance situation structured in such a way that an interactant can reach his or her goals only by outperforming others or preventing others from reaching their goals. When goal structures are purely competitive, individual success requires that all others fail. Because competition creates incompatibility between people, such goal structures can generate interpersonal conflict. Compare COOPERATIVE GOAL STRUCTURE.

**competitive motive** the drive or dispositional tendency to respond competitively in interpersonal and performance settings by maximizing one's own outcomes and impeding the progress of others. Compare COOPERATIVE MOTIVE.

**competitiveness** *n.* a disposition to seek out OBJECTIVE COMPETITIVE SITUATIONS and to compare one's performance against a standard or another person of comparable ability. —**competitive** *adj.*

**competitive reward structure** a performance setting in which rewards are assigned on the basis of individual rather than group achievement and which is structured in such a way that the success of any one individual decreases the rewards received by the other group members. Compare COOPERATIVE REWARD STRUCTURE; INDIVIDUALISTIC REWARD STRUCTURE.

**Competitive State Anxiety Inventory (CSAI)** an instrument that assesses self-confidence and physical and cognitive elements of anxiety that are associated with an immediately upcoming competition (see STATE ANXIETY). In its revised edition (**CSAI-2**), it consists of 27 statements (e.g., "I am concerned about performing poorly") to which participants respond using a 4-point LIKERT SCALE, ranging from *not at all* to *very much so*. [originally developed by sport psychologist Rainer Martens (1942– ) and colleagues]

**complement** *n.* in linguistics, a word, phrase, or clause added to a verb to complete the sense of the PREDICATE. The term is most closely associated with the type of phrase that

follows a COPULA (linking verb), such as *my father* in *He is my father* or *very unhappy* in *She looked very unhappy*.

**complementarity** *n.* **1.** the quality of a relationship between two people, objects, or situations such that the qualities of one supplement or enhance the different qualities of the others. **2.** in any DYADIC RELATIONSHIP, the existence of different personal qualities in each of the partners that contribute a sense of completeness to the other person and provide balance in the relationship. Certain behaviors or traits tend to elicit the complementary behaviors or traits from partners (e.g., dominance often is followed by submission, and vice versa). Complementarity is an important factor in building rapport and the therapeutic relationship in psychotherapy because it reduces anxiety, preserves self-concept, and reinforces the interaction pattern. —**complementary** *adj.*

**complementary and alternative medicine (CAM)** a group of therapies and health care systems that fall outside the realm of conventional Western medical practice. These include but are not limited to ACUPUNCTURE, CHIROPRACTIC, MEDITATION, AROMATHERAPY, HOMEOPATHY, NATUROPATHY, OSTEOPATHY, TOUCH THERAPY, REFLEXOLOGY, REIKI, and the use of certain dietary supplements. Complementary medicine is used as an adjunct to conventional treatment; alternative medicine stands alone and replaces conventional treatment. See also INTEGRATIVE MEDICINE.

**complementary class** in SET THEORY, the totality of elements that do not belong to a particular CLASS. For example, if A is the class of all psychologists, then its complementary class is the class of all people who are not psychologists.

**complementary classification** in classification tasks, the grouping of items from conceptually different categories into a superordinate class based on an individual's mental associations from past experience. For example, cow, tractor, and farmer may be grouped because they are all found on a farm. Also called **functional classification**; **schematic classification**; **thematic classification**. Compare CONCEPTUAL CLASSIFICATION; IDIOSYNCRATIC CLASSIFICATION; PERCEPTUAL CLASSIFICATION.

**complementary colors** see ANTAGONISTIC COLORS.

**complementary distribution** the situation in which two or more ALLOPHONES of a PHONEME occur in mutually exclusive phonetic environments. Compare FREE VARIATION.

**complementary identification** in psychoanalysis, a form of COUNTERTRANSFERENCE in which the analyst identifies with a significant object (person) in the patient's life and experiences the affects that the object would have in relation to the patient. For instance, the patient might project feelings of parental neglect onto the analyst and imply that the analyst is ignoring him or her. This induces feelings of guilt in the analyst, who feels like the rejecting, neglectful parent. Also called **complementary countertransference**. Compare CONCORDANT IDENTIFICATION. [introduced by Polish-born Argentinian psychoanalyst Heinrich Racker (1910–1961)]

**complete block design** a study in which participants are first divided into blocks (relatively homogeneous subsets) according to some characteristic (e.g., age) that is not a focus of interest and are then assigned to the different treatments or conditions in such a manner that each treatment appears once in each block. Thus, the number of par-

ticipants in each block must equal the number of experimental conditions. For example, the following arrangement of four treatments (A, B, C, D) and 16 individuals (from four age groups) is a complete block design:

Block #	Treatment			
1 (children)	A	B	C	D
2 (adolescents)	B	C	D	A
3 (young adults)	C	D	A	B
4 (older adults)	D	A	B	C

By ensuring that the “nuisance” characteristic (here, age) is equally represented across all conditions, complete block designs reduce or eliminate its contribution to experimental error. Compare INCOMPLETE BLOCK DESIGN. See also BLOCK DESIGN; RANDOMIZED BLOCK DESIGN.

**complete-case analysis** see LISTWISE DELETION.

**complete counterbalancing** a process of arranging a series of experimental conditions or treatments in such a way that every possible sequence of conditions is given at least once during the study. For instance, the following arrangement of sequences of three treatments (A, B, C), each assigned to a different subgroup of participants, demonstrates complete counterbalancing: A-B-C, A-C-B, B-C-A, B-A-C, C-A-B, and C-B-A. Compare INCOMPLETE COUNTERBALANCING.

**complete factorial design** a research study involving two or more INDEPENDENT VARIABLES in which every possible combination of the levels of each variable is represented. For instance, in a study of two drug treatments, one (A) having two dosages and the other (B) having three dosages, a complete factorial design would pair the dosages administered to different individuals or groups of participants as follows: A<sub>1</sub> with B<sub>1</sub>, A<sub>1</sub> with B<sub>2</sub>, A<sub>1</sub> with B<sub>3</sub>, A<sub>2</sub> with B<sub>1</sub>, A<sub>2</sub> with B<sub>2</sub>, and A<sub>2</sub> with B<sub>3</sub>. Compare FRACTIONAL FACTORIAL DESIGN.

**completion test** a type of test in which the participant is usually required to supply a missing phrase, word, or letter in a written text. In nonverbal completion tests, a missing number, symbol, or representation must be supplied. See also WORD-STEM COMPLETION.

**complex** *n.* a group or system of related ideas or impulses that have a common emotional tone and exert a strong but usually unconscious influence on the individual’s attitudes and behavior. The term, introduced by Carl JUNG to denote the contents of the PERSONAL UNCONSCIOUS, has taken on an almost purely pathological connotation in popular usage, which does not necessarily reflect usage in psychology. Primary examples from CLASSICAL PSYCHOANALYSIS and its offshoots are Jung’s power complex, Sigmund FREUD’s CASTRATION COMPLEX and OEDIPUS COMPLEX, and Alfred ADLER’s INFERIORITY COMPLEX.

**complex behavior** an activity that requires many decisions and actions in rapid order or simultaneously. Dancing in a ballet is an example of a complex behavior.

**complex cell** a neuron in the cerebral cortex that responds to visual stimulation of appropriate contrast, orientation, and direction anywhere in the receptive field. Compare SIMPLE CELL.

**complex comparison** an evaluation that involves com-

paring some combination of two or more groups against one or more other groups. For example, a researcher investigating the influence of a new teaching style on test scores might examine whether the average score across two classrooms of students differs from that of a third classroom. Compare SIMPLE COMPARISON.

**complex emotion** any emotion that is an aggregate of two or more others. For example, hate may be considered a fusion of anger, fear, and disgust, whereas love blends tenderness, pleasure, devotion, and passion. Comprising the majority of one’s affective experiences, complex emotions include, among others, awe, disgust, embarrassment, envy, gratitude, guilt, jealousy, pride, remorse, shame, and worry. Research suggests that these emotional composites are seen more often in older adults than in children, who have only a partial conceptualization of such complexity: They understand the arousal associated with the emotion but have no knowledge of the kinds of situations that evoke it. Conversely, **simple emotions** are those that are irreducible by analysis to any other emotion. They are pure, unmixed states and include anger, fear, and joy, among others.

**Complex Figure Test** a nonverbal memory test for a complex design. The individual is first asked to copy a complex design without being forewarned about a later memory test. This is followed by immediate and delayed recall trials in which the individual is asked to reproduce the complex figure from memory. A comparison of performance on the copy and recall trials allows the examiner to estimate the contribution of visuospatial and visuomotor processes, task strategy, and memory abilities to the individual’s performance. The **Children’s Complex Figure Test** is a version of this test for children. Also called **Rey Complex Figure Test (RCFT)**; **Rey–Osterrieth Complex Figure Test (ROCF)**. [originally developed by Swiss psychologists André Rey (1906–1965) and Paul-Alexandre Osterrieth]

**complex ideas** in ASSOCIATIONISM, those conceptions that are more abstract and involved than SIMPLE IDEAS. Associationists held that complex ideas, such as beauty, were derived from simple sensations by means of mental processes, such as comparing and generalizing. See ASSOCIATION OF IDEAS. [defined by John LOCKE]

**complexity factor** in psychological aesthetics, a dimension of artistic style involving high levels of complexity (multiplicity). High complexity may reflect the artist’s feelings of tension or anger and convey similar feelings. By contrast, a simple work of art may convey a feeling of tranquility.

**complexity hypothesis** a hypothesis that conscious experiences arise from massive neuronal activity in the THALAMOCORTICAL SYSTEM of the brain, particularly when interactivity in a DYNAMIC CORE of neurons reaches a high level. Complexity is a mathematically defined measure of neuronal integration and differentiation. [proposed by Italian–U.S. neuroscientist Giulio Tononi (1960– ) and U.S. neuroscientist Gerald M. Edelman (1929–2014)]

**complexity of an attitude** the number of distinct dimensions underlying ATTITUDE-RELEVANT KNOWLEDGE. The greater the number of dimensions (i.e., distinct categories of attitude-relevant information), the greater the complexity of an attitude. Researchers have sometimes distinguished between two components of complex attitudes: **differentiation** (the number of distinct dimensions) and **integration** (the extent to which those dimensions are seen as

related to one another). All complex attitudes are high in differentiation but may vary in their level of integration.

**complexity theory** a field that studies nonlinear systems with very large numbers of interacting variables using mathematical modeling and computer simulation. In general, it proposes that such systems are too complex to be accurately predicted but are nevertheless organized and nonrandom. Complexity theory has important applications in such fields as ecology, epidemiology, finance, and information science. See also CHAOS THEORY; DYNAMIC SYSTEMS THEORY.

**complex motives** simultaneous, multiple desires to achieve one or more goals. For example, desires may be compatible and oriented toward the same goal (e.g., working hard due to a desire for success as well as a desire for money) or incompatible and oriented toward opposing goals (e.g., desiring to achieve success through work while simultaneously desiring to relax by not working).

**complex of ideas** a set of related ideas closely associated with emotions, memories, and other psychic factors so that when one of the ideas is recalled, other aspects of the complex are recalled with it. See also COGNITIVE SYSTEM.

**complex partial seizure** a PARTIAL SEIZURE that is characterized by complex psychological symptoms, repetitive motor activities, and specific sensory experiences. During the seizure the individual is in an impaired or altered, often trancelike, state of consciousness, typically accompanied by FALSE MEMORIES (e.g., déjà vu), and may experience such emotions as fear, anxiety, or (less commonly) sadness or pleasure. Stereotyped motor behavior includes grimacing, sucking, chewing, and swallowing, and there may also be visual or olfactory hallucinations. Complex partial seizures are most commonly associated with abnormal discharges from neurons in the temporal lobe. Also called **psychomotor seizure**.

**complex reaction time** see CHOICE REACTION TIME.

**complex schedule of reinforcement** a SCHEDULE OF REINFORCEMENT in which simple schedules are presented in combination. Examples include the CONJOINT SCHEDULE, CONJUNCTIVE REINFORCEMENT, and INTERLOCKING REINFORCEMENT SCHEDULE.

**complex sentence** in linguistics, a sentence consisting of a main CLAUSE and one or more subordinate clauses, as contrasted with a **simple sentence** consisting of a single main clause or a **compound sentence** consisting of several main clauses linked by coordinating conjunctions (see COORDINATION). See also EMBEDDED SENTENCE.

**complex tone** a sound that consists of two or more components of different frequencies. See SOUND SPECTRUM. Compare PURE TONE.

**complex trauma** see DEVELOPMENTAL TRAUMA DISORDER.

**compliance** *n.* **1.** submission to the demands, wishes, or suggestions of others. See also CONFORMITY. **2.** a change in a person's behavior in response to a direct request. A variety of techniques have been developed to enhance compliance with requests. Although some techniques may enhance compliance by producing ATTITUDE CHANGE, behavioral change is the primary goal of these techniques. See DISRUPT-THEN-REFRAME TECHNIQUE; DOOR-IN-THE-FACE TECHNIQUE; FOOT-IN-THE-DOOR TECHNIQUE; LOW-BALL TECHNIQUE; THAT'S-NOT-ALL TECHNIQUE. **3.** in pharmacotherapy, see ADHERENCE. **4.** in SAFETY ENGINEERING,

adherence to workplace codes or guidelines designed to enforce safe behaviors and exclude behaviors that increase the risk of injury or illness. Compliance is the end goal of workplace attempts to train or warn employees exposed to hazards. —**compliant** *adj.* —**comply** *vb.*

**compliant character** a submissive personality whose prime motive is to seek affection from others. Karen D. HORNEY defined the development of such a character as one of three basic NEUROTIC TRENDS used as a defense against BASIC ANXIETY. Compare AGGRESSIVE CHARACTER; DETACHED CHARACTER.

**complicated grief** a response to death (or, sometimes, to other significant loss or trauma) that deviates significantly from normal expectations. Three different types of complicated grief are posited: chronic grief, which is intense, prolonged, or both; delayed grief; and ABSENT GRIEF. The most often observed form of complicated grief is the pattern in which the immediate response to the loss is exceptionally devastating and in which the passage of time does not moderate the emotional pain or restore competent functioning. The concept of complicated grief was intended to replace the earlier terms **abnormal grief** and **pathological grief**.

**complication** *n.* an additional disease, disorder, or condition that occurs or develops during the course of another disease or disorder or during a medical procedure. See also COMORBIDITY.

**complication experiment** an experiment in which two or more events occur simultaneously, but only one is the focus of attention. Such experiments indicate that the events occurring outside the focus of attention are perceived as being displaced in time. See LAW OF PRIOR ENTRY.

**component evaluation** an approach in PROGRAM EVALUATION that examines the separate elements comprising a SERVICE DELIVERY SYSTEM or intervention program. The unit of analysis in the evaluation shifts from the program level to components or links between components and subsequent PROGRAM OUTCOMES.

**componential analysis** **1.** any analysis in which a process or system is separated into a series of subprocesses or components. **2.** a set of information-processing and mathematical techniques that enables an investigator to decompose an individual's performance on a cognitive task into the underlying elementary COGNITIVE PROCESSES. For example, solving an analogy requires encoding of stimuli, inference of the relation between the first two terms of the analogy, and so forth. Componential analysis enables the investigator to ascertain, for each individual, (a) the identities of the components used, (b) the strategy by which the components are combined, (c) the amount of time spent on each component, (d) the susceptibility of the component to erroneous execution, and (e) information regarding the mental representation upon which the component acts. [devised by U.S. psychologist Robert J. Sternberg (1949– )] **3.** a formal semantic analysis in which words are broken down into their separate elements, for example, man = human + male. Componential analysis is often employed to aid understanding of the meaning of words used by members of a particular culture.

**componential subtheory** a subtheory in the TRIARCHIC THEORY OF INTELLIGENCE that specifies three kinds of information-processing components in human intelligence. The three components are (a) metacomponents, which are used to plan, monitor, and evaluate problem

solving and decision making; (b) performance components, which are actually used to solve the problems or make the decisions; and (c) knowledge-acquisition components, which are used to learn how to solve the problems or make the decisions in the first place.

**component instinct** in psychoanalytic theory, a fundamental element of the SEXUAL INSTINCT that has a specific source in one part of the body (e.g., the oral instinct) and a particular aim (e.g., instinct to master). The component instincts are posited to function independently during the early stages of PSYCHOSEXUAL DEVELOPMENT and later to fuse during the GENITAL STAGE, which begins at puberty. Also called **partial instinct**; **part instinct**.

**components of an attitude** see BASES OF AN ATTITUDE.

**composite figure** in psychoanalytic theory, a person or object in a dream whose image is created from the features or qualities of two or more individuals or objects (actual or existing in fantasy or imagination) by the process of CONDENSATION.

**composite hypothesis** a statistical hypothesis that is not specific about all relevant features of a population or that does not give a single value for a characteristic of a population but allows for a range of acceptable values. For example, a statement that the average age of employees in academia exceeds 50 is a composite hypothesis, as there are a variety of ages above that number that the average could assume to validate the statement. Alternatively, a composite hypothesis could give a specific value for one characteristic (e.g., the mean) but not others (e.g., the VARIANCE). Compare SIMPLE HYPOTHESIS.

**composite reliability** **1.** the aggregate reliability of two or more similar items, such as judges' ratings. **2.** in STRUCTURAL EQUATION MODELING, the extent to which the set of constructs represented in the model relate to a given latent variable. CRONBACH'S ALPHA is an index of such reliability.

**composition of movement** the sequence and pattern of neuromuscular activity involved in movement (e.g., walking), including the integration of signals in the premotor and cerebellar areas of the brain.

**compos mentis** in law, mentally competent; that is, neither mentally deficient nor legally insane. See COMPETENCE. Compare NON COMPOS MENTIS.

**compound** *n.* in linguistics, two or more words or other linguistic units combined into a single unit, as in a compound noun (e.g., *bypass*), a compound verb (e.g., *shall go*), or a compound sentence (e.g., *John ate a sandwich, and Mary did too*).

**compound action potential** a recording of the ACTION POTENTIALS from several axons of a nerve when different axons are stimulated together. The different amplitudes and conduction velocities of the fibers account for the compound nature of the response. See also EVOKED POTENTIAL.

**compound bilingual** see COORDINATE BILINGUAL.

**compound eye** the type of eye found in certain lower forms of animals (e.g., insects), which is composed of a number of separate visual units (ommatidia). Compare SIMPLE EYE.

**compound probability** the likeliness that two unrelated (independent) events will occur together, either simultaneously or in succession. For example, one could

calculate the compound probability of rolling a 6 twice in a row on a die, of rolling a 6 on the first turn and a 2 on the second, and so forth.

**compound reaction time** see CHOICE REACTION TIME.

**compound reflex** a set of reflexes that are evoked together.

**compound schedule of reinforcement** a procedure for studying a single response in which two or more schedules of reinforcement are arranged to alternate, to appear in succession, or to be in effect simultaneously (i.e., concurrently). See CONJOINT SCHEDULE; MIXED REINFORCEMENT SCHEDULE; MULTIPLE REINFORCEMENT SCHEDULE; TANDDEM REINFORCEMENT.

**compound sentence** see COMPLEX SENTENCE.

**compound stimulus** a stimulus comprising two or more simple stimuli that occur at the same time.

**comprehension** *n.* the act or capability of understanding something, especially the meaning of a communication. Compare APPREHENSION. See also VERBAL COMPREHENSION. —**comprehend** *vb.*

**comprehension test** **1.** a reading-ability test in which understanding is assessed by asking questions about the passages read. **2.** a test requiring individuals to state how they would deal with a given practical situation. For example, a testee might be asked what he or she would do upon finding a letter on the street that has an address written on it and that is stamped with the proper postage.

**comprehensive functional assessment** an assessment that is broad in scope, often implemented by an interdisciplinary team, and most frequently focuses on a person with intellectual or developmental disabilities. It typically incorporates findings regarding specific developmental strengths and individual preferences, specific functional and adaptive social skills that the individual needs to learn, the nature of any presenting disabilities and their causes, and the need for a wide range of services.

**comprehensive mental health center** see COMMUNITY MENTAL HEALTH CENTER.

**compressed speech** recorded speech that has been transformed so that it can be replayed without unacceptable distortion at a higher rate (in words per minute) than that at which it was originally produced. Speech compression is usually accomplished by DIGITAL coding and modifying the coded representation to preserve the characteristics of speech that are essential to its intelligibility while speeding its flow.

**compression** *n.* in neurology, pressure on the brain, spinal cord, or a nerve. Compression inside the skull raises INTRACRANIAL PRESSURE and may be caused by, for example, edema, hydrocephalus, or a tumor. Symptoms include motor disorders and disturbances of sensation, memory, or consciousness.

**compression of morbidity** the hypothesis that the impact of chronic and disabling disease on an individual may be compressed into a shorter period of time before death if the first occurrence of the disease can be delayed to a later age of onset (e.g., by reducing lifetime health risks that cause morbidity and mortality). [proposed by U.S. physician James F. Fries (1938– )]

**compromise formation** in psychoanalytic theory, the conscious form of a repressed wish or idea that has been

modified or disguised, as in a dream or symptom, so as to be unrecognizable. Thus, it represents a compromise between the demands of the ego's DEFENSES and the unconscious wish. This serves to protect the person from the perceived feeling of anxiety, conscious or unconscious.

**compulsion** *n.* a type of behavior (e.g., hand washing, checking) or a mental act (e.g., counting, praying) engaged in to reduce anxiety or distress. Typically, the individual feels driven or compelled to perform the compulsion to reduce the distress associated with an OBSESSION or to prevent a dreaded event or situation. For example, individuals with an obsession about contamination may wash their hands repetitively until their skin is cracked and bleeding. Such compulsions do not provide pleasure or gratification, although the individual may experience some temporary relief from engaging in them, and they are disproportionate or irrelevant to the feared situation that they are used to neutralize. See COUNTERCOMPULSION; OBSESSIVE-COMPULSIVE DISORDER. —**compulsive** *adj.*

**compulsion to repeat** see REPETITION COMPULSION.

**compulsive character** a personality pattern characterized by rigid, perfectionistic standards; an exaggerated sense of duty; and meticulous, obsessive attention to order and detail. Individuals of this type are sometimes humorless, parsimonious, stubborn, inhibited, rigid, and unable to relax. Also called **compulsive personality**. See also OBSESSIVE-COMPULSIVE PERSONALITY DISORDER.

**compulsive disorder** any disorder in which the individual feels forced to perform acts that are against his or her wishes or better judgment. The act may be associated with an experience of pleasure or gratification (e.g., compulsive gambling, drinking, or drug taking) or with the reduction of anxiety or distress (e.g., rituals in OBSESSIVE-COMPULSIVE DISORDER). See INTERMITTENT EXPLOSIVE DISORDER; KLEPTOMANIA; PARAPHILIA; PATHOLOGICAL GAMBLING; PYROMANIA; SUBSTANCE ABUSE; TRICHOTILLOMANIA. See also IMPULSE-CONTROL DISORDER.

**compulsive drinker** an individual who has an uncontrollable urge to drink excessively; an ALCOHOLIC. See ALCOHOL DEPENDENCE.

**compulsive eating** an irresistible drive to overeat, in some cases as a reaction to frustration or disappointment. See also BINGE-EATING DISORDER; BULIMIA NERVOSA; FOOD ADDICTION.

**compulsive exerciser** an individual who feels it is necessary to participate in moderate to high-level physical activity on a regular basis, often daily.

**compulsive gambling** see GAMBLING DISORDER; PATHOLOGICAL GAMBLING.

**compulsive laughter** persistent, inappropriate, and apparently uncontrollable laughter of which the individual may be unaware. See also INAPPROPRIATE AFFECT.

**compulsiveness** *n.* a behavior pattern associated with OBSESSIVE-COMPULSIVE DISORDER or OBSESSIVE-COMPULSIVE PERSONALITY DISORDER. See COMPULSION.

**compulsive orderliness** overconcern with everyday arrangements, such as a clean desk or dust-free house, with unbearable anxiety if there is any variation. See OBSESSIVE-COMPULSIVE DISORDER; OBSESSIVE-COMPULSIVE PERSONALITY DISORDER.

**compulsive personality** see COMPULSIVE CHARACTER.

**compulsive personality disorder** see OBSESSIVE-COMPULSIVE PERSONALITY DISORDER.

**compulsive repetition** the irresistible drive to perform needless acts, such as checking and rechecking a door to see whether it has been locked. See COMPULSION; OBSESSIVE-COMPULSIVE DISORDER.

**compulsive stealing** see KLEPTOMANIA.

**compunction** *n.* distress or guilt associated with wrongdoing or with an anticipated action or result.

**computational epistemology** see CYBERNETIC EPISTEMOLOGY.

**computational formula** the equation used to calculate values for a statistical concept. This contrasts with the DEFINITIONAL FORMULA, which is the formal verbal definition of the concept.

**computational linguistics** an interdisciplinary field of study in which techniques from computer science and artificial intelligence are used to model theories based on linguistic analysis. Computers have been used experimentally to evaluate a range of hypotheses about phonetic perception and language processing. More practical applications have included the development of automatic translation systems and programs that can simulate or transcribe human speech.

**computational metaphor** a model of the mind as a device for performing operations on symbols that are analogous to those performed by a computer.

**computational model** any account of cognitive or psychological processes that assumes that the human mind functions like a digital computer, specifically in its ability to form representations of events and objects and to carry out complex sequences of operations on these representations.

**computed tomography (CT)** a radiographic technique for quickly producing detailed, three-dimensional images of the brain or other soft tissues. An X-ray beam is passed through the tissue from many different locations, and the different patterns of radiation absorption are analyzed and synthesized by a computer. Because a **CT scan** produces many slice-by-slice pictures of the head, chest, or abdomen, it is possible to locate abnormalities, such as lesions or tumors, without exploratory surgery. Also called **computer-assisted tomography**; **computerized axial tomography (CAT)**; **computerized tomography**. See also MAGNETIC RESONANCE IMAGING.

**computer adaptive testing (CAT)** a method of computer testing for particular skills or abilities in which the test items are automatically adjusted to match the level of proficiency demonstrated by the participant. The difficulty level of the items is reduced after an incorrect answer and increased after a correct answer. The testing stops once the participant's ability has been estimated to a predetermined level of accuracy.

**computer addiction** see INTERNET ADDICTION.

**computer anxiety** strong apprehension about computers and computer use that is disproportionate to the actual threat posed by these machines. The anxiety may be related to fear of the unknown or fear of the possible outcome of trying to use a computer (e.g., failure, frustration, embarrassment, or disappointment). If the anxiety is sufficient to cause significant distress and impairment, it may

be classified as a **SPECIFIC PHOBIA**, situational type. Also called **computer phobia**.

**computer-assisted diagnosis** see **COMPUTERIZED DIAGNOSIS**.

**computer-assisted instruction (CAI)** a sophisticated offshoot of programmed learning, in which the memory-storage and retrieval capabilities of the computer are used to provide drill and practice, problem solving, simulation, and gaming forms of instruction. It is also useful for relatively individualized tutorial instruction. Also called **computer-assisted learning (CAL)**. See also **COMPUTER-MANAGED INSTRUCTION**.

**computer-assisted psychotherapy** see **COMPUTERIZED THERAPY**.

**computer-assisted testing** **1.** assessment of skills that is given on, or with the support of, a computer. It can assess the ability of an individual (usually a student or an employee) to access specific material using a computer or to interact directly with a computer in order to complete an assessment. **2.** any testing that uses a computer. Such testing does not assess computer skills, and no previous computer experience or skills are required.

**computerized assessment** the process of using a computer to obtain and evaluate psychological information about a person. The computer presents questions or tasks and then makes diagnoses and prognoses based on a comparison of the participant's responses or performance to databases of previously acquired information on many other individuals. Also called **automated assessment**.

**computerized diagnosis** the use of computer programs for cataloging, storing, comparing, and evaluating psychological and medical data as an aid to **CLINICAL DIAGNOSIS**. In view of the possible variables involved in a particular type of disorder, computerized diagnosis makes use of information based on thousands of similar or related sets of signs and symptoms in previous patients, as well as information on diagnoses and effective treatments stored in databases. Also called **computer-assisted diagnosis**. See **PROBLEM-ORIENTED RECORD**.

**computerized therapy** the use of a specially programmed computer to provide therapy, under the auspices of a trained therapist. Also called **computer-assisted psychotherapy**.

**computer literacy** the ability to understand what computers and computer networks do, how they function, and how to use them effectively for such purposes as composing and editing text, sending and receiving e-mail, and finding information through the Internet.

**computer-managed instruction** a method of instruction in which a computer is used to assist the teacher in carrying out a plan of individualized instruction. The computer processes daily data regarding the performance of each student; such data can then be used in prescribing the next instructional step for each student. The learner does not interact directly with the computer.

**computer model** a computer simulation of an external entity, such as a psychological function, for the purpose of helping to understand its components. Such models may be designed, for example, to enable a scientist to approximate, manipulate, and revise a particular human decision-making process.

**computer network** a group of computers intercon-

nected by communication lines. Computer networks vary in size and complexity from local area networks (LANs) to the global Internet. Connections between network nodes (i.e., computers) can be **WIRELESS** (for short distances) or via copper wires (as in traditional telephone lines) or optical fibers.

**computer of averaged transients** an instrument that enables the computerized averaging of several successive responses to stimuli, as recorded by **ELECTROENCEPHALOGRAPHY**, in order to raise the ratio of signal to noise so that **EVENT-RELATED POTENTIALS** can be seen. This enables the responses to be distinguished above the noise of ongoing activity. See also **AVERAGE EVOKED POTENTIAL**.

**computer phobia** see **COMPUTER ANXIETY**.

**computer programming** the process of giving coded instructions to a computer that direct it to perform a specific set of operations. The instructions are given in a formal computer programming language that the computer can read and understand. There are hierarchies of programming languages from low-level machine code and assembly languages to high-level languages, such as **FORTRAN**, **LISP**, **LOGO**, and **PROLOG**.

**computer simulation** **1.** in cognitive psychology, a technique in which a model of cognitive processes is implemented as a computer program. This technique is generally used to investigate specific theories of cognitive processing rather than to explore the more general issues that are the province of **ARTIFICIAL INTELLIGENCE**. **2.** in linguistics, see **COMPUTATIONAL LINGUISTICS**.

**computer slang** slang or jargon used in computer contexts. Examples include *flaming* to denote the sending of intemperate Internet messages.

**Comrey Personality Scales (CPS)** an inventory of individual differences in eight personality traits constructed primarily through **FACTOR ANALYSIS** and yielding scores on eight scales: trust versus defensiveness, orderliness versus lack of compulsion, social conformity versus rebelliousness, activity versus lack of energy, emotional stability versus neuroticism, extraversion versus introversion, masculinity versus femininity, and empathy versus egocentrism. Designed for individuals ages 16 years and over, it consists of 180 statements to which participants respond using a 7-point **LIKERT SCALE** format, ranging from *never to always* or from *definitely not to definitely*. [developed in 1970 by Andrew Laurence **Comrey** (1923– ), U.S. psychologist]

**COMT** abbreviation for **CATECHOL-O-METHYLTRANSFERASE**.

**Comte's paradox** an articulation, attributed by William JAMES to Auguste COMTE, of the difficulty associated with any science of human beings in which the mind becomes both the instrument of study and the object of study. That is, objective study of the rational mind by the rational mind seems paradoxical.

**COMT gene** the gene that codes for **CATECHOL-O-METHYLTRANSFERASE (COMT)**. Lack of one copy of the gene due to a condition affecting chromosome 22 (see **22Q11.2 DELETION SYNDROME**) is associated with increased risk of schizophrenia, depression, anxiety, and bipolar disorder. Other variations in the **COMT** gene may also have roles in anxiety and bipolar disorder as well as in eating disorders, obsessive-compulsive disorder, and panic disorder.

**CON** abbreviation for **CERTIFICATE OF NEED**.

**conarium** *n.* in the theory of René DESCARTES, the point of contact between mind (RES COGITANS) and body (RES EXTENSA), which he located in the pineal gland of the brain. According to some interpreters, Freud's ID represents much the same concept. See CARTESIAN DUALISM.

**conation** *n.* the proactive (as opposed to habitual) part of motivation that connects knowledge, AFFECT, drives, desires, and instincts to behavior. Along with affect and COGNITION, conation is one of the three traditionally identified components of mind. The behavioral basis of attitudes is sometimes referred to as the **conative component**. See also BASES OF AN ATTITUDE; TRIPARTITE MODEL OF ATTITUDES.

**conative** *adj.* characterized by volition or self-activation toward a goal.

**concaveation** *n.* in animal behavior, a form of SENSITIZATION whereby a virgin female, through repeated exposure to young animals, begins to display MATERNAL BEHAVIOR despite having no prior experience and undergoing none of the hormonal changes associated with pregnancy and nursing.

**Concealed Figures Test** see CLOSURE FLEXIBILITY TEST.

**concealed measure** see UNOBTUSIVE MEASURE.

**concentration** *n.* **1.** the act of bringing together or focusing, as, for example, bringing one's thought processes to bear on a central problem or subject (see ATTENTION). **2.** the proportion of a dissolved substance in a solution or mixture. —**concentrate** *vb.*

**concentration-camp syndrome** a variant form of POSTTRAUMATIC STRESS DISORDER suffered by survivors of concentration camps. Persistent stress symptoms in survivors consist of severe anxiety, defenses against anxiety, an obsessive ruminative state, psychosomatic reactions, depression, and SURVIVOR GUILT produced by remaining alive while so many others died.

**concentrative meditation** a type of MEDITATION that focuses on a specific image (e.g., a YANTRA); a specific sound, syllable, word, or phrase (see MANTRA); or a specific thought. It is the opposite of INSIGHT in that thoughts unrelated to the stimulus ideally do not enter the consciousness. See also TRANSCENDENTAL MEDITATION. Compare MINDFULNESS MEDITATION.

**concept** *n.* **1.** an idea that represents a class of objects or events or their properties, such as *cats*, *walking*, *honesty*, *blue*, or *fast*. See CONCEPTUALIZATION; CONJUNCTIVE CONCEPT; DISJUNCTIVE CONCEPT. See also ABSTRACT IDEA. **2.** in conditioning, a class of stimuli to which an organism responds in a similar or identical manner (see STIMULUS GENERALIZATION) and that the organism discriminates from other classes. —**conceptual** *adj.*

**concept acquisition** see CONCEPT FORMATION.

**concept-discovery task** a task in which the participant must try to discern the rule used to define members and nonmembers of a category. Also called **concept-identification task**. See also ABSTRACTION EXPERIMENT; CONCEPT-FORMATION TEST.

**concept formation** the process by which a person abstracts a common idea from one or more particular examples and learns the defining features or combination of features that are characteristic of a class (e.g., those describing a bird) or that are necessary and sufficient to identify members of a class of objects, relations, or actions (e.g.,

the concepts *triangle*, *above*, or *move*). Also called **concept acquisition**; **concept learning**. See also ABSTRACTION.

**concept-formation test** any test used in studying the process of concept formation and in assessing the level of formation achieved by a specific individual. See also ABSTRACTION EXPERIMENT; CONCEPT-DISCOVERY TASK.

**concept hierarchy** a collection of objects, events, or other items with common properties arranged in a multi-level structure. Concepts on the higher levels have broad meanings, whereas those at lower levels are more specific. For example, a concept hierarchy of ANXIETY DISORDERS would place that term on top, with PHOBIAS lower, and specific types of phobia (e.g., CLAUSTROPHOBIA) on the bottom.

**concept-identification task** see CONCEPT-DISCOVERY TASK.

**conception ratio** **1.** in human demography, the proportion of males to females conceived, which is about 150:100. Male embryos are more vulnerable than female embryos, and the ratio of live births (the BIRTH RATIO) is about 105 boys to 100 girls in the United States. See SEX RATIO. **2.** in animal husbandry, the ratio of the number of times a female becomes pregnant to the number of times she is mated.

**concept learning** see CONCEPT FORMATION.

**conceptual apraxia** a profound inability to use tools in an appropriate way. Conceptual apraxia is characterized by conceptual errors, in contrast to ideomotor APRAXIA, in which spatial errors are typically encountered.

**conceptual classification** in classification tasks, the grouping of items on the basis of their shared function or membership in a similar category, for example, cow, dog, horse; tractor, bus, motorcycle. Also called **categorical classification**; **nominal classification**; **similarity classification**; **taxonomic classification**. Compare COMPLEMENTARY CLASSIFICATION; IDIOSYNCRATIC CLASSIFICATION; PERCEPTUAL CLASSIFICATION.

**conceptual complexity** the degree to which an idea or an argument is difficult to understand, owing to the number of abstract concepts involved and the intricate ways in which they connect. See also COGNITIVE COMPLEXITY.

**conceptual dependency** a formalized SEMANTIC NETWORK designed for use in computer programs to capture and understand the conceptual relationships of sentences in natural (human) language. There are four primitive (or atomic) components of this network: actions, objects (picture producers), modifiers of actions, and modifiers of objects. See also COMPUTATIONAL LINGUISTICS.

**conceptual disorder** a disturbance in the thinking process or in the ability to formulate abstract ideas from generalized concepts.

**conceptual disorganization** irrelevant, rambling, or incoherent verbalizations, frequently including NEOLOGISMS and stereotyped expressions. It is one of the major signs of disorganized thought processes. See also SCHIZOPHRENIC THINKING.

**conceptual formula** see DEFINITIONAL FORMULA.

**conceptual imagery** the MENTAL REPRESENTATION of concepts or conceptual relationships. See IMAGERY.

**conceptualization** *n.* the process of forming concepts, particularly those of an abstract nature, out of experience



or learned material. See also ABSTRACT CONCEPTUALIZATION; CONCEPT FORMATION. —**conceptualize** *vb*.

**conceptually driven processing** see TOP-DOWN PROCESSING.

**conceptually guided control** a stage or level of human INFORMATION PROCESSING that is controlled by higher order constructs, such as concepts or CONCEPTUAL SYSTEMS. Conceptually guided control functions primarily to direct thinking processes toward certain well-established goals.

**conceptual model** **1.** a diagram, such as a VENN DIAGRAM or a tree diagram, used to represent in visual form the relations between concepts or between concepts and their attributes. **2.** in computing, an organizing principle that is used to structure the presentation of programs, files, and information to the end-user in ways that he or she will find conceptually familiar. Such a model is often based on a real-world analogy, as with the desktop and the spreadsheet.

**conceptual nervous system** a hypothetical model of the neurological and physiological functions of the nervous system that can be manipulated to provide analogies of behavioral activities. Critics claim that research should be concentrated on the actual nervous system rather than on this type of model. However, Donald O. HEBB pointed out that, over time, conceptual models of the nervous system have acquired more of the properties of the actual nervous system and that modeling properties of the nervous system has been fruitful in encouraging research.

**conceptual replication** see REPLICATION.

**conceptual system** the organization of a person's cognitive abilities, emotional awareness, experience, and philosophical or religious orientation into a system for understanding events, data, or experience. See also COGNITIVE STRUCTURE; FRAME.

**conceptual tempo** the pace that is typical of a person's approach to cognitive tasks, for example, a hasty rather than a deliberate approach to observing, thinking, and responding. Conceptual tempo is an aspect of COGNITIVE STYLE. See also REFLECTION-IMPULSIVITY.

**conceptual test** a memory test that involves processing the meaning of a stimulus. Conceptual tests can be used to measure both implicit memory, as in the CATEGORY PRODUCTION TEST, and explicit memory, as in FREE RECALL. Compare PERCEPTUAL TEST.

**Concerta** *n.* a trade name for METHYLPHENIDATE.

**conciliation** *n.* the act or process of reconciling the positions of individuals or groups whose interests and goals are, at least initially, in opposition or incompatible. During divorce proceedings, for example, a neutral third party may be brought in to facilitate conciliation between the spouses and thereby avoid lengthy, antagonistic legal proceedings and the attendant stress and anxiety. —**conciliate** *vb*.

**concinnity** *n.* the quality of an artistic design that features a harmonious arrangement of the various parts to each other as well as to the whole design.

**conclusion** *n.* **1.** in logic and philosophy, the proposition to which a line of argument or analysis leads. The conclusion is that which an argument is intended to establish as valid. See INFERENCE. **2.** in science, a general law or principle derived from experimental evidence by a process of INDUCTION.

**concomitance** *n.* **1.** the co-occurrence of two or more phenomena, especially such that the phenomena are essentially different manifestations of a single underlying reality. For example, a symbol and its meaning may be concomitant. According to Jungian psychology, synchronous events may be concomitant in this way (see SYNCHRONICITY). **2.** in statistics and experimental psychology, a co-occurrence between a response or outcome variable and a variable other than a predictor of interest. —**concomitant** *adj*.

**concomitant variable** see COVARIATE.

**concordance** *n.* **1.** the state or condition of being in harmony or agreement. **Affective concordance** is said to exist, for instance, when facial gestures mirror internal states of feeling, such as frowning when perplexed or annoyed, or when two or more individuals related through some condition or activity experience the same or similar emotional reactions. **2.** in TWIN STUDIES, the presence of a given trait or disorder in both members of the pair. Evidence for genetic factors in the production of the trait or disorder comes from the comparison of concordance rates between identical and fraternal twins. Compare DISCORDANCE.

**concordance rate** the percentage of pairs of twins or other blood relatives who exhibit a particular trait or disorder. Also called **concordance ratio**. See also TWIN STUDY.

**concordant identification** in psychoanalysis, a form of COUNTERTRANSFERENCE in which the analyst identifies with the patient and empathizes with the patient's experience. Also called **concordant countertransference; counteridentification**. Compare COMPLEMENTARY IDENTIFICATION. [introduced by Polish-born Argentinian psychoanalyst Heinrich Racker (1910–1961)]

**concrete attitude** a COGNITIVE STYLE that is directed to specific objects and immediate stimuli. A person who exhibits a concrete attitude tends not to make abstract comparisons and will not usually respond to abstract qualities, concepts, or categories. Compare ABSTRACT ATTITUDE. [defined by Kurt GOLDSTEIN]

**concrete image** an image that is recalled in terms of specific sense qualities, such as the taste of a particular kind of cheese or the sound of a ship's bell.

**concrete intelligence** the ability to understand and manipulate objects. It is often contrasted with ABSTRACT INTELLIGENCE and SOCIAL INTELLIGENCE.

**concreteness effect** the finding that concrete nouns (e.g., *chair*) are better remembered than abstract nouns (e.g., *love*).

**concrete operation** the ability of a growing child to mentally represent items in the physical world and to understand the logical relations between them. Concrete operational children are, for example, able to understand the concept of CLASS INCLUSION and to represent part-whole relations in the physical world correctly (e.g., to grasp that dogs are a subset of animals or houses are a subset of buildings).

**concrete operational stage** in PIAGETIAN THEORY, the third major stage of cognitive development, occurring approximately from 7 to 12 years of age, in which children can decenter their perception (see DECENTRATION), are less egocentric, and can think logically about physical objects and about specific situations or experiences involving those

objects. See also FORMAL OPERATIONAL STAGE; PREOPERATIONAL STAGE; SENSORIMOTOR STAGE.

**concrete picture** a MENTAL REPRESENTATION that is based on a specific object or event in the physical world, with little or no abstraction. Compare ABSTRACT REPRESENTATION.

**concrete thinking** thinking focused on immediate experiences and specific objects or events. It is characteristic of young children and may also be seen in people with schizophrenia and people who have suffered a brain injury, especially frontal lobe damage. Compare ABSTRACT THINKING.

**concrete word** in linguistics, a word denoting a physically real and perceptible entity, such as *tree*, *airplane*, or *James*. Compare ABSTRACT WORD.

**concretism** *n.* in the ANALYTIC PSYCHOLOGY of Carl JUNG, a type of thought or feeling that depends on immediate physical sensation and displays little or no capacity for abstraction. In some traditional societies, such thinking may manifest itself in fetishism and belief in magic. In the modern world, it may display itself as an inability to think beyond the obvious material facts of a situation.

**concretization** *n.* **1.** inability to think abstractly in which there is an overemphasis on details and immediate experience. It occurs in such conditions as dementia and schizophrenia. **2.** the process of being specific or of giving an example of a concept or relationship.

**concurrence seeking** striving to avoid disagreements and debates within a group, particularly during discussions or decision making. Concurrence seeking is pronounced in groups experiencing GROUPTHINK.

**concurrent-chains procedure** a procedure in which completion of either of two CONCURRENT SCHEDULES OF REINFORCEMENT, called the **initial links**, results in presentation of another schedule of reinforcement, called a **terminal link**, rather than primary reinforcement itself. Completion of the terminal-link schedule results in primary reinforcement. The initial links are concurrently available, in effect giving the organism an opportunity to choose between two terminal links. Once a terminal link is earned, however, it must be completed before the next period of choosing is made available.

**concurrent medical audit** see MEDICAL AUDIT.

**concurrent operants** two or more OPERANT responses that are available at the same time; they can be chosen simultaneously or alternately.

**concurrent review** an analysis of admissions to a psychiatric hospital or clinic carried out while care is being provided. It comprises certification of the necessity for admission (see ADMISSION CERTIFICATION) and assessment of the need for care to be continued (see CONTINUED-STAY REVIEW).

**concurrent schedules of reinforcement** a procedure in OPERANT CONDITIONING in which two or more separate reinforcement schedules, each associated with an independent OPERANT (response), are in effect simultaneously.

**concurrent therapy** **1.** the use of two treatments at the same time. **2.** in COUPLES THERAPY and FAMILY THERAPY, the simultaneous treatment of spouses or other family members in individual or group therapy, either by the same

therapist or different therapists. See also COMBINED THERAPY.

**concurrent validity** the extent to which one measurement is backed up by a related measurement obtained at about the same point in time. In testing, the VALIDITY of results obtained from one test (e.g., self-report of job performance) can often be assessed by comparison with a separate but related measurement (e.g., supervisor rating of job performance) collected at the same point in time. See also CRITERION VALIDITY.

**concussion** *n.* mild injury to the brain, due to mechanical trauma or ACCELERATION–DECELERATION INJURY, that disrupts brain function but is typically followed by spontaneous recovery. Concussion usually involves at least brief unconsciousness, although it may be diagnosed in the absence of unconsciousness. The symptoms may include memory loss, headache, irritability, inappropriate emotional reactions, and changes in behavior. Concussions may be classified by severity based on the period of unconsciousness or the extent of memory loss for events before and after the trauma. See HEAD INJURY.

**condensation** *n.* the fusion of multiple meanings, concepts, or emotions into one image or symbol. Condensation is particularly common in dreams, in which, for example, one dream character may fuse the dreamer's feelings toward several people, or one dream action may combine different emotional impulses.

**condition** **1.** *n.* a logical antecedent on which a conclusion is dependent or an empirical antecedent on which an event or state is dependent. A **necessary condition** is one without which the idea would not logically follow or the event would not occur. A **sufficient condition** is one that directly entails a particular conclusion or that has the power to produce a particular event regardless of other conditions. **2.** *n.* in statistics and experimental research, a category or level of a variable whose values are manipulated by a researcher. Study participants are then assigned to receive or be exposed to one or more of the different conditions. **3.** *vb.* to inculcate a response or a behavior in an organism by means of CLASSICAL CONDITIONING, OPERANT CONDITIONING, or other behaviorist paradigms (see BEHAVIORISM). The term implies that the learning is largely automatic, based on processes more like reflexes than conscious mental activity. —**conditional** *adj.*

**conditional clause** a subordinate CLAUSE that expresses a hypothesis or possibility, typically one introduced by *if* or *unless*. See also COUNTERFACTUAL.

**conditional discharge** the release of a patient from a psychiatric facility with imposition of certain conditions and limitations (such as periodically reporting to a supervisor or taking medications).

**conditional discrimination** a DISCRIMINATION in which reinforcement of a response in the presence of a stimulus depends on the presence of other stimuli. For example, in a MATCHING-TO-SAMPLE procedure, responding to a comparison stimulus that matches the sample stimulus is reinforced; that is, determining the correctness of a response depends on the sample stimulus. See also SIMULTANEOUS DISCRIMINATION; SUCCESSIVE DISCRIMINATION.

**conditional positive regard** an attitude of acceptance and esteem that others express toward an individual on a conditional basis, that is, depending on the acceptability of the individual's behavior in accordance with the others' personal standards. In his theory of personality, Carl

ROGERS proposed that although the need for positive regard is universal, conditional regard works against sound psychological development and adjustment in the recipient. Compare UNCONDITIONAL POSITIVE REGARD.

**conditional probability** the likeliness that an event will occur given that another event is known to have occurred. Conditional probability plays an important role in statistical theory. The probability of observing a particular outcome given that another outcome is known to have occurred can be derived from a CONTINGENCY TABLE. Also called **conditional likelihood**.

**conditional reasoning** reasoning that takes the form “if X, then Y,” as in *If Sam is male, then Sam is not a mother*. In formal logic, the statement that follows *if* is called the ANTECEDENT and that following *then* is called the CONSEQUENT.

**conditional strategy** the ability of organisms to develop behavioral strategies appropriate for current conditions. An experienced adult male animal, for example, might actively defend a territory and guard females (see MATE GUARDING), while a young male stays as a SATELLITE MALE, not forming or defending the territory but attempting to copulate with available females (see SNEAK MATING). If the resident male dies or disappears, the young male can rapidly change strategies to become a territory-defending male.

**conditioned** *adj.* relating to or describing behavior whose occurrence, form of display, or both is a result of experience. The two main classes of experience resulting in conditioned behavior are OPERANT CONDITIONING and CLASSICAL CONDITIONING.

**conditioned aversion** a tendency or desire to avoid one stimulus that results from its pairing with another stimulus that is experienced as unpleasant. Such an aversion may arise after a single pairing of the stimuli (see CONDITIONED TASTE AVERSION) or as part of a process of deliberate repeated pairings (as in AVERSION CONDITIONING). For example, a person who is trying to stop nail biting may paint her fingernails with a bitter substance, such that the foul taste experienced each time she chews a nail eventually leads to cessation of the behavior.

**conditioned avoidance response (CAR)** an acquired (learned) response that prevents, postpones, or reduces the frequency or intensity of an aversive stimulus. A conditioned response that stops an aversive stimulus is known as a **conditioned escape response**. For example, if a monkey learns to press a lever that turns off a loud noise, the lever press is a conditioned escape response. See AVOIDANCE CONDITIONING.

**conditioned emotional response (CER)** any negative emotional response, typically fear or anxiety, that becomes associated with a neutral stimulus as a result of CLASSICAL CONDITIONING. It is the basis for CONDITIONED SUPPRESSION.

**conditioned escape response** see CONDITIONED AVOIDANCE RESPONSE.

**conditioned inhibition** the diminution of a CONDITIONED RESPONSE that occurs on presentation of a stimulus that has previously been experienced in different circumstances.

**conditioned place preference (CPP)** a process in which experience with certain stimuli renders as reinforc-

ing the place where that experience occurred. For example, a rat might be injected with cocaine and then restricted to one side of a two-compartment chamber. After a number of trials, a test is conducted in which the rat can move freely between the two compartments. If the rat spends a majority of its time on the side in which it experienced cocaine, a CPP has been developed. Also called **place conditioning**.

**conditioned reflex** see CONDITIONED RESPONSE.

**conditioned reinforcement** see SECONDARY REINFORCEMENT.

**conditioned reinforcer** see NATURAL REINFORCER; SECONDARY REINFORCEMENT.

**conditioned response (CR)** in CLASSICAL CONDITIONING, the learned or acquired response to a conditioned stimulus. Also called **conditioned reflex**.

**conditioned stimulus (CS)** a neutral stimulus that is repeatedly associated (see PAIRING) with an UNCONDITIONED STIMULUS until it acquires the ability to elicit a response that it previously did not. In many (but not all) cases, the response elicited by the conditioned stimulus is similar to that elicited by the unconditioned stimulus. A light, for example, by being repeatedly paired with food (the unconditioned stimulus), eventually comes to elicit the same response as food (i.e., salivation) when presented alone. Also called **conditional stimulus**.

**conditioned stimulus preexposure effect** see LATENT INHIBITION.

**conditioned stimulus–unconditioned stimulus interval (CS–US interval)** the time period between a participant's exposure to a stimulus for which there has been response training (i.e., conditioning) and the participant's exposure to a stimulus for which there has been no training.

**conditioned suppression** a phenomenon that occurs during an OPERANT performance test when a CONDITIONED RESPONSE to a positive stimulus is reduced by another stimulus that is associated with an aversive stimulus. For example, a rat may be trained to press a lever to receive food. During this procedure, the rat is occasionally exposed to a series of brief electric shocks that are preceded by a tone (the conditioned stimulus). As a result, when the rat subsequently hears the tone alone, its rate of lever pressing is reduced. Conditioned suppression is also used to study CLASSICAL CONDITIONING.

**conditioned taste aversion** the association of the taste of a food or fluid with an aversive stimulus (usually gastrointestinal discomfort or illness), leading to a very rapid and long-lasting aversion to, or at the least a decreased preference for, that particular taste. Conditioned taste aversion challenges traditional theories of associative learning, since very few PAIRINGS between the food and illness are needed to produce the effect (often one pairing will suffice), the delay between experiencing the taste and then feeling ill can be relatively long (i.e., a long DELAY OF REINFORCEMENT), and the aversion is highly resistant to EXTINCTION. This brainstem-based aversion has been observed both in humans and in nonhuman animals such as raccoons and octopuses. Also called **Garcia effect**; **learned taste aversion**; **taste-aversion learning**; **toxicosis**. See also PREPAREDNESS.

**conditioning** *n.* the process by which certain kinds of experience make particular actions more or less likely. See

CLASSICAL CONDITIONING; INSTRUMENTAL CONDITIONING; OPERANT CONDITIONING.

**conditioning apparatus** in nonhuman animal research, any apparatus used in conditioning procedures. The most common conditioning apparatus is the OPERANT CHAMBER. See also OPERANT CONDITIONING CHAMBER.

**conditioning of attitudes** the formation or change of an attitude as a result of the association of an ATTITUDE OBJECT with a pleasant or unpleasant stimulus in the environment. Attitudes may be conditioned via CLASSICAL CONDITIONING or OPERANT CONDITIONING processes.

**conditioning therapy** see BEHAVIOR THERAPY.

**conditions of worth** the state in which an individual considers love and respect to be conditional on meeting the approval of others. This belief derives from the child's sense of being worthy of love on the basis of parental approval: As the individual matures, he or she may continue to feel worthy of affection and respect only when expressing desirable behaviors. See CONDITIONAL POSITIVE REGARD. [proposed by Carl ROGERS]

**condom** *n.* a sheath, usually made of latex rubber, placed over the erect penis to prevent pregnancy and to avoid sexually transmitted diseases.

**conduct disorder (CD)** in *DSM-IV-TR*, a persistent pattern of behavior that involves violating the basic rights of others and ignoring age-appropriate social standards. Specific behaviors include lying, theft, arson, running away from home, aggression, truancy, burglary, cruelty to animals, and fighting. Specifications for the disorder from *DSM-5* include callousness, lack of guilt, and a shallow affect. CD is distinguished from OPPOSITIONAL DEFIANT DISORDER by the increased severity of the behaviors and their occurrence independently of an event occasioning opposition. ATTENTION-DEFICIT/HYPERACTIVITY DISORDER frequently coexists with or is misdiagnosed as conduct disorder.

**conduction** *n.* in physiology, the transmission of excitation along a nerve, muscle, or other tissue. In a neuron, subthreshold stimulation results in DECREMENTAL CONDUCTION, whereas suprathreshold stimulation results in a propagated ACTION POTENTIAL, or nerve impulse.

**conduction aphasia** a form of APHASIA characterized by difficulty in repeating words and phrases accurately, even though language comprehension may be intact. Spontaneous speech tends to be grammatically correct but with frequent errors in the sounds of words and in finding the correct words to convey meaning. It is classically associated with lesions in the ARCUATE FASCICULUS, the tract linking the areas of the brain involved in the interpretation and control of speech, but modern research indicates that a lesion centered around the SUPRAMARGINAL GYRUS and the PLANUM TEMPORALE is responsible.

**conduction deafness** loss of hearing due to a disorder in the structures that transmit sound to the cochlea. The cause may be an injury or disease that interferes with the normal functioning of the OSSICLES. Also called **conductive deafness**. Compare CENTRAL DEAFNESS; SENSORINEURAL DEAFNESS. See AIR-BONE GAP.

**conduction time (CT)** the time required for transmission of activity, such as an ACTION POTENTIAL, between two points.

**conduction velocity** see VELOCITY OF CONDUCTION.

**conductivity** *n.* **1.** the ability of a substance to transmit energy, as in electrical conduction, thermal conduction, or skin conduction. **2.** the ability of a tissue to convey SIGNALS and respond to stimuli.

**cone** *n.* see RETINAL CONE.

**cone opsin** see IODOPSIN.

**confabulation** *n.* the falsification of memory in which gaps in recall are filled by fabrications that the individual accepts as fact. It is not typically considered to be a conscious attempt to deceive others. Confabulation occurs most frequently in KORSAKOFF'S SYNDROME and to a lesser extent in other conditions associated with neurologically based amnesia (e.g., Alzheimer's disease). In forensic contexts, eyewitnesses may resort to confabulation if they feel pressured to recall more information than they can remember. —**confabulate** *vb.*

**confederate** *n.* **1.** in an experimental situation, an aide of the experimenter who poses as a participant but whose behavior is rehearsed prior to the experiment. **2.** in parapsychology, an individual who assists a supposed PSYCHIC by covertly providing him or her with information about a client's concerns, preferences, background, or situation, thus creating or strengthening the illusion of the psychic's paranormal abilities.

**conference method** a method of PERSONNEL TRAINING in which participants work together in an attempt to resolve typical work-related problems and issues. Participants develop their problem-solving and decision-making abilities, acquire new information, and modify their attitudes in the process of pooling ideas, testing assumptions, discussing new approaches, and drawing inferences and conclusions. See also BUSINESS GAME; CASE METHOD; MULTIPLE-ROLE PLAYING; SCENARIO ANALYSIS.

**confidence interval (CI)** a range of values for a population PARAMETER that is estimated from a sample with a preset, fixed probability (known as the CONFIDENCE LEVEL) that the range will contain the true value of the parameter. The width of the confidence interval provides information about the precision of the estimate, such that a wider interval indicates relatively low precision and a narrower interval indicates relatively high precision. For example, a confidence interval for the population mean could be calculated with data obtained from a sample and would provide an estimated range of values within which the actual population mean is believed to lie. A confidence interval often is reported in addition to the POINT ESTIMATE of a population parameter.

**confidence level** a value expressing the frequency with which a given CONFIDENCE INTERVAL contains the true value of the parameter being estimated. For example, a 95% confidence level associated with a confidence interval for estimating a population mean indicates that in 95% of all estimates based on a random sample of a given size the confidence interval will contain the true value of the population mean. The particular confidence level used is up to the researcher but generally is 95% or 99%.

**confidence limit** either of the values at the upper and lower ends of a CONFIDENCE INTERVAL, which provide an estimated range for the value of a population PARAMETER. Also called **confidence bound**.

**confidentiality** *n.* a principle of PROFESSIONAL ETHICS requiring providers of mental health care or medical care to limit the disclosure of a patient's identity, his or her condi-

tion or treatment, and any data entrusted to professionals during assessment, diagnosis, and treatment. Similar protection is given to research participants and survey respondents against unauthorized access to information they reveal in confidence. See INFORMED CONSENT; TARASOFF DECISION. —**confidential** *adj.*

**configural-cue approach** an experimental approach based on the theory that the response to a compound stimulus is to its whole rather than to its individual parts; as such, it contrasts with the **stimulus-element approach**, which posits that each part of a compound stimulus is perceived the way it would be as an individual stimulus.

**configural display** see OBJECT DISPLAY.

**configural learning** learning to respond to two or more stimuli on the basis of their combination rather than on the individual experience of any of those stimuli alone. For example, if neither a tone nor a light presented separately is followed by food, but a tone–light combination is, configural learning has occurred when a conditioned response is elicited by the tone–light combination.

**configural superiority effect** in visual perception, a phenomenon in which a configuration of elements or features is easier to identify than a single feature alone. Two examples are the WORD-SUPERIORITY EFFECT and the OBJECT-SUPERIORITY EFFECT.

**configuration** *n.* **1.** an arrangement of elements or components in a particular pattern or figure. See GOODNESS OF CONFIGURATION. **2.** the usual English translation of GESTALT. —**configurational** *adj.*

**configurational analysis** an integrative psychodynamic model for case formulation, psychotherapy, and outcome evaluation. Maladaptive states of mind in the context of the client's problems, topics of concern, defenses, identity, and relationships are the focus of assessment and therapy. [developed by 20th-century U.S. psychiatrist Mardi J. Horowitz]

**confinement study** a study in a controlled environment to determine at what point physiological and psychological impairment occurs as a result of spatial restrictions. Such studies are important in space or marine exploration, during which individuals live and work in an artificial environment. The variables studied include length of time in confinement, area available, and crew size. These variables may have effects on sleep loss and ability to perform operational tasks.

**confirmable proposition** a statement or conclusion that is capable of being confirmed or falsified by experimental procedures. In LOGICAL POSITIVISM, all other propositions (except those of logic and mathematics) are considered essentially meaningless.

**confirmation** *n.* in PURPOSEIVE BEHAVIORISM, the fulfillment of an expectancy that reinforces the behavior that led to the fulfillment.

**confirmation bias** the tendency to gather evidence that confirms preexisting expectations, typically by emphasizing or pursuing supporting evidence while dismissing or failing to seek contradictory evidence.

**confirmatory data analysis** a statistical analysis designed to address one or more specific research questions, generally with the aim of confirming preconceived hypotheses. Compare EXPLORATORY DATA ANALYSIS.

**confirmatory factor analysis (CFA)** any method of

testing A PRIORI hypotheses to the effect that the relationships among a set of observed variables are due to a particular set of unobserved variables. Unlike EXPLORATORY FACTOR ANALYSIS, in which all measured (manifest) variables are examined in relation to all underlying (latent) variables, confirmatory factor analysis imposes explicit theoretical restrictions so that observed measures relate with some (often just one) latent factors but not others.

**confirmatory research** research conducted with the aim of testing one or more preexisting hypotheses. Compare EXPLORATORY RESEARCH.

**conflict** *n.* the occurrence of mutually antagonistic or opposing forces, including events, behaviors, desires, attitudes, and emotions. This general term has more specific meanings within different areas of psychology. For example, in psychoanalytic theory, it refers to the opposition between incompatible instinctual impulses or between incompatible aspects of the mental structure (i.e., the ID, EGO, and SUPEREGO) that may be a source of NEUROSIS if it results in the use of defense mechanisms other than SUBLIMATION. In interpersonal relations, conflict denotes the disagreement, discord, and friction that occur when the actions or beliefs of one or more individuals are unacceptable to and resisted by others.

**conflict behavior** behavior that results from experiencing two incompatible motivational states at the same time. It commonly occurs as a result of an APPROACH–AVOIDANCE CONFLICT, as when a hungry animal must leave shelter to feed in the presence of a predator (feeding vs. fear) or when a territorial male is in the presence of a potential mate (aggression vs. sex). Conflict behavior may be manifested in alternations of approach and retreat or in unrelated behavior (see DISPLACEMENT BEHAVIOR).

**conflict-free sphere** in EGO PSYCHOLOGY, an area of the ego that develops and functions without giving rise to internal conflict. Functions ordinarily controlled by the conflict-free sphere include speech, motility, planning, and other autonomous ego functions. Psychoanalysis is thought to increase the conflict-free sphere of the ego and therefore to free up an individual's capacities in life, the result of reducing neurotic symptoms and releasing the energy bound up in them. Also called **conflict-free area**.

**conflict of interest** a state of incompatibility among an individual's or group's various interests and motivations, particularly when professional interests and responsibilities are inconsistent with personal motives and goals. For example, psychologists who are employed by a health agency may find that their obligation to help their clients is incompatible with the agency's requirement to minimize treatment costs.

**conflict resolution** the reduction of discord and friction between individuals or groups, usually through the use of active strategies, such as CONCILIATION, NEGOTIATION, and BARGAINING. See also CONSTRUCTIVE CONFLICT RESOLUTION.

**conflict spiral** a pattern of escalating tension and discord between two or more parties. Parties in such conflicts counter one another's responses with more negative and more extreme responses.

**conflict theory** **1.** any conceptual analysis of the causes and consequences of interpersonal conflict. **2.** more specifically, a sociological approach that stresses the inevitability of conflict in any setting in which resources are un-

evenly distributed among interactants. See **REALISTIC GROUP CONFLICT THEORY**.

**confluence** *n.* a fusion or merging of several elements, for example, motives or perceptual elements. —**confluent** *adj.*

**confluence model** a controversial theory that intelligence of siblings is correlated with family size. According to this model, average intelligence generally declines as the number of children in a family increases. Intelligence is also held to decline with **BIRTH ORDER**. The one exception is an only child, whose intelligence suffers because he or she does not have an older sibling to serve as a teacher. However, many variables (e.g., spacing of children) could affect and reverse such generalizations. [proposed in 1975 by Robert B. ZAJONC and Greg Markus]

**conformity** *n.* the adjustment of one's opinions, judgments, or actions so that they become more consistent with (a) the opinions, judgments, or actions of other people or (b) the normative standards of a social group or situation. Conformity includes temporary outward acquiescence (**COMPLIANCE**) as well as more enduring private acceptance (**CONVERSION**). Compare **ANTICONFORMITY**; **NONCONFORMITY**. See also **MAJORITY INFLUENCE**; **PEER PRESSURE**.

**confound** *n.* in an experiment, an independent variable that is conceptually distinct but empirically inseparable from one or more other independent variables. **Confounding** makes it impossible to differentiate that variable's effects in isolation from its effects in conjunction with other variables. For example, in a study of high-school student achievement, the type of school (e.g., private vs. public) that a student attended prior to high school and his or her prior academic achievements in that context are confounds. Also called **confounding variable**.

**confounded comparison** a comparison of values obtained by different experimental groups on an outcome or dependent variable when two or more predictor or independent variables vary simultaneously across the groups. In such cases it is impossible to differentiate the effects of the independent variables. For example, consider a researcher studying how material presentation format (lecture vs. computer) and teacher sex (male vs. female) affect student learning. If the investigator were to examine data for only two groups of students (those who had a male teacher and lecture presentation format vs. those who had a female teacher and computer presentation format), he or she would have created a confounded comparison.

**confounded effects** the indivisible effects of two or more predictor or independent variables on a single response or dependent variable. That is, the unique influence of one predictor cannot be separated out from that of the others. For example, assume a researcher is examining the effectiveness of a hunger-reduction pill for weight loss. If some of the participants receiving the pill discover they are part of the treatment group and concurrently adopt better eating habits and increase their exercise levels, these additional healthy activities will also affect weight loss. Since those in the control group (receiving a **PLACEBO** sugar pill) are not engaging in these same supplemental activities, effects of eating habits, exercise levels, and the actual treatment will have become confounded.

**confounding variable** see **CONFOUND**.

**confrontation** *n.* 1. an argument or hostile disagreement. 2. the act of directly facing, or being encouraged or required to face, a difficult situation, realization, discrep-

ancy, or contradiction involving information, beliefs, attitudes, or behavior. Confrontational techniques may be used therapeutically, for example, to reveal and invite self-examination of inconsistencies in a client's reported and actual behavior, but they have a potential for disruptive as well as constructive effects. 3. in **INDIVIDUAL PSYCHOLOGY**, a statement or question calculated to motivate the client to make a decision or face the reality of a situation. —**confrontational** *adj.*

**confrontational method** an approach that aims to change behavior in individuals by aggressively compelling them to acknowledge their failures and weaknesses. Such methods are used, for example, in residential drug programs staffed by ex-addicts. Similar but less aggressive methods are used in **ENCOUNTER GROUPS** as a means of increasing awareness and modifying behavior. Research has not supported the efficacy of confrontational approaches, and many individuals subjected to them respond with increased resistance to change.

**confrontation naming** any procedure that requires the naming of an object presented visually or from its pictorial representation—that is, an individual is “confronted” with a stimulus and asked to name it.

**confusability index** in ergonomics, any quantity used to express the degree to which a symbol, graphic, display item, or other object is capable of being misunderstood by the user or assigned a meaning other than its intended meaning.

**confusion** *n.* a mental disturbance characterized by bewilderment, inability to think clearly or act decisively, and **DISORIENTATION** for time, place, and person. Also called **mental confusion**.

**confusional arousal** a **PARASOMNIA** in which an individual partially awakens during **NREM SLEEP**, appears fully awake but is unresponsive to or exhibits impaired orientation to environmental stimuli, and has no memory afterward for events occurring during an episode. Individuals experiencing a severe episode may become aggressive toward others or self-injurious. Confusional arousal is especially common in children but can occur in adults as well. Also called **sleep disorientation**; **sleep drunkenness**; **somnolentia**.

**confusional psychosis** a form of **CYCLOID PSYCHOSIS** in which disturbances of cognitive processes are prominent and accompanied by a labile (highly changeable) emotional state characterized alternately by manifest anxiety, with the individual often misidentifying other people, and by mutism and greatly decreased movement. The latter differs from **CATATONIC STUPOR** in that self-care and spontaneity are preserved and negativism is absent. [defined by German psychiatrist Karl Leonhard (1904–1988)]

**confusional state** a state of impaired mental functioning in which awareness is retained but with loss of cognitive coherence and orientation to time, place, and sometimes identity. It may be accompanied by rambling or incoherent speech, visual hallucinations, and **PSYCHOMOTOR** disturbances. It can arise from a wide variety of causes, including brain lesions, trauma, toxicity, medications, neurotransmitter imbalances, sleep disturbances, sedation, or fever. See also **DELIRIUM**.

**confusion effect** an **ANTIPREDATOR BEHAVIOR** in which each of several animals moves or vocalizes in a highly random way, making it difficult for predators to locate and attack any one individual. See also **DILUTION EFFECT**.

**confusion matrix** see CLASSIFICATION TABLE.

**confusion of responsibility** the tendency for bystanders to refrain from helping in both emergencies and nonemergencies in order to avoid being blamed by others for causing the problem. This is a contributing factor in the BYSTANDER EFFECT. See also DIFFUSION OF RESPONSIBILITY.

**congener** *n.* any of a variety of byproducts of the fermentation process found in alcoholic drinks, such as acetone, acetaldehyde, propanol, and glycols. Congeners determine the characteristics of specific alcoholic drinks, including flavor, color, odor, and possibly severity of hangover.

**congenital** *adj.* denoting a condition or disorder that is present at birth. Also called **connate**. Compare ADVENTITIOUS.

**congenital adrenal hyperplasia (CAH)** an inherited disorder caused by mutations that encode for enzymes involved in one of the various steps of steroid hormone synthesis in the adrenal gland. These defects result in the absence or decreased synthesis of CORTISOL from its cholesterol precursor and a concomitant abnormal increase in the production of androgens. Symptoms in females include ambiguous genitalia and masculinization of secondary sex characteristics; in males, they include premature puberty. Also called (in older literature especially) **adrenogenital syndrome**.

**congenital anomaly** see CONGENITAL DEFECT.

**congenital cataract** opacity of the lens of the eye that is present at birth or occurs soon after birth. Its effect is to scatter light and blur the image on the retina, which prohibits the development of pattern vision because of visual deprivation. Central vision is always affected, and peripheral vision may also be reduced. Congenital cataract can occur in one or both eyes; it may be hereditary or caused by congenital infection or metabolic disorders.

**congenital character** a character or trait that is present at birth. It may be hereditary or result from the influence of factors experienced during fetal development or delivery.

**congenital color blindness** see COLOR BLINDNESS.

**congenital deafness** deafness that exists from birth, regardless of the cause. Compare ADVENTITIOUS DEAFNESS.

**congenital defect** any abnormality present at birth, regardless of the cause. It may be caused by faulty fetal development (e.g., spina bifida, cleft palate), hereditary factors (e.g., Huntington's disease), chromosomal aberration (e.g., Down syndrome), maternal conditions affecting the developing fetus (e.g., fetal alcohol syndrome), metabolic defects (e.g., phenylketonuria), or injury to the brain before or during birth (e.g., some cases of cerebral palsy). A congenital defect may not be apparent until several years after birth (e.g., an allergy or a metabolic disorder) or even until after the individual has reached adulthood (e.g., Huntington's disease). Also called **birth defect**; **congenital anomaly**.

**congenital glaucoma** an eye disease, present at birth, in which a sustained, abnormally high fluid pressure within the eyeball damages the optic nerve (see GLAUCOMA). This causes enlargement of the eye (**buphthalmos**). In 70% of cases, both eyes are affected; the condition is found more frequently in males than in females and carries a 5% increased risk of occurrence in siblings and offspring. Congenital glaucoma may occur in association with many

developmental syndromes (e.g., ANIRIDIA, STURGE-WEBER SYNDROME). Decreased vision may result from optic atrophy, corneal clouding, astigmatism, visual deprivation, high myopia, and strabismus. In addition, children typically show PHOTOPHOBIA and BLEPHAROSPASM.

**congenital hypothyroidism** a condition occurring when the thyroid gland fails to develop or function properly in a newborn. If untreated, congenital hypothyroidism can lead to intellectual disability and abnormal growth. If treatment begins in the first month after birth, infants usually develop normally. See CRETINISM.

**congenital oculomotor apraxia** a condition, present at birth, in which a child is unable to fixate objects normally (see OCULOMOTOR APRAXIA). It is characterized by the absence of SACCADES and SMOOTH-PURSUIT EYE MOVEMENTS in the horizontal plane, but vertical eye movements are preserved: Children with this condition are often mistakenly thought to be blind. Between the ages of 4 and 6 months, they develop thrusting, horizontal head movements, sometimes blinking prominently or rubbing their eyelids when they attempt to change fixation. The cause of congenital oculomotor apraxia is unknown, but there is usually an improvement with age.

**congenital rubella syndrome** a complex of congenital defects in infants whose mothers were infected by the rubella virus early in pregnancy. The defects may include deafness, cataracts, heart disease, and microcephaly (small head). Neurological abnormalities occur in about 80% of affected individuals, and brain weight is usually subnormal. Psychomotor retardation, marked by general lack of response to stimuli, and intellectual impairment are common. In developed nations, rubella vaccination has resulted in a massive decline in the occurrence of this syndrome. See also GERMAN MEASLES.

**congenital sensory neuropathy with anhidrosis** a disorder marked by the absence of pain perception. Severe injuries, such as multiple fractures, may go untreated because they cause no pain. Affected individuals tend to show delayed intellectual development, with IQs below 80. Skin biopsies show normal but nonfunctional sweat glands.

**congenital trichomegaly** see TRICHOMEGALY-RETINAL DEGENERATION SYNDROME.

**congenital visual agnosia** a form of VISUAL AGNOSIA that is present at birth, due to abnormal development of those parts of the brain responsible for the visual identification of objects, faces, or both. Congenital visual agnosia represents a specific visual cognitive disorder that cannot be explained by visual, cognitive, or language deficits. Also called **developmental visual agnosia**.

**congenital visual impairment** partial or total visual impairment already present at birth or occurring soon after birth. Major causes are infections, bilateral cataracts, and prematurity. Unless specially stimulated, children with this impairment are likely to show delay in sensory, motor, and social development. Compare ADVENTITIOUS VISUAL IMPAIRMENT.

**congruence** *n.* **1.** in general, agreement, harmony, or conformity. **2.** a match between psychological attributes and behavior. **3.** in the phenomenological personality theory of Carl ROGERS, (a) the need for a therapist to act in accordance with his or her true feelings rather than with a stylized image of a therapist or (b) the conscious inte-

gration of an experience into the self. **4.** in environmental psychology, see PERSON–ENVIRONMENT INTERACTION. —**congruent** *adj.*

**congruent validity** see CONVERGENT VALIDITY.

**congruity theory** a COGNITIVE CONSISTENCY THEORY that focuses on the role of persuasive communications in attitude change. Congruity theory is similar to BALANCE THEORY in that it postulates that people tend to prefer elements within a cognitive system to be internally consistent with one another. Accordingly, if the person receiving a persuasive communication has a negative attitude to the content of the message but a positive attitude to the source of the message, or vice versa, then he or she will be motivated to revise both of these attitudes in some degree in order to restore congruity. Congruity theory differs from balance theory in that it takes into account gradations of evaluation of elements and therefore makes more precise predictions regarding the magnitude of change required to restore congruity among elements. [first proposed by U.S. psychologists Charles OSGOOD and Percy Tannenbaum (1927–2009)]

**CONJ** abbreviation for CONJUNCTIVE REINFORCEMENT.

**conjoined twins** MONOZYGOTIC TWINS whose bodies join or fail to separate completely during embryonic life; the exact mechanism and cause are not understood. Many conjoined twins are stillborn or die shortly after birth. Conjoined twins may have two bodies that are attached at the rib cage, head, or other location; alternatively, they may share one torso, limbs, or some internal organs. In some cases, surgical separation is possible. The popular name, **Siamese twins**, derives from the brothers Eng and Chang (1811–1874), who were born in Thailand (Siam) and exhibited in sideshows.

**conjoint analysis** a method of assessing behavioral choices in which participants are compared on pairs of attributes that have been selected by the researcher as potential explanations or predictors of such choices. For example, an investigator looking at vacation preferences might choose to examine such attributes as warm versus cold climates, hotels versus bed-and-breakfast accommodations, destinations in the United States versus destinations in Europe, and so forth. Conjoint analysis is used particularly in studies of consumer decision making.

**conjoint behavioral consultation** see BEHAVIORAL CONSULTATION.

**conjoint schedule** a type of COMPOUND SCHEDULE OF REINFORCEMENT under which two or more schedules of reinforcement operate simultaneously for a single response.

**conjoint therapy** therapy in which the partners in a relationship or members of a family are treated together in joint sessions by one or more therapists, instead of being treated separately. Also called **conjoint counseling**. See also COUPLES THERAPY; FAMILY THERAPY.

**conjugate movements** coordinated movements of the two eyes.

**conjugate reinforcement** a REINFORCEMENT CONTINGENCY in which some aspect of the reinforcer (e.g., its magnitude) varies systematically with some property of behavior (e.g., rate or force).

**conjunction** *n.* in linguistics, a FUNCTION WORD that serves to conjoin two or more sentence constituents or sentences, the most common being *and*, as in *John and Mary*

*got married*. Other common conjunctions include *but*, *because*, *or*, and *if*. See COORDINATION.

**conjunction search** a search task in which the target has two or more relevant features. According to FEATURE-INTEGRATION THEORY, conjunction search proceeds in a serial manner.

**conjunctival reflex** the automatic closing of the eyelid when the SCLERA is stimulated.

**conjunctive concept** a concept that is defined by a set of attributes, every member of which must be present for the concept to apply. For example, the concept *brother* requires the joint presence of the attributes (a) male and (b) sibling, neither of which may be omitted. Compare DISJUNCTIVE CONCEPT.

**conjunctive motivation** the drive to achieve true and lasting (rather than temporary or substitute) satisfaction. Compare DISJUNCTIVE MOTIVATION. [defined by Harry Stack SULLIVAN]

**conjunctive reinforcement (CONJ)** a type of INTERMITTENT REINFORCEMENT in which two or more SCHEDULES OF REINFORCEMENT must be completed before reinforcement can be given. The order in which the schedules are completed is irrelevant. Also called **conjunctive reinforcement schedule**; **conjunctive schedule of reinforcement**.

**conjunctive task** a group task or project that cannot be completed successfully until all members of the group have completed their portion of the job (e.g., a factory assembly line). This means that the speed and quality of the work are determined by the least skilled member. Compare ADDITIVE TASK; COMPENSATORY TASK; DISJUNCTIVE TASK.

**connate** *adj.* see CONGENITAL.

**connected discourse** a relatively long and integrated unit of language, such as a written argument or spoken conversation. See DISCOURSE ANALYSIS.

**connectionism** *n.* **1.** an approach that views human cognitive processes in terms of massively parallel cooperative and competitive interactions among large numbers of simple neuronlike computational units. Although each unit exhibits nonlinear spatial and temporal summation, units and connections are not generally to be taken as corresponding directly to individual neurons and synapses. See also NEURAL NETWORK; PARALLEL DISTRIBUTED PROCESSING. **2.** as used by Edward L. THORNDIKE, the concept that learning involves the acquisition of neural links, or connections, between stimulus and response. —**connectionist** *adj.*

**connectionist model** any of a class of theories hypothesizing that knowledge is encoded by the connections among representations stored in the brain rather than in the representations themselves. Connectionist models suggest that knowledge is distributed rather than being localized and that it is retrieved through SPREADING ACTIVATION among connections. The connectionist model concept has been extended to artificial intelligence, particularly to its NEURAL NETWORK models of problem solving. Compare INFORMATION-PROCESSING MODEL.

**connector neuron** see INTERNEURON.

**Conners' Comprehensive Behavior Rating Scales (Conners CBRs)** a questionnaire that assesses a variety of emotional, behavioral, and academic problems in those 6 to 18 years of age and aids in the identification



of certain disorders. It includes a 203-item parent form, a 204-item teacher form, and a 179-item self-report, and it provides evaluations in nine areas: emotional distress, aggressive behaviors, language and math difficulties, hyperactivity–impulsivity, social problems, separation fears, perfectionist and compulsive behaviors, violence potential, and physical symptoms. [originally developed in 2008 by C. Keith **Conners**, U.S. clinical psychologist]

**Conners' Rating Scales (CRS)** a questionnaire used to assess ATTENTION-DEFICIT/HYPERACTIVITY DISORDER and diagnose the most common comorbid disorders in those 6 to 18 years of age. It includes a 110-item parent form, a 115-item teacher form, and a 99-item self-report, and it provides evaluations in seven areas: inattention, hyperactivity–impulsivity, learning problems, executive functioning, aggression, peer relations, and family relations. Participants respond to items—such as “argues with adults” for parents, “talks excessively” for teachers, and “I break the rules” for self-report—using the four rating options of *not at all*, *just a little*, *pretty much*, or *very much*. This widely used instrument was originally published in 1989 and subsequently revised in 1997 (**Conners' Rating Scales–Revised; CRS-R**) and in 2008 (**Conners' Third Edition; Conners 3**). [developed by C. Keith **Conners**]

**connotative meaning** see DENOTATIVE MEANING.

**Conn's syndrome** see ALDOSTERONE. [Jerome W. **Conn** (1907–1994), U.S. physician]

**CONOPS** acronym for CONTINUOUS OPERATIONS.

**consanguineous family** see EXTENDED FAMILY.

**consanguinity** *n.* a biological relationship between two or more individuals who are descended from a common ancestor. Compare AFFINITY.

**conscience** *n.* an individual's sense of right and wrong or of transgression against moral values. In psychoanalysis, conscience is the SUPEREGO, or ethical component of personality, which acts as judge and critic of one's actions and attitudes. More recent biological approaches suggest that the capacity of conscience may be neurologically based, whereas psychosocial approaches emphasize the role of learning in the development of conscience and its influence in the formation of groups and societies. See also KOHLBERG'S THEORY OF MORAL DEVELOPMENT; PIAGETIAN THEORY.

**conscientiousness** *n.* the tendency to be organized, responsible, and hardworking, construed as one end of a dimension of individual differences (conscientiousness vs. lack of direction) in the BIG FIVE PERSONALITY MODEL. It is also a dimension in the FIVE-FACTOR PERSONALITY MODEL. Also called **industriousness**. —**conscientious** *adj.*

**conscientious objector** an individual who is opposed to war and preparations for war and who refuses to serve in the armed forces for religious reasons or for other beliefs of conscience.

**conscious (Cs)** **1.** *adj.* relating to or marked by awareness or consciousness. **2.** *n.* in the classical psychoanalytic theory of Sigmund FREUD, the region of the psyche that contains thoughts, feelings, perceptions, and other aspects of mental life currently present in awareness. The content of the conscious is thus inherently transitory and continuously changing as the person shifts the focus of his or her attention. Compare PRECONSCIOUS; SUBCONSCIOUS; UNCONSCIOUS.

**conscious access hypothesis** the notion that a primary function of consciousness is to mobilize and integrate brain functions that are otherwise separate and independent. This hypothesis is part of GLOBAL WORKSPACE THEORY.

**conscious automatism** see EPIPHENOMENALISM.

**conscious intention** a purpose or goal that one has explicitly chosen to pursue. Compare UNCONSCIOUS INTENTION.

**conscious memory** see DECLARATIVE MEMORY; EXPLICIT MEMORY.

**conscious mentalism** any theory that posits the reality of purely mental phenomena, such as thinking, feeling, desiring, preferring, and (particularly) intention, holding that these mental phenomena are the chief causes of behavior and that they are available to the conscious mind. The rise of BEHAVIORISM was largely a reaction against MENTALISM as an explanation for behavior. Although most forms of conscious mentalism hold that mental phenomena have a nonmaterial existence, some recent mentalistic positions have been materialistic, accepting that mental states and processes have their origin in physical states and processes. Compare ELIMINATIVISM; EPIPHENOMENALISM; REDUCTIONISM.

**conscious moment** the present moment of experience, often thought to be about 2 to 4 seconds in duration, the approximate decay period for conscious sensory percepts that are not susceptible to longer term recall. WORKING MEMORY is believed to extend the available present to 10 to 30 seconds. See also SPECIOUS PRESENT.

**consciousness** *n.* **1.** the state of being conscious. **2.** an organism's AWARENESS of something either internal or external to itself. **3.** the waking state (see WAKEFULNESS). **4.** in medicine and brain science, the distinctive electrical activity of the waking brain, as recorded via scalp electroencephalogram, that is commonly used to identify conscious states and their pathologies.

Beyond these succinct, in some cases everyday, senses of the term, there are intricate philosophical and research controversies over the concept of consciousness and multiple perspectives about its meaning. Broadly, these interpretations divide along two (although not always mutually exclusive) major lines: (a) those proposed by scholars on the basis of function or behavior (i.e., consciousness viewed “from the outside”—the observable organism); and (b) those proposed by scholars on the basis of experience or subjectivity (i.e., consciousness viewed “from the inside”—the mind). The former generally represents the reductionist or materialist perspective (see MATERIALISM), whereas the latter generally represents the immaterialist perspective (see IMMATERIALISM). For example, functional or behavioral interpretations tend to define consciousness in terms of physical, neurobiological, and cognitive processes, such as the ability to discriminate stimuli, to monitor internal states, to control behavior, and to respond to the environment. According particularly to this view, the **contents of consciousness** are assessed through their ability to be reported accurately and verifiably (see REPORTABILITY), although recent brain imaging research suggests that brain indices of conscious contents may become available.

Experiential or subjective interpretations, however, tend to define consciousness in terms of mental imagery; intuition; subjective experience as related to sensations, perceptions, emotions, moods, and dreams; self-awareness;

awareness of awareness itself and of the unity between the self and others and the physical world; STREAM OF CONSCIOUSNESS; and other aspects of private experience. According to this view, the contents of consciousness can be assessed to some extent by their reportability but must also, given their phenomenological nature, rely on INTROSPECTION. See also ALTERED STATE OF CONSCIOUSNESS; EVOLUTION OF CONSCIOUSNESS.

**consciousness-altering substance** any PSYCHOACTIVE DRUG that affects conscious experience and perception.

**consciousness of freedom** the sense of choice people tend to experience in making decisions and controlling actions in the absence of overt coercion. It may be the intuitive basis for the widespread belief in FREE WILL.

**consciousness raising** a process, often used in group discussion, directed toward greater awareness of (a) oneself, such as one's condition, needs, values, and goals; or (b) a political or social issue, such as discrimination against a particular group of people.

**consciousness studies** a multidisciplinary field that combines approaches from cognitive science, neuropsychology, and PHILOSOPHY OF MIND to investigate the nature of CONSCIOUSNESS. Major concerns include the relationship of the mind to the body (see MIND–BODY PROBLEM), the HARD PROBLEM of subjective experience, the significance of ALTERED STATES OF CONSCIOUSNESS, and the possibility of consciousness in computers or other manmade systems (see MACHINE CONSCIOUSNESS).

**conscious process** a mental operation of which a person is explicitly aware and often in control. Compare UNCONSCIOUS PROCESS. See also AUTOMATICITY.

**conscious resistance** in psychoanalysis, the patient's deliberate withholding of unconscious material that has newly risen into consciousness. This withholding tends to occur because of shame, fear of rejection, or distrust of the analyst.

**consensual drift** the tendency for two or more observers who are working together to depart gradually from accuracy or an agreed standard, such that they are making errors in the same direction and to the same extent. See OBSERVER DRIFT.

**consensual eye reflex** a phenomenon in which the pupil of a shaded eye contracts when the other eye is stimulated by bright light. Also called **consensual light reflex**.

**consensual validation** the process by which a therapist helps a client check the accuracy of his or her perception or the results of his or her experience by comparing it with those of others, often in the context of GROUP THERAPY.

**consensus** *n.* general agreement among the members of a group, especially when making an appraisal or decision. In tests of PERSON PERCEPTION, a consensus that a target person has a certain trait can act as a standard against which to compare the self-related biases of those who disagree with the group view. See also FALSE-CONSENSUS EFFECT.

**consent** *n.* voluntary assent or approval given by an individual: specifically, permission granted by an individual for medical or psychological treatment, participation in research, or both. Individuals should be fully informed about the treatment or study and its risks and potential benefits (see INFORMED CONSENT).

**consentience** *n.* a lesser form of consciousness attributed to nonhuman animals.

**consequence** *vb.* to establish a consequence to a behavior. If the behavior becomes more probable, consequence is said to have resulted in REINFORCEMENT. If the behavior becomes less probable, consequence has resulted in PUNISHMENT. —**consequation** *n.*

**consequent** *n.* **1.** an event, state, or circumstance that follows from some other event, state, or circumstance. **2.** in a conditional proposition of the *if . . . then* form, the statement that follows the connective *then*. The consequent is what is expected to be the case given that the **antecedent** (the statement following *if*) is true. For example, in the conditional proposition, *If Socrates is a man, then he is mortal*, the statement *he is mortal* is the consequent.

**consequent variable** a variable that is correlated with a primary outcome or DEPENDENT VARIABLE and whose value is predicted by that outcome variable. For example, in studies examining the influence of teaching style on student academic achievement, student motivation may be a consequent variable of achievement. Compare ANTECEDENT VARIABLE.

**conservation** *n.* the awareness that physical quantities do not change in amount when they are altered in appearance, such as when water is poured from a wide, short beaker into a thin, tall one. According to PIAGETIAN THEORY, children become capable of this mental operation in the CONCRETE OPERATIONAL STAGE. See also REVERSIBILITY.

**conservation psychology** a subfield of psychology that seeks to understand the attitudes and behavior of individuals and groups toward the natural environment so as to promote their use of environmentally sustainable practices. Because of the highly diverse categories of behavior being studied, conservation psychologists generally focus on specific actions, such as paper recycling, rather than general tendencies. Although related to ENVIRONMENTAL PSYCHOLOGY, conservation psychology is distinct in its orientation toward protecting ecosystems and preserving resources while ensuring quality of life for humans and other species.

**conservation withdrawal** a response to emotional or physical stressors (or both) in which a person tends to withdraw from family and friends and to have less energy and strength for activities. A means of conserving energy and recouping psychological and physical strength, this response resembles symptoms experienced as part of a MAJOR DEPRESSIVE EPISODE.

**conservatism** *n.* an attitude characterized by a positive regard for the past or the status quo (e.g., established principles and procedures) and sometimes, but not necessarily or wholly, by dislike or distrust of change. —**conservative** *adj.*

**conservative** *adj.* describing statistical methods that have a reduced likelihood of error, particularly of incorrectly rejecting the NULL HYPOTHESIS, but that are less capable of detecting significant relationships among variables. In other words, conservative approaches have less POWER and thus tend to underestimate associations or effects.

**conservatorship** *n.* a legal arrangement by which an individual is appointed by a court to protect the interests and property of a person who is unable by reason of a physical or mental condition to take full responsibility for

managing his or her own affairs. See also LIMITED GUARDIANSHIP.

**consideration** *n.* in leadership theory, a component of effective leadership that involves showing concern for the feelings of subordinates, thereby reducing conflict, maintaining positive relationships, and enhancing feelings of satisfaction and trust in the group. Compare INITIATING STRUCTURE.

**consilience** *n.* the view that the laws of physics and the rules of biological evolution underlie all aspects of human existence. All human endeavor should reflect these influences and exhibit a unity on the basis of a few basic scientific principles arising from them. [proposed by U.S. biologist Edward O. Wilson (1929– ) in his book *Consilience: The Unity of Knowledge* (1998)]

**consistency check** a method often built into an experimental or statistical procedure to verify that data are accurate or that computations have been done correctly. For example, questionnaire items with slightly different wording but identical meaning should be answered by individuals in the same way, and respondents claiming to have a high educational degree should be of a certain age.

**consistency motive** the desire to confirm one's current beliefs about one's self, including experimentally induced beliefs. Self-consistency strivings are thought to minimize discomfort associated with disjunctions between different aspects of self-knowledge. Compare SELF-ASSESSMENT MOTIVE; SELF-ENHANCEMENT MOTIVE. See also SELF-VERIFICATION MOTIVE.

**consistency theory** a class of social psychological theory holding that people are chiefly motivated by a desire to maintain congruence or consistency among their cognitions. Originally introduced by Fritz HEIDER, Leon FESTINGER, and others, consistency theory was first applied specifically to work behavior by Abraham K. Korman (1933– ) in 1970. Korman's theory is based on a two-point premise: a balance notion and a self-image standard. The theory states that workers will engage in, and find satisfying, behaviors that maximize their sense of cognitive balance and will be motivated to perform in a manner consistent with their self-image. Also called **self-consistency theory**. See CONSISTENCY MOTIVE; SELF-VERIFICATION MOTIVE.

**consistent estimator** an ESTIMATOR calculated from sample data whose value becomes more and more representative of the true quantity in the larger population as the sample size increases. That is, a consistent estimator is one for which larger samples result in a reduction of BIAS. An example is the MEAN: As the size of the sample from which it is calculated increases, the obtained value more closely approximates the actual value in the population it is intended to represent.

**consistent mapping** a condition of a SEARCH task in which a given stimulus is either (a) always a target or (b) always one of the DISTRACTOR stimuli among which the target is embedded: It is never a target at one time and a distractor at another. Consistent mapping usually produces a much more efficient search performance. Compare VARIED MAPPING.

**consistent missing** in parapsychology experiments using ZENER CARDS or similar targets, the phenomenon in which a participant's "calls," or guesses, are consistently wrong or significantly below chance expectations. Some

people attribute such systematic failure to processing error or a conscious or nonconscious reluctance to confirm psychic ability. See also PSI-MISSING.

**consolidation** *n.* the neurobiological processes by which a permanent memory is formed following a learning experience. See PERSEVERATION–CONSOLIDATION HYPOTHESIS.

**consolidation hypothesis** see PERSEVERATION–CONSOLIDATION HYPOTHESIS.

**consolidation period** the time following a learning experience during which a permanent memory for the experience develops. According to different theories, the consolidation of long-term memory is said to take from seconds to days.

**consolidation theory** see SPACING EFFECT.

**consonance** *n.* **1.** the quality of harmony between elements, for example, in music. **2.** in communication, harmony between content (denotative meaning) and intent (connotative meaning); for example, if a talk on the subject of peace is uttered in peaceful tones, content and intent agree and the communication is said to possess consonance. **3.** in social psychology, the extent to which the components of an attitude are internally consistent or in agreement with each other. See COGNITIVE CONSONANCE.

**consonant** **1.** *n.* a VOICED or UNVOICED speech sound that is produced when the vocal tract is partly or wholly constricted. **2.** *n.* one of the letters of the alphabet used to represent these sounds in writing. Compare VOWEL. **3.** *adj.* characterized by or exhibiting consonance, or harmony.

**consonant trigram** three consonants, which normally do not spell a word, used in verbal learning experiments (e.g., JCL). See NONSENSE SYLLABLE. See also AUDITORY CONSONANT TRIGRAM.

**Consonar** *n.* a trade name for BROFAROMINE.

**conspecific** **1.** *adj.* belonging to the same species. **2.** *n.* a member of the same species.

**conspicuity** *n.* the ability of an object to attract attention. In attention studies, when a participant searches for a target among DISTRACTORS in a visual display, a target that has conspicuity will tend to be detected rapidly. See POP-OUT; SALIENT.

**conspicuous consumption** see CONSUMERISM.

**constancy** *n.* see PERCEPTUAL CONSTANCY.

**constancy law** see PRINCIPLE OF CONSTANCY.

**constancy of the IQ** a tendency for IQ results to remain approximately the same when the same or a similar test is administered. IQ tends, on average, to remain remarkably constant throughout life, starting after infancy and lasting until old age, when there are often declines (starting roughly 10 years before death). Measures of intelligence in infancy, such as of preference for novelty and of recognition memory, suggest that even infant intelligence may predict intelligence in later childhood and adulthood. However, radical changes in environment can result in radical changes in IQ, as when children are adopted out of orphanages or families in which they have experienced severe privation. Usually, such adoptions produce larger changes in IQ if they occur earlier (e.g., by age 2) rather than later.

**constancy principle** the general principle that psychic forces and energies tend to remain in a steady or balanced

state or tend to seek a return to a state of balance or of decreased energy. The idea is related to other general conceptions of constancy found in many scientific fields. In the psychology of Sigmund FREUD, constancy refers specifically to the tendency of psychic energy, or LIBIDO, to seek a homeostatic or balanced state. The same principle lies behind Freud's notion of CATHARSIS.

**constancy scaling** the mental readjustment of a stimulus attribute (most commonly size) so that the stimulus is perceived as unaffected by the viewing conditions. For example, the small retinal angle subtended by a person seen in the distance is mentally scaled to a larger size so that the person is perceived to be of normal size rather than tiny.

**constant** **1.** *n.* in mathematics, a fixed quantity that remains unchanged during a specified operation or series of operations. For example, the element *a* in the REGRESSION EQUATION  $y = a + bx + e$  is a constant. Compare VARIABLE. **2.** *adj.* unvarying or continual.

**constant comparative analysis** a procedure for evaluating QUALITATIVE DATA in which the information is coded and compared across categories, patterns are identified, and these patterns are refined as new data are obtained. For example, a researcher might use constant comparative analysis to assess responses to interview questions, creating categories of answers according to the perspectives expressed, examining their different items, and integrating categories or revising their properties before formulating a theory. Also called **constant-comparison method**.

**constant error** a SYSTEMATIC ERROR in some particular direction. Constant error is computed as the average positive or negative difference between the observed and actual values along a dimension of interest. For example, if a weight of 1 kg is judged on average to be 1.5 kg, and a weight of 2 kg is judged to be 2.5 kg, the constant error is 500 g. See also ABSOLUTE ERROR; RANDOM ERROR.

**constant stimulus method** see METHOD OF CONSTANT STIMULI.

**constellation** *n.* in cognitive psychology, a group of ideas with a common theme or association. —**constellatory** *adj.*

**constipation** *n.* difficult or infrequent excretion of feces. The normal frequency of human bowel movements varies from three times a day to one every 3 days. In addition to diseases and mechanical obstructions, constipation may be caused by psychogenic factors. Psychogenic constipation is observed in some individuals with obsessive-compulsive disorder who assign such importance to regularity that abnormal amounts of time and effort are devoted to daily bowel movements.

**constituent** *n.* a linguistic unit that is a component of a larger and more complex unit. Although the term is used in the more traditional forms of sentence parsing, it is now mainly associated with the type of **constituent analysis** practiced in PHRASE-STRUCTURE GRAMMAR and other forms of GENERATIVE GRAMMAR. In this form of analysis a canonical English sentence, such as *The man opened a window*, is usually said to have the immediate constituents "noun phrase" (NP) and "verb phrase" (VP); the verb phrase can be further subdivided into the constituents "verb" (V) and "noun phrase," and both noun phrases into "determiner" (det) and "noun" (N).

**constitution** *n.* **1.** the sum of an individual's innate characteristics. **2.** more broadly, the basic psychological

and physical makeup of an individual, due partly to heredity and partly to life experience and environmental factors. —**constitutional** *adj.*

**constitutional disorder** a condition, disease, behavior, or constellation of behaviors arising from or inherent within some aspect of the individual's physical makeup or physiological characteristics.

**constitutional factor** a basic physiological tendency that is believed to contribute to personality, temperament, and the etiology of specific mental and physical disorders. Examples of this factor include hereditary predispositions and physiological characteristics (circulatory, musculoskeletal, glandular, etc.).

**constitutional psychopathic inferior** a former name for an individual with ANTISOCIAL PERSONALITY DISORDER. The term *psychopathic inferior* was introduced in 1888 by German physician Robert Koch (1843–1910) and included by Emil KRAEPELIN in his classification of mental disorders (1893). Adolf MEYER added the word *constitutional* in the sense of deep-seated (but not congenital).

**constitutional type** a classification of individuals based on physique and other biological characteristics or on a hypothetical relationship between physical and psychological characteristics, such as temperament, personality, and a tendency to develop a specific type of mental disorder. See CARUS TYPOLOGY; KRETSCHMER TYPOLOGY; SHELDON'S CONSTITUTIONAL THEORY OF PERSONALITY.

**constrained association** see CONTROLLED ASSOCIATION.

**constraint commitment** see STRUCTURAL COMMITMENT.

**construal** *n.* a person's perception and interpretation of attributes and behavior of the self or of others. See also INDEPENDENT SELF-CONSTRUAL; INTERDEPENDENT SELF-CONSTRUAL.

**construct** *n.* **1.** a complex idea or concept formed from a synthesis of simpler ideas. See HIGHER ORDER CONSTRUCT. **2.** an explanatory model based on empirically verifiable and measurable events or processes—an **empirical construct**—or on processes inferred from data of this kind but not themselves directly observable—a **hypothetical construct**. Many of the models used in psychology are hypothetical constructs. **3.** in the study of social cognition, an element of knowledge (a **cognitive construct**).

**constructional apraxia** an impaired ability to re-create visual images as drawings or other forms of construction (e.g., blocks or puzzle pieces).

**constructional praxis** the ability to draw, copy, or manipulate spatial patterns or designs.

**constructionism** *n.* see CONSTRUCTIVISM.

**constructive alternativism** in the personality construct theory of George A. KELLY, the capacity to view the world from multiple perspectives, that is, to envision a variety of alternative constructs.

**constructive conflict resolution** the use of collaborative, salutary methods, such as BARGAINING, NEGOTIATION, ACCOMMODATION, and COOPERATION, to resolve interpersonal or intergroup disagreements.

**constructive confrontation** an ORGANIZATIONAL DEVELOPMENT initiative in which employees gather to identify, analyze, and plan solutions to work-related problems. At

the heart of the method is a free and open discussion in which individuals can be frank without fear of punishment or blame.

**constructive coping** any instrumental approach to stress management that is generally considered to be adaptive or otherwise positive. Examples include planning and strategizing, seeking help and support from others, REFRAMING the situation, and meditating. Constructive coping strategies are task relevant and action oriented and are divided into one of three categories: PROBLEM-FOCUSED COPING, EMOTION-FOCUSED COPING, and APPRAISAL-focused coping. They rely on realistic assessments of stressors and available coping resources, and their use is associated with better physical and mental health outcomes than the use of other strategies (e.g., ACTIVE COPING, PASSIVE COPING, DEFENSE MECHANISMS). Research suggests that constructive coping is likely to be used when stressors are of high intensity or when there is little negative emotional arousal generated in the context of the stressful experience or event.

**constructive memory** remembering conceived as involving the use of general knowledge stored in one's memory to construct a more complete and detailed account of an event or experience by changing or filling in various features of the memory. See RECONSTRUCTIVE MEMORY; REPEATED REPRODUCTION.

**constructive obedience** compliance with the orders of a social authority that results in some benefit to the compliant individual or the larger society of which he or she is a part. Examples of constructive obedience include accident victims obeying the commands of emergency personnel and citizens adhering to laws within their communities, which reduces crime and makes neighborhoods safer, thus instilling a sense of security and well-being for individuals living within those neighborhoods. Compare DESTRUCTIVE OBEDIENCE.

**constructive play** a form of OBJECT PLAY in which children manipulate materials in order to create or build objects, for example, making a sand castle or using blocks to build a house. Constructive play facilitates creativity, learning, and the development of motor and other skills.

**constructive theory of perception** any theory proposing that perceivers unconsciously combine information from a stimulus (such as a retinal image) with other information (such as apparent or expected distance and previous experience) to construct a perception.

**constructive thinking** the ability to solve problems in everyday life with minimal stress.

**Constructive Thinking Inventory (CTI)** a self-report measure of experiential intelligence, yielding scores on such dimensions as superstitious thinking, categorical thinking, naive optimism, and defensiveness. Designed for individuals ages 18 to 80 years, it consists of 108 self-statements about thoughts and behavior to which participants respond using a 5-point LIKERT SCALE format, ranging from *definitely false* to *definitely true*. [originally developed in 1989 by U.S. psychologist Seymour Epstein (1924– )]

**constructivism** *n.* the theoretical perspective, central to the work of Jean PIAGET, that people actively build their perception of the world and interpret objects and events that surround them in terms of what they already know. Thus, their current state of knowledge guides processing, substantially influencing how (and what) new information

is acquired. Also called **constructionism**. See also SOCIAL CONSTRUCTIVISM. Compare DIRECT PERCEPTION. —**constructivist** *adj.*

**Constructivist Learning Environment Survey (CLES)** a questionnaire consisting of 30 statements (e.g., "I help the teacher to assess my learning") that students rate using a 5-point LIKERT SCALE format, ranging from *almost never* to *almost always*. It assesses the degree to which a particular classroom's environment is consistent with a constructivist epistemology and helps teachers to reflect on their epistemological assumptions and reshape their teaching practice. [developed in the 1990s by Australian educators Peter Charles Taylor and Barry J. Fraser]

**constructivist psychotherapy** any psychotherapy approach that shares the theoretical perspective of CONSTRUCTIVISM and focuses on meaning-making to help clients reconceptualize their problems in a more life-enhancing way by using story, myth, poetry, and other linguistic and nonverbal forms. Constructivist psychotherapy began as an application of PERSONAL CONSTRUCT theory. See also NARRATIVE THERAPY; PERSONAL CONSTRUCT THERAPY.

**constructivist theory of emotion** any theory holding that emotions are not INNATE but constructed through social and cultural experience. See SOCIAL CONSTRUCTIVISM.

**construct validity** the degree to which a test or instrument is capable of measuring a concept, trait, or other theoretical entity. For example, if a researcher develops a new questionnaire to evaluate respondents' levels of aggression, the construct validity of the instrument would be the extent to which it actually assesses aggression as opposed to assertiveness, social dominance, and so forth. A variety of factors can threaten the basic construct validity of an experiment, including (a) mismatch between the construct and its OPERATIONAL DEFINITION, (b) various forms of BIAS, and (c) various EXPERIMENTER EFFECTS and other participant reactions to aspects of the experimental situation. There are two main forms of construct validity in the social sciences: CONVERGENT VALIDITY and DISCRIMINANT VALIDITY.

**consultant** *n.* **1.** a mental health care or medical specialist called upon to provide professional advice or services in terms of diagnosis, treatment, or rehabilitation. **2.** in the United Kingdom, a hospital doctor of the most senior rank in his or her field.

**consultee** *n.* see BEHAVIORAL CONSULTATION; MENTAL HEALTH CONSULTATION.

**consultee-centered consultation** see MENTAL HEALTH CONSULTATION.

**consulting** *n.* the use of the particular skill, experience, and expertise of an individual or group to advise individuals, groups, or organizations.

**consulting psychology** the branch of psychology that provides expert psychological guidance to business and industry, federal and state agencies, the armed forces, educational and scientific groups, religious groups, and volunteer and public service organizations. **Consulting psychologists** specialize in a variety of approaches—clinical, community, school, education, and industrial and organizational—and offer a wide variety of services, the most common of which are individual assessment, individual and group-process consultation, organizational development, education and training, employee selection and ap-

praisal, research and evaluation test construction, management coaching, and change management.

**consumer** *n.* an individual or an entity (e.g., a school system) that purchases (or otherwise acquires) and uses goods or services. In the context of health care, consumers are generally patients or clients who receive medical or mental health services, but they can also include parents or legal guardians responsible for obtaining services on the patients' or clients' behalf.

**consumer activism** see CONSUMERISM.

**consumer behavior** the acts of individuals or groups in obtaining, consuming, and disposing of economic goods and services, including the decision processes that precede and follow these acts.

**consumer characteristics** personality traits of consumers that can influence the planning of advertising campaigns. Most sophisticated studies of consumer characteristics go beyond age, sex, income, and neighborhood of residence and use established psychological techniques to analyze motives behind buying decisions. See also PSYCHOGRAPHICS.

**consumer counseling** counseling for individuals that focuses on good decision making in personal money management.

**consumer-driven health care** an approach to health care cost containment that lets consumers decide how to spend dollars earmarked for health and mental health care. Instead of providing insurance with a low deductible for employees, an employer might fund a high-deductible insurance policy and a tax-advantaged account such as a health savings account, a health reimbursement account, or another medical payment product that consumers could use to help meet the high deductible. Because consumers can shop for and choose the doctors that they want to see and the procedures that they want done, this type of care is posited to bring competition to the health services market and more control to consumers, although the benefits and effectiveness of this arrangement are being debated.

**consumer education** programs that educate consumers primarily in (a) the criteria by which to evaluate complex technical products and services; (b) decision-making skills; (c) the workings of business, government, and the marketplace; (d) techniques for judging advertising and selling claims; and (e) money-saving buying strategies.

**consumer innovator** one of the first individuals to use a new product or service (see ADOPTER CATEGORIES). Innovators tend to be risk takers.

**consumerism** *n.* **1.** the purchase and consumption of goods and services in amounts that exceed basic needs. Consumerism is often tied to the socioeconomic behavior of **conspicuous consumption**, whereby individuals acquire and display expensive goods as a means of obtaining or maintaining SOCIAL STATUS. See also ETHICAL CONSUMERISM. **2.** a movement to protect the rights of the consumer with regard to the quality and safety of available products and services (including psychotherapeutic and medical care). Consumers of mental health care have a number of clearly defined rights, including the right to know, to confidentiality, to choice, to determination of treatment, to nondiscrimination, to treatment review, and to accountability of treating professionals. Also called **consumer activism**. —**consumerist** *adj.*

**consumer-jury technique** a method of testing adver-

tising appeals before an actual product promotion campaign is started in a test market. "Jury" members usually consist of typical consumers of the product category. They are shown a selection of proposed advertisements and asked to evaluate them in terms of which advertisement would be most likely to induce them to purchase the product. The consumer-jury technique has been found to be an accurate predictor of advertising effectiveness. See also CONTINUOUS PANEL.

**consumer neuroscience** see NEUROMARKETING.

**consumer psychology** the branch of psychology that studies the behavior of individuals as consumers and the marketing and communication techniques used to influence consumer decisions. **Consumer psychologists** investigate the psychological processes underlying consumer behavior and responses to both for-profit and not-for-profit marketing.

**consumer research** the application of clinical, scientific, and statistical research techniques to the study of consumer behavior. Consumer research may include studies of consumer tastes and preferences, the influence of branding and package design, and the personality traits of a target audience. See also MARKET RESEARCH; MOTIVATION RESEARCH.

**consumer-run drop-in center** an organization to which people recovering from mental illness can go for SOCIAL SUPPORT and for programs, services, and social activities offered in a nonclinical environment, with the ultimate goal of both empowering participants and reintegrating them into the greater community. It differs from a general DROP-IN CENTER in that those who use the center also run its programs and assist the other people seeking help there. Such programs can include support groups, exercise classes, arts and crafts, excursions, guest speakers, access to and training on computers, employment services, personal and political advocacy, assistance with basic needs (e.g., laundry), and OUTREACH programs.

**consumer survey** a survey of consumer likes and dislikes in certain product categories (e.g., beverages) that may yield information about designing and packaging a product in ways the consumer will find attractive. Consumer surveys may be conducted by questionnaires, in-depth interviews, group interviews, visualization, and similar techniques.

**consummatory pleasure** see ANTICIPATORY PLEASURE.

**consummatory response** the final response in a natural chain of behaviors directed toward achieving a goal. For example, eating (to reduce hunger) is the final act of the sequence of responses involved in foraging for food, and copulation (to reduce the sex drive) is the final act of sexual behavior. In 1918, U.S. ethologist Wallace Craig distinguished between consummatory behavior as an innate stereotyped activity and APPETITIVE BEHAVIOR as the active searching process that precedes it. Also called **consummatory act**; **consummatory behavior**. See also GOAL-DIRECTED BEHAVIOR.

**consummatory response theory of reinforcement** see DRIVE-INDUCTION THEORY.

**contact behavior** actions and interactions occurring during an interpersonal exchange, which may be either an intimate, personal relationship (e.g., sexual contact) or a relatively impersonal interaction (e.g., buying and selling).

**contact comfort** the positive effects experienced by in-

fants or young animals when in close contact with soft materials. The term originates from Harry HARLOW's classic experiments, in which young rhesus monkeys exposed both to an artificial cloth mother without a bottle for feeding and to an artificial wire mother with a bottle for feeding spent more time on the cloth mother and, when frightened, were more readily soothed by the presence of the cloth mother than the wire mother.

**contact desensitization** a variation of SYSTEMATIC DESENSITIZATION involving PARTICIPANT MODELING instead of relaxation training, used especially in the treatment of anxiety. The therapist demonstrates appropriate behaviors, beginning with those in the weakest anxiety-provoking situation for the client, and then assists the client in performing such behaviors. For example, in working with a client who is afraid of spiders, the therapist might first sit near a spider, then touch the spider, and then pick it up while the client observes. The client, with the guidance and assistance of the therapist, would then perform the same activities in the same order.

**contact hypothesis** the proposition that interaction among people belonging to different groups will reduce intergroup prejudice. Research indicates that the prejudice-alleviating effects of contact are robust across many situations, but that they are strengthened when the people from the different groups are of equal status, are not in competition with each other, and do not readily categorize the others as very different from themselves. Also called **intergroup-contact hypothesis**.

**contact language** an improvised system of communication, such as a PIDGIN, that emerges in situations of contact between speakers of different languages. Contact languages are usually characterized by a restricted lexicon, simplified sentence structures, and the absence of complex grammatical inflections.

**contagion** *n.* see SOCIAL CONTAGION.

**containment** *n.* in OBJECT RELATIONS THEORY, the notion that either the mother or the analyst aids growth and alleviates anxieties by acting as a "container," or "holding environment," for projected aspects of the child's or patient's psyche (see PROJECTION). For instance, the infant, overwhelmed by distress and having no context to understand the experience, is held and soothed by the parent, who thus creates a safe context for the child and endows the experience with meaning. The psychoanalyst does this metaphorically by helping the patient reduce the anxiety to tolerable levels.

**contamination** *n.* 1. in testing and experimentation, the situation in which prior knowledge, expectations, or other factors relating to the variable under study are permitted to influence the collection and interpretation of data about that variable. 2. the mixing together of two or more discrete percepts, such as might occur on the RORSCHACH INKBLOT TEST or the MACHOVER DRAW-A-PERSON TEST. 3. the creation of a NEOLOGISM by combining a part of one word with a part of another, usually resulting in a word that is unintelligible.

**contamination obsession** an intense preoccupation with disease, dirt, germs, mud, excrement, sputum, and so forth, based on a feeling that the world is disgusting, decaying, and dying. It is a frequent symptom of obsessive-compulsive disorder, and, in extreme cases, it is regarded as a symptom of schizophrenia.

**contemporaneity** *n.* in psychotherapy, the principle of focusing on immediate experience. See also HERE AND NOW.

**contempt** *n.* an emotion characterized by negative regard for anything or anybody considered to be inferior, vile, or worthless. —**contemptuous** *adj.*

**content** *n.* in psychology and psychotherapy, the actual thoughts, images, and emotions that occur in conscious experience. Thus, content may be contrasted with the mental processes or the neural structures that underlie them.

**content-addressable store** a model of memory, borrowed from computer science, in which a memory is stored and retrieved based on representation of its contents rather than by an arbitrary tag. Knowledge or memory is represented by values along certain dimensions, such as temporal (e.g., last summer) or semantic (a vacation); an effective retrieval cue using the same values along those dimensions will access the information stored.

**content analysis** 1. a systematic, quantitative procedure for coding the themes in qualitative material, such as projective-test responses, propaganda, or fiction. 2. a systematic, quantitative study of verbally communicated material (e.g., articles, speeches, films) by determining the frequency of specific ideas, concepts, or terms. Also called **quantitative semantics**.

**Contention Scheduling System (CSS)** in the CONTROL OF ACTION MODEL, a cognitive mechanism that is held to be active in routine situations where decision making and other EXECUTIVE FUNCTIONS are not required. Perceptual triggers are held to activate previously learned SCHEMAS that correspond to habitual tasks and actions, which are thus selected for performance. Compare SUPERVISORY ATTENTIONAL SYSTEM. [described in 1980 by U.S. cognitive scientist Donald A. Norman (1935– ) and British neuropsychologist Timothy Shallice (1940– )]

**contentiousness** *n.* a tendency toward disputes and strife; quarrelsomeness. Contentiousness may be observed in MANIA and in the early stages of predominantly persecutory DELUSIONAL DISORDERS when individuals perceive that they are being treated unfairly.

**content psychology** an approach to psychology that is concerned with the role of conscious experience and the CONTENT of that experience. The term is mainly applied to early STRUCTURALISM. Compare ACT PSYCHOLOGY.

**content-referenced test** see CRITERION-REFERENCED TEST.

**contents of consciousness** see CONSCIOUSNESS.

**content-thought disorder** a type of thought disturbance, typically found in schizophrenia and some other mental disorders (e.g., obsessive-compulsive disorder, mania), characterized by multiple fragmented delusions.

**contentual objectivism versus contentual subjectivism** the question of whether the proper subject matter (CONTENT) of psychology is objective behavior or the subjective realm of the mind or consciousness. This question is often seen as the principal issue at stake in the conceptual confrontation between STRUCTURALISM and BEHAVIORISM in the early history of psychology. See also METHODOLOGICAL OBJECTIVISM VERSUS METHODOLOGICAL SUBJECTIVISM.

**content validity** the extent to which a test measures a representative sample of the subject matter or behavior under investigation. For example, if a test is designed to

survey arithmetic skills at a third-grade level, content validity indicates how well it represents the range of arithmetic operations possible at that level. Modern approaches to determining content validity involve the use of EXPLORATORY FACTOR ANALYSIS and other multivariate statistical procedures.

**content word** in linguistics, a word with an independent lexical meaning, that is, one that can be defined with reference to the physical world or abstract concepts and without reference to any sentence in which the word may appear. Nouns, verbs, adjectives, and many adverbs are considered to be content words. Also called **lexical word**. Compare FUNCTION WORD.

**context** *n.* **1.** generally, the conditions or circumstances in which a particular phenomenon occurs. **2.** in linguistics, the parts of a speech or written passage that precede or follow a word, phrase, or other unit and clarify its meaning. **3.** in studies of cognition, the environment in which a stimulus event occurs, especially as this influences memory, learning, judgment, or other cognitive processes. **4.** in laboratory tasks involving the recognition of stimuli, the setting in which a target stimulus is presented, including any distractors or maskers (see MASKING). —**contextual** *adj.*

**context clues** clues provided by the immediate context (i.e., the sentence or paragraph) that enable a reader to recognize a word that is not a SIGHT WORD. See WORD-RECOGNITION SKILLS.

**context-independent learning** the learning of a skill or strategy independently of a specific situation in which the skill will be applied.

**context reinstatement** a method used to aid the retrieval of memories. In the case of eyewitness recall, the individual is asked to re-create the event to be remembered in its original context and is encouraged to think about a variety of stimuli surrounding the event (e.g., smells, sounds) in the hope of providing additional retrieval cues. See also COGNITIVE INTERVIEW.

**context shifting** in conversation or therapy, a tendency to change subjects abruptly, generally to avoid anxiety-laden issues.

**context-specific learning** learning that has occurred in a particular place, circumstance, or state (e.g., while intoxicated) and is displayed only in that context and not when testing occurs in another context. See also CONTEXTUAL ASSOCIATION.

**context theory of meaning** the theory that the meaning of a word or concept depends on mental images associated with a specific body of sensations, as in the concept of fire. [formulated by Edward Bradford TITCHENER]

**contextual analysis** any method of evaluating data that takes into account the characteristics of the environment in which the information was collected and their influence upon study units (e.g., behavior). For example, a contextual analysis of data gathered from an experimental study conducted in a laboratory would take into account the effects of the laboratory itself on study participants, whereas one conducted in a public setting would account for the effects of that environment on the participants. The data gathered (i.e., participant responses) from the different environments would likely be revealed to be quite different as well.

**contextual association** a connection learned between

items or material that an organism is exposed to and the context or circumstance in which that exposure occurs. For instance, a lecture may be associated with the classroom in which it occurs: That contextual association facilitates retrieval, so recall of the lecture should be better in the classroom than outside it.

**contextual interference effect** an effect on learning that may occur when training occurs in different contexts or when trials on one task are alternated with those on a different task. Learning is slowed by changing contexts or by intervening tasks, but the knowledge is more enduring and more readily transferable to different tasks or domains.

**contextualism** *n.* **1.** the theory that memory and learning are not the result only of linkages between events, as in the associationist doctrine, but are also due to the meaning given to events by the context surrounding the experiences. **2.** a worldview asserting that the environment in which an event occurs intrinsically informs the event and its interpretation.

**contextualize** *vb.* to interpret an event within a preexisting mental framework. —**contextualization** *n.*

**contextual subtheory** a part of the TRIARCHIC THEORY OF INTELLIGENCE according to which factors in the environment affect both an individual's intelligence and what constitutes an intelligent response to a given situation. The subtheory postulates that people are intelligent in context to the extent that they effectively adapt to, shape, and select environments.

**contiguity** *n.* the co-occurrence of stimuli in time or space. Learning an association between two stimuli is generally thought to depend at least partly on the contiguity of those stimuli. See ASSOCIATION BY CONTIGUITY; LAW OF CONTIGUITY. —**contiguous** *adj.*

**contiguity learning theory** a theory stating that if a pattern of stimulation and a response occur together in time and space, learning occurs by the formation of ASSOCIATIONS between them, so that the same stimulus pattern will elicit the same response on subsequent occasions. See also S-R PSYCHOLOGY. [proposed by Edwin R. GUTHRIE]

**contiguity of association** see ASSOCIATION BY CONTIGUITY.

**contiguity principle** see LAW OF CONTIGUITY.

**continence** *n.* the ability to control sexual urges or the urge to defecate or urinate. —**continent** *adj.*

**continental philosophy** a loose designation for philosophical developments originating in continental Europe from the middle of the 20th century, encompassing such movements as PHENOMENOLOGY, EXISTENTIALISM, STRUCTURALISM, and DECONSTRUCTION. Continental philosophy is often contrasted with the Anglo-American tradition of ANALYTIC PHILOSOPHY.

**contingencies of self-worth** particular areas of life in which people invest their SELF-ESTEEM, such that feedback regarding their standing or abilities in these domains has a strong effect on their SELF-CONCEPT. Research indicates that people choose to stake their self-esteem in different domains, so that for some people material or professional success is vital to their sense of self-worth, whereas for others this is much less important than being well liked or sexually attractive. Also called **contingencies of self-esteem**. [first described in 2001 by U.S. psychologist Jennifer Crocker (1952– )]



**contingency** *n.* a conditional, probabilistic relation between two events. When the probability of Event B given Event A is 1.0, a perfect **positive contingency** is said to exist. When Event A predicts with certainty the absence of Event B, a perfect **negative contingency** is said to exist. Probabilities between -1.0 and 1.0 define a continuum from negative to positive contingencies, with a probability of 0 indicating no contingency. Contingencies may be arranged via dependencies or they may emerge by accident (see ACCIDENTAL REINFORCEMENT). See also LAW OF CONTINGUITY; REINFORCEMENT CONTINGENCY.

**contingency awareness** **1.** awareness of a relationship or connection between two occurrences. See CO-OCURRENCE. **2.** awareness of the dependence of one variable on another. See COVARIATION.

**contingency contract** a mutually agreed-upon statement between a teacher and student, a parent and child, or a client and therapist regarding the change or changes desired, typically specifying behaviors and their positive and negative consequences.

**contingency-governed behavior** behavior that is directly and solely the result of REINFORCEMENT CONTINGENCIES. It occurs without deliberation. Compare RULE-GOVERNED BEHAVIOR.

**contingency management** in BEHAVIOR THERAPY, a technique in which a reinforcement, or reward, is given each time the desired behavior is performed. This technique is particularly common in substance abuse treatment.

**contingency model** any theory or model based on the generalization that there is no universal, ideal approach to structuring organizations and managing people. Rather, the most effective approach will depend on factors such as the nature of the task, the culture and environment of the organization, and the characteristics of the people involved. Also called **situational approach**. See also CONTINGENCY THEORY OF LEADERSHIP.

**contingency table** a two-dimensional table in which frequency values for categories of one variable are presented in the rows and values for categories of a second variable are presented in the columns: Values that appear in the various CELLS then represent the number or percentage of cases that fall into the two categories that intersect at this point. For example, the sex and geographical locations of a sample of individuals applying for a particular job may be displayed in a contingency table. Thus, the number of women from Los Angeles would be given, the number of men from Los Angeles would be given, the number of women from New York City would be given, the number of men from New York City would be given, and so on. Also called **cross-classification table**.

**contingency theory of leadership** any of various models predicting that leadership performance depends on the interaction of the personal characteristics of the leader and the nature of the group situation. The prototypical contingency theory emerged from the conceptual analysis of leadership effectiveness developed by Fred FIEDLER in the 1960s. Fiedler's model differentiates between TASK-MOTIVATED and RELATIONSHIP-MOTIVATED leaders, as indicated by scores on the LEAST PREFERRED COWORKER SCALE, and predicts that task-motivated leaders will be most effective in extremely favorable or unfavorable group settings, whereas relationship-motivated leaders will be more effective in moderately favorable settings. Other models of this

kind include the SITUATIONAL LEADERSHIP THEORY, the SUBSTITUTES FOR LEADERSHIP THEORY, and the VROOM-YETTON-JAGO DECISION MODEL. See also COGNITIVE RESOURCE THEORY.

**contingent** *adj.* dependent on circumstances, events, or conditions. See also CONTINGENCY.

**contingent aftereffect** an altered visual perception in which one stimulus dimension (e.g., color) depends on a separate stimulus dimension (e.g., orientation). The **McCollough effect** is an example in which repeated serial exposure to horizontal red bars followed by vertical green bars induces an aftereffect of horizontal white bars appearing green and vertical white bars appearing red. The color of the aftereffect is contingent on the orientation of the test stimulus.

**contingent negative variation (CNV)** a slow EVENT-RELATED POTENTIAL that is recorded from the scalp. A CNV arises in the interval between a warning signal and a signal that directs action and is indicative of readiness or expectancy. Also called **expectancy wave**. See also EVOKED POTENTIAL.

**contingent probability** the probability, expressed as a number between 0 and 1, that one event or category of outcome will occur if another one does. An example is the probability that the child of a drug user will become a drug user himself or herself. Unusually high or low contingent probabilities (compared to the general population) may, but do not necessarily, imply a causal relationship between the two events.

**contingent reinforcement** the process or circumstances in which the delivery of positive stimulus events (e.g., material goods, verbal praise) and, more rarely, the elimination of negative stimulus events (e.g., penalties) depend on the performance of desired behavior. In leadership and management, the term is applied to any approach in which a leader relies on rewards and penalties to motivate his or her followers. Also called **contingent reward**.

**continuance commitment** that element of an employee's ORGANIZATIONAL COMMITMENT that can be attributed to the cost, inconvenience, or difficulty of changing employers. Compare AFFECTIVE COMMITMENT.

**continued-stay review (CSR)** a UTILIZATION REVIEW in which an internal or external auditor determines if continued inpatient care is medically necessary or if the current health care facility is still the most appropriate to provide the level of care required by the patient. See also CONCURRENT REVIEW; EXTENDED-STAY REVIEW.

**continuing bond** the emotional attachment that a bereaved person continues to maintain with the deceased long after the death. The increasingly influential continuing-bond approach to the bereavement process focuses on ways in which the emotional and symbolic relationship with the deceased can be reconstructed and integrated into the bereaved's life. This approach is in contrast to the view, particularly prevalent following Sigmund FREUD'S 1917 essay "Mourning and Melancholia," that successful mourning must necessarily involve the bereaved's complete emotional detachment from the deceased. See also GRIEF WORK; MOURNING; OBJECT LOSS. [introduced by Dennis Klass, Phyllis R. Silverman, and Steven L. Nickman in their 1996 edited volume, *Continuing Bonds: New Understandings of Grief*]

**continuing care retirement community (CCRC)** a facility that offers a range of services and living arrange-

ments that older adult residents can use as the need arises. A full spectrum of such services and arrangements might include independent living arrangements for the healthy and comparatively healthy; access to on-site nursing care and other medical services for those temporarily ill, recovering from surgery, or returning from an extended stay in a hospital or rehabilitation facility; and terminal care for the dying.

**continuing care unit (CCU)** a hospital unit to which a patient with a catastrophic or chronic illness is transferred for additional care after the acute hospitalization period. Compare INTENSIVE CARE UNIT. See also SKILLED NURSING FACILITY.

**continuing education 1.** a subset of ADULT EDUCATION in which an adult updates or augments a previously acquired skill set, knowledge base, or area of expertise. **2.** a requirement imposed by PROFESSIONAL LICENSING bodies for the purpose of ensuring that professionals stay current with new developments in their field and maintain competence to practice.

**continuing medical education (CME)** postdoctoral educational activities that serve to develop or extend the knowledge, skills, and professional qualities that a physician uses to provide health care services.

**continuity** *n.* the quality or state of being unending or connected into a continuous whole. For example, the traditional concept of continuity of care implies the provision of a full range of uninterrupted medical and mental health care services to a person throughout his or her lifespan, from birth to death, as needed.

**continuity hypothesis 1.** the assumption that successful DISCRIMINATION LEARNING or problem solving results from a progressive, incremental, continuous process of trial and error. Responses that prove unproductive are extinguished, whereas every reinforced response results in an increase in ASSOCIATIVE STRENGTH, thus producing the gradual rise of the LEARNING CURVE. Problem solving is conceived as a step-by-step learning process in which the correct response is discovered, practiced, and reinforced. Compare DISCONTINUITY HYPOTHESIS. **2.** the contention that psychological processes of various kinds (e.g., learning, childhood development) take place either in small steps or continuously, rather than in jumps or discontinuously from one identifiable stage to another. Also called **continuity theory**.

**continuity of germ plasm** see GERM PLASM.

**continuity theory 1.** a theory proposing that people generally maintain the same personality style, activity level, interests, and social roles as they age. Compare ACTIVITY THEORY; DISENGAGEMENT THEORY. **2.** see CONTINUITY HYPOTHESIS.

**continuity versus discontinuity** the scientific debate over whether developmental change is gradual (continuous) or relatively abrupt (discontinuous).

**continuous** *adj.* describing a variable, score, or distribution that can take on any numerical values within its range. Compare DISCONTINUOUS; DISCRETE. See also CONTINUOUS VARIABLE.

**continuous avoidance** see SIDMAN AVOIDANCE SCHEDULE.

**continuous control** in ergonomics, a control device operated by continuous movements, such as a computer

mouse used to move a cursor on a screen, as opposed to a **discrete control** device, such as an on-off switch or the like. See also ISOMETRIC CONTROL; ISOTONIC CONTROL.

**continuous distractor task** a test of memory retention in which a continuous string of items to be remembered is presented: Every few items, the participant is presented with one of the items previously presented and must remember the item following it, while also retaining the other items in sequence. A continuous distractor task contrasts with a study-trial/test-trial procedure.

**continuous distribution** a DISTRIBUTION in which values can occur anywhere along an unbroken continuum. An example would be any distribution showing variation in human height or weight. A continuous distribution can be plotted as a single smooth line, and it may be used to display the likelihood of specific values occurring (a **continuous probability distribution**) or the actual number of times they have been observed to occur, such as in a research sample (a **continuous frequency distribution**). Compare DISCRETE DISTRIBUTION. See also CONTINUOUS VARIABLE.

**continuous group** see OPEN GROUP.

**continuous improvement** see TOTAL QUALITY MANAGEMENT.

**continuous movement task** a purposeful movement that has no recognizable beginning or end—the behavior continues until it is arbitrarily stopped. Examples include cross-country running and steering a car. Compare DISCRETE MOVEMENT TASK.

**continuous operations (CONOPS)** military operations conducted without interruption, which require strict discipline, planning, time management, and coordination. They may cause sleep loss and affect ability to perform operational tasks.

**continuous panel** a form of consumer jury in which members serve on a more or less permanent basis so that consumer psychologists can detect shifts in attitudes, values, or behavior (see CONSUMER-JURY TECHNIQUE). The panel members are carefully selected to represent the demographic or psychographic characteristics of a population, and they are tested periodically for signs of psychic mobility that may also represent attitude changes in the general population.

**continuous performance test (CPT)** any test that measures sustained attention and concentration, usually by requiring responses to an auditory or verbal target stimulus while ignoring nontarget stimuli.

**continuous rating scale** a scale on which ratings are assigned along a continuum (e.g., a line) rather than according to categories. Such ratings are made by making a mark on the scale to indicate the exact "placement" of the rating or by assigning a precise numerical value. Also called **continuous scale**.

**continuous recognition task** a memory task in which a series of items is presented, with some items presented on multiple occasions in the series. The participant responds to each item by indicating whether it is old (seen previously in the series) or new (not seen earlier in the series).

**continuous reinforcement (CRF)** in operant and instrumental conditioning, the REINFORCEMENT of every correct (desired) response. It is identical to a fixed-ratio 1

schedule of reinforcement (see **FIXED-RATIO SCHEDULE**). Also called **continuous reinforcement schedule**; **continuous schedule of reinforcement**.

**continuous spectrum** see **SOUND SPECTRUM**.

**continuous variable** a variable that may in theory have an infinite number of possible values. For example, time is a continuous variable because accurate instruments will enable it to be measured to any subdivision of a unit (e.g., 1.76 seconds). By contrast, number of children is not a continuous variable as it is not possible to have 1.76 children. In practice, a continuous variable may be restricted to an artificial range by instrumentation constraints, practical limitations, or other reasons. For example, a researcher assessing the influence of a new technique on student study time may only be able to observe a group of individuals for 1 hour per day, such that the range of time in the data he or she collects may span 0 minutes to 60 minutes, even though some people will in actuality have exceeded that upper figure. Compare **DISCONTINUOUS VARIABLE**.

**continuum approach** an approach based on the view that behavior ranges over a continuum from effective functioning to severe abnormality. It assumes that differences between people's behavior are a matter of degree rather than kind.

**continuum of care** provision over a period of time of continuous, comprehensive, and integrated care that involves health, mental health, and social services—in the home, a health care setting, or the community—at the appropriate level of intensity. The wide range and levels of available services in a continuum of care allow for adjustments to be made in treatment when the patient or client improves (e.g., during successful drug addiction treatment) or worsens (e.g., as the health of a terminally ill patient declines).

**contra-** *prefix* against or opposing.

**contraception** *n.* any method intended to prevent conception, that is, the natural fertilization of the female ovum by the male spermatozoa. See **BIRTH CONTROL**. —**contraceptive** *n., adj.*

**contract** *n.* an explicit written agreement between parties or individuals. A contract between a client and therapist may detail (a) both the client's and the therapist's obligations, (b) the provisions for benefits or privileges to be gained through achievements, and (c) the specified consequences of failures (e.g., missing sessions). See also **BEHAVIOR CONTRACT**; **CONTINGENCY CONTRACT**.

**contractility** *n.* the capacity of living tissue, particularly muscle, to contract in response to a stimulus. Also called **contractibility**.

**contraction** *n.* **1.** a shortening or tensing of a group of muscle fibers. See **MUSCLE CONTRACTION**. **2.** in linguistics, a word formed by combining two or more words and eliminating some of the letters or sounds. For example, *don't* is a contraction of the words *do* and *not*.

**contract plan** a plan used in some schools in which a student signs a contract agreeing to change a certain behavior, such as raising a grade in a class. The contract enhances accountability for behavior; it often carries with it a reward for completion and sometimes a **RESPONSE COST** for failure to perform.

**contracture** *n.* an abnormal shortening or tightening of

a muscle, which can result in permanent disability due to difficulty in stretching the muscle. A contracture often follows a disorder or injury that makes movement painful or is a consequence of prolonged, enforced inactivity (e.g., a coma).

**contradictory representation** a condition in which one mental image prevents another from occurring owing to conflict between the two images. For example, it is impossible to hold an image of the same object as both round and square. The effect of contradictory representation is to inhibit further mental activity of which the image in question is an essential part.

**contralateral** *adj.* situated on or affecting the opposite side of the body. For example, motor paralysis occurs on the side of the body contralateral to the side on which a brain lesion is found. Compare **IPSILATERAL**. —**contralaterally** *adv.*

**contralateral control** the arrangement whereby the **MOTOR CORTEX** of each cerebral hemisphere is mainly responsible for control of movements of the contralateral (opposite) side of the body.

**contralateral deficit** see **IPSILATERAL DEFICIT**.

**contralateral eye** the eye located on the opposite side of the body to another structure or object. For example, Layer 6 of the left **LATERAL GENICULATE NUCLEUS** receives input from the **RETINAL GANGLION CELL** axons that originate in the right (i.e., contralateral) eye. Compare **IPSILATERAL EYE**.

**contralateral hemisphere** the **CEREBRAL HEMISPHERE** on the opposite side of the body from any organ or part that is being considered as the reference point. See also **CONTRALATERAL CONTROL**.

**contraprepared learning** see **PREPAREDNESS**.

**contrast** *n.* **1.** that state in which the differences between one percept, thing, event, or idea and another are emphasized by a comparison of their qualities. This may occur when the stimuli are juxtaposed (**simultaneous contrast**) or when one stimulus immediately follows the other (**successive contrast**). For example, meeting a person in a social context that includes physically attractive people could lead to a more negative evaluation of the attractiveness of that person than would have been the case otherwise. The evaluation of the person's attractiveness has been contrasted away from the social context. Compare **ASSIMILATION**. **2.** in statistics, see **COMPARISON**.

**contrast analysis** **1.** comparisons between two or more groups that address specific questions about the patterning of the **MEANS** of these groups. **2.** a focused analysis of data that is designed to determine the specific degree to which obtained data agree with predicted data (i.e., to which they support a hypothesis or theory). Contrast analysis yields an estimate of **EFFECT SIZE** and an associated level of significance for each contrast computed.

**contrast coding** in **ANALYSIS OF VARIANCE** and **MULTIPLE REGRESSION**, a method of assigning weights to values so that specific comparisons of interest can be made. To ensure the statistical independence of the particular quantities being evaluated, the process requires that the weights in each comparison sum to 0. For example, consider a researcher investigating four different methods for teaching course content. If he or she wanted to compare the average performance of the first group to the average performance of the remaining three groups, the investigator would

apply contrast weights of +3, −1, −1, and −1 to the respective group means. If, however, he or she wanted to compare the average performance of the first group to the average performance of the fourth group, the investigator instead would apply contrast weights of +1, 0, 0, and −1 to the respective group means. Also called **orthogonal coding**. Compare DUMMY VARIABLE CODING; EFFECT CODING.

**contrast detector 1.** any of the RETINAL GANGLION CELLS that are sensitive to contrast (i.e., light–dark borders). See also FEATURE DETECTOR. **2.** any structure, neural or theoretical, that is sensitive to contrast.

**contrast effect 1.** the perception of an intensified or heightened difference between two stimuli or sensations when they are juxtaposed or when one immediately follows the other. Examples include the effect produced when a trombone follows a violin or when bright yellow and red are viewed simultaneously. **2.** in psychology experiments, an effect in which participants' judgments shift away from an ANCHOR after it is introduced. Compare ASSIMILATION EFFECT.

**contrast error** a type of rating error in which the evaluation of a target person in a group is affected by the level of performance of others in the group. When the others are high in performance, there may be a tendency to rate the target lower than is correct. When the others are low in performance, there may be a tendency to rate the target higher than is correct.

**contrast illusion** a class of visual illusions in which the degree of a stimulus attribute, such as perceived size, color, brightness, or angle, is affected by the presence of additional stimuli that differ in the same attribute. For example, a small circle at the center of many large circles will appear to be smaller than the same circle at the center of many smaller circles.

**contrastive analysis** in linguistics, a comparison of the structures of two languages, usually with the goal of providing insight into effective second- or foreign-language instruction. See also LANGUAGE TRANSFER.

**contrastive rhetoric** in linguistics, the theory that different languages have different rhetorical characteristics, as seen, for example, in the different ways they structure and present an argument. The idea of contrastive rhetoric has been much discussed in the field of second-language teaching, especially at the more advanced levels. It is said to explain, for example, why native speakers will often feel that there is something odd or “wrong” about essays, business letters, and so on produced by nonnative speakers, even when the grammar and vocabulary are flawless. Contrastive rhetoric has sometimes been linked to the wider hypothesis that languages embody culture-bound thought patterns (see LINGUISTIC DETERMINISM). [introduced in 1966 by U.S. applied linguist Robert B. Kaplan]

**contrast polarity** the degree of contrast between two visual elements, particularly figure and background. Contrast can be positive (light objects against dark backgrounds, e.g., a white letter printed upon black paper) or negative (dark objects against light backgrounds, e.g., a black letter printed upon white paper).

**contrast sensitivity** a measure of spatial RESOLUTION based on an individual's ability to detect subtle differences in light and dark coloring or shading in an object of a fixed size. Detection is affected by the size of contrasting elements and is usually tested using a grating of alternating

light and dark bars, being defined by the minimum contrast required to distinguish that there is a bar pattern rather than a uniform screen. Contrast sensitivity is less for both coarse and fine gratings than it is for gratings of intermediate frequency. Humans have peak contrast sensitivity for gratings with 4 to 8 cpd (cycles per degree) and can detect contrast over a range from about 0.5 cpd to 50 to 60 cpd. Contrast sensitivity can be reduced after injury to the peripheral or central visual system: Patients complain of VISUAL BLURRING, although visual acuity may be only moderately affected. Also called **spatial contrast sensitivity**. See also SPATIAL FREQUENCY.

**contrast-sensitivity function (CSF)** a graphical representation of CONTRAST SENSITIVITY as a function of SPATIAL FREQUENCY. The CSF for normal humans peaks at about 4 to 8 cpd (cycles per degree).

**contravolitional** *adj.* against the wishes of an individual or beyond his or her control.

**contrecoup** *n.* brain injury on one side of the head resulting from a blow to the opposite side.

**contributing cause** a cause that is not sufficient to bring about an end or event but that helps in some way to bring about that end or event. A contributing cause may be a necessary CONDITION or it may influence events more indirectly by affecting other conditions that make the event more likely.

**control** *n.* **1.** authority, power, or influence over events, behaviors, situations, or people. Researchers have hypothesized a **need for control**, and they also distinguish between PRIMARY CONTROL and SECONDARY CONTROL. **2.** the regulation of all extraneous conditions and variables in an experiment so that any change in the DEPENDENT VARIABLE can be attributed solely to manipulation of the INDEPENDENT VARIABLE and not to any other factors. **3.** see STATISTICAL CONTROL.

**control adoptees** see CROSS-FOSTERING.

**control analysis** psychoanalytic treatment conducted by a trainee under the guidance of a qualified psychoanalyst, who helps the trainee decide the direction of the treatment and become aware of his or her COUNTERTRANSFERENCE. Also called **supervised analysis**; **supervisory analysis**.

**control condition** in an experiment or research design, a condition that does not involve exposure to the treatment or intervention under study. For example, in an investigation of a new drug, participants in a control condition may receive a pill containing some inert substance, whereas those in the EXPERIMENTAL CONDITION receive the actual drug of interest.

**control device** the mechanism that allows the operator of an ENVIRONMENTAL CONTROL DEVICE to transmit instructions to a TARGET DEVICE to perform a function. See also FEEDBACK DEVICE; SWITCH DEVICE.

**control discriminability** in ergonomics, the ease with which a control can be distinguished from other controls or objects on the interface and matched correctly to the effect that its activation or use will have on the system. The discriminability of a control will be a function of size, shape, color, and other design features.

**control–display ratio** in ergonomics, the ratio between the distance that a control or input device (e.g., a computer mouse) is moved by the operator and the conse-

quent distance that the object it controls (e.g., the cursor) is moved on the display (e.g., the computer screen).

**control experiment** a follow-up experiment designed to check that the findings of an initial study were in fact caused by the factor under investigation and not by some other variable. For example, consider a case in which initial research appeared to demonstrate the beneficial effect of a new treatment for depression. To confirm these results a control experiment might be devised in which a similar group of individuals was tracked to find the number of individuals whose depression was alleviated without use of the treatment.

**control function logic** in ergonomics, a logical or typical and expected relationship between the operation of a control or input device and the resulting action or effect on a display. For example, if a person moves a computer mouse to the left, the on-screen cursor should also move to the left to preserve control function logic. See also DISPLAY–CONTROL COMPATIBILITY.

**control group** a comparison group in a study whose members receive either no intervention at all or some established intervention. The responses of those in the control group are compared with the responses of participants in one or more EXPERIMENTAL GROUPS that are given the new treatment being evaluated. See also NO-TREATMENT CONTROL GROUP.

**controllable turnover** see TURNOVER.

**controlled association** a technique in which a constraint is imposed on the participant's responses such that the given response relates to the stimulus in accordance with specific directions. For example, in an experiment involving presentation of stimulus words, the participant may be directed to give a synonym or antonym of each word. Also called **constrained association**. See FREE ASSOCIATION.

**controlled attention** see SELECTIVE ATTENTION.

**controlled drinking** a controversial HARM REDUCTION approach for those with relatively mild alcohol problems and low alcohol dependence. Research has not supported controlled drinking as an efficacious primary goal of intervention for moderate to severe alcohol dependence.

**controlled-exposure technique** a method of pre-testing advertising effectiveness by presenting advertisements to a limited audience. Several variations of the advertisement may be tested using TACHISTOSCOPIES, hidden cameras, GALVANIC SKIN RESPONSE equipment to detect physiological reactions, and questionnaire surveys of the potential consumer responses.

**controlled observation** an observation made under standard and systematic conditions rather than casual or incidental conditions.

**Controlled Oral Word Association Test (COWAT)** a test that requires participants to name all the words that they can beginning with specific letters (most commonly F, A, and S). The words cannot include proper names and cannot consist of previously used words with a suffix. The most widely utilized word fluency task, COWAT is used to measure EXECUTIVE FUNCTIONS and is also thought to assess language function. Also called **FAS Test**. [originally developed in 1968 by Arthur L. BENTON]

**controlled processing** in cognitive psychology, atten-

tive processing; that is, processing that requires control, effort, and intention. See ATTENTION.

**controlled sampling** a method of choosing cases for research in which certain characteristics are considered undesirable and the probability of their being selected is therefore minimized. For example, an educational researcher may need to adjust his or her sampling technique if certain subsets of students are costly to find or if their obtained data may exert undue influence upon study results or otherwise present logistical difficulties.

**Controlled Substances Act (CSA)** the section of the Comprehensive Drug Abuse Prevention and Control Act of 1970 regulating the manufacture and use of certain drugs specified in five schedules as having abuse and dependence potential. See SCHEDULED DRUG.

**controlled trial** a study in which patients with a particular condition, disease, or illness are assigned either to a treatment group, which receives the new intervention under investigation, or to a CONTROL GROUP, which receives either no intervention or some standard intervention already in use. If individuals are allocated to the different groups at random, then the design is a RANDOMIZED CLINICAL TRIAL. Also called **comparative trial**.

**controlling goal** a goal, usually set by others, that must be achieved in order to receive an EXTRINSIC REWARD.

**control-mastery theory 1.** a perspective, underlying an integrative form of psychotherapy, that focuses on changing a client's nonconscious and maladaptive beliefs developed in childhood due to thwarted attempts to achieve attachment and safety in the client's family. The client is seen to have an inherent motivation toward health that results in testing these beliefs through TRANSFERENCE and through passive-into-active behaviors; when such testing is productive, the client is then free to pursue adaptive goals. [developed by U.S. psychiatrist Joseph Weiss] **2.** an integrative approach to child development that focuses on thoughts, feelings, and behaviors resulting from children's needs for attachment and safety in the family.

**control of action model** a cognitive model in which action selection is held to be controlled by two distinct processes: the CONTENTION SCHEDULING SYSTEM, which makes choices between routine functions that are performed automatically, and the SUPERVISORY ATTENTIONAL SYSTEM, which is required in nonroutine situations involving decision making and other EXECUTIVE FUNCTIONS. Also called **attentional control of action model**; **Norman and Shallice model**. [proposed in 1980 by U.S. cognitive scientist Donald A. Norman (1935– ) and British neuropsychologist Timothy Shallice (1940– )]

**control order** in ergonomics, the specific type of relationship between the operation of a control or input device and the resulting action or effect on a display. For example, a joystick may have either position or velocity control over cursor movements on a monitor.

**control procedure** a procedure applied before commencing a study in order to equate participants with regard to some variable that is not of research interest but nonetheless may influence the outcome. MATCHING is an example of a control procedure.

**control processes** those processes that organize the flow of information in an INFORMATION-PROCESSING system. See also COGNITIVE CONTROL; EXECUTIVE.

**control question test (CQT)** a technique used in POL-

YGRAPH testing, typically for criminal investigations. In addition to questions relevant to the crime and general questions to get a baseline pattern of physiological responses (i.e., irrelevant questions), the CQT also includes questions about past behavior (e.g., "Have you ever cheated on your taxes?") with the aim of eliciting strong physiological reactions on the part of examinees. See ZONE OF COMPARISON TEST. See also GUILTY KNOWLEDGE TEST; RELEVANT-IRRELEVANT TEST.

**control theory 1.** the idea that people regulate their behavior through repeated cycles of comparing their current state to a standard and acting to reduce discrepancies. [first proposed in 1982 by U.S. social psychologists Charles S. Carver (1947– ) and Michael Scheier] **2.** a field of mathematics and engineering dealing with monitoring and controlling the behavior of certain physical processes and systems to produce the desired or best outcome.

**control variable** a variable that is considered to have an effect on the response measure in a study but that itself is not of particular interest to the researcher. To remove its effects a control variable may be held at a constant level during the study or managed by statistical means (e.g., a PARTIAL CORRELATION). Also called **controlled variable**.

**controversial child** see SOCIOMETRIC STATUS.

**contusion** *n.* a bruise. For example, various kinds of head injury can result in CEREBRAL CONTUSION.

**convalescent center** see SKILLED NURSING FACILITY.

**convenience sampling** any process for selecting a sample of individuals or cases that is neither random nor systematic but rather is governed by chance or ready availability. Interviewing the first 50 people to exit a store is an example of convenience sampling. Data obtained from convenience sampling do not generalize to the larger population; there may be significant SAMPLING BIAS, and SAMPLING ERROR cannot be estimated. Also called **accidental sampling**; **opportunity sampling**.

**conventional antipsychotic** see ANTIPSYCHOTIC.

**conventionalism** *n.* a personality trait marked by excessive concern with and inflexible adherence to social customs and traditional or accepted values and standards of behavior. The term is also used to refer specifically to one of the traits associated with the AUTHORITARIAN PERSONALITY.

**conventional level** in KOHLBERG'S THEORY OF MORAL DEVELOPMENT, the intermediate level of moral reasoning, characterized by an individual's identification with and conformity to the expectations and rules of family and society: The individual evaluates actions and determines right and wrong in terms of other people's opinions. This level is divided into two stages: the earlier **interpersonal concordance** (or **good-boy-nice-girl orientation**, Stage 3 in Kohlberg's overall theory), in which moral behavior is that which obtains approval and pleases others; and the later **law-and-order** (or **authority and social order maintaining orientation** (Stage 4), in which moral behavior is that which respects authority, allows the person to do his or her duty, and maintains the existing social order. Also called **conventional morality**. See also PRECONVENTIONAL LEVEL; POSTCONVENTIONAL LEVEL.

**convergence** *n.* the rotation of the two eyes inward toward a light source so that the image falls on corresponding points on the foveas. Convergence enables the slightly different images of an object seen by each eye to come together and form a single image. The muscular tension ex-

erted is also a cue to the distance of the object from the eyes.

**convergence theory** a conceptual analysis of COLLECTIVE BEHAVIOR that assumes that MOBS, SOCIAL MOVEMENTS, and other forms of mass action occur when individuals with similar needs, values, goals, or personalities come together.

**convergent evolution** the tendency of unrelated organisms in a particular environment to evolve superficially similar body structures that enable them to adapt effectively to their habitat. Thus, many aquatic animals acquire a streamlined form and smooth surfaces for rapid movement through water. See also HOMOPLASY. Compare DIVERGENT EVOLUTION.

**convergent production** the capacity to produce the right answer to a question or to choose the best solution to a problem. It is one of the abilities recognized in the STRUCTURE OF INTELLECT MODEL. Compare DIVERGENT PRODUCTION.

**convergent strabismus** see CROSS-EYE; STRABISMUS.

**convergent thinking** critical thinking in which an individual uses linear, logical steps to analyze a number of already formulated solutions to a problem to determine the correct one or the one that is most likely to be successful. Compare DIVERGENT THINKING. [defined in 1967 by Joy Paul GUILFORD]

**convergent validity** the extent to which responses on a test or instrument exhibit a strong relationship with responses on conceptually similar tests or instruments. This is one of two aspects of CONSTRUCT VALIDITY, the other being DISCRIMINANT VALIDITY. Also called **congruent validity**.

**conversation** *n.* the use of speech to communicate ideas and information between or among people. Conversations arise flexibly in response to such elements as topic, private and public goals, rhetorical devices, temporal constraints, and individual speaking styles. Conversations proceed only through the mutual belief that the addressee has understood the speaker well enough for immediate purposes. Forms of this type of verbal exchange include small talk, gossip, repartee, debate, and negotiation, among others. —**conversational** *adj.*

**conversational inference** the process by which people engaged in a conversation can frequently infer the meanings intended by the other speakers, even when these are unstated or inexplicit. Such inferences will be based partly on a knowledge of the personal background and general context but more importantly on an awareness of conversational norms within a particular culture and the expectations that these create. Conversational inference does not depend on logical inference. For example, if a speaker says *My boss has been sober all week*, most listeners will understand that this person is frequently drunk, even though such an inference is not valid in logic. The listeners will assume, probably correctly, that such a statement would not be made in such a form unless it reflected an exceptional, rather than the usual, state of affairs. See also IMPLICATURE; INDIRECT SPEECH ACT.

**conversational maxims** the four basic rules governing interpersonal communications. The rules state that such communications should be (a) truthful; (b) as informative as is required; (c) relevant to the matter under discussion; and (d) clear, orderly, and brief. Violations of these

maxims are usually presumed to be deliberate or indicative of a cognitive disturbance. [introduced by British-born U.S. philosopher H. Paul Grice (1913–1988)]

**conversational repair** see REPAIR.

**conversation analysis** **1.** a specialty within DISCOURSE ANALYSIS that focuses upon casual discussions as well as other more formal, extended verbal exchanges between two or more speakers. **2.** in ergonomics, a method of evaluating a system or product that involves the examination of conversations occurring between two or more users interacting with it. Conversation analysis can be either qualitative or quantitative. It is a form of KNOWLEDGE ELICITATION.

**converse accident** a type of informal FALLACY or a persuasive technique that involves arguing from a qualified position or particular case to an unqualified and general rule. For example, because patients with certain illnesses are permitted to use marijuana, marijuana use should be legal for everyone. In empirical research, the same fallacy can result from drawing conclusions from data based on small or nonrepresentative samples. Also called **hasty generalization**.

**conversion** *n.* **1.** in psychoanalytic theory, an unconscious process in which anxiety generated by psychological conflicts is transformed into physical symptoms. Traditionally, this process was presumed to be involved in CONVERSION DISORDER, but current diagnostic criteria for the disorder do not include such an implication. **2.** actual change in an individual's beliefs, attitudes, or behaviors that occurs as a result of SOCIAL INFLUENCE. Unlike COMPLIANCE, which is outward and temporary, conversion occurs when the targeted individual is personally convinced by a persuasive message or internalizes and accepts as his or her own the beliefs expressed by other group members. Also called **private acceptance**. See also CONFORMITY. **3.** the movement of all members of a group to a single, mutually shared position, as when individuals who initially offer diverse opinions on a subject eventually come to share the same position. See GROUP POLARIZATION. **4.** the process by which a person comes to embrace a new religious faith (or, sometimes, a more intense version of his or her existing belief). For example, a nonbeliever who becomes Catholic has experienced a conversion, as has a member of a minority religion who adopts the beliefs of a more mainstream faith. In Protestant traditions, conversion is often seen as a sudden transformation in which a person apparently undergoes a dramatic change in his or her personality, values, and lifestyle. Compare DECONVERSION. —**convert** *vb.*

**conversion anesthesia** a SENSORY CONVERSION SYMPTOM marked by the absence of sensation in certain areas of the body that cannot be accounted for by any identifiable biological pathology or defect. See GLOVE ANESTHESIA; STOCKING ANESTHESIA.

**conversion disorder** in *DSM-IV-TR*, a SOMATOFORM DISORDER in which patients present with one or more symptoms or deficits affecting voluntary motor and sensory functioning that suggest a physical disorder but for which there is instead evidence of psychological involvement. These **conversion symptoms** are not intentionally produced or feigned and are not under voluntary control. Symptoms can include paralysis, loss of voice, blindness, seizures, GLOBUS PHARYNGEUS, disturbance in coordination and balance, and loss of pain and touch sensations (see MOTOR CONVERSION SYMPTOMS; SENSORY CONVERSION SYMPTOMS). The formal criteria for the disorder in *DSM-5*,

which refers to it also as **functional neurological symptom disorder**, primarily emphasize that there must be clear clinical evidence of symptom incompatibility with recognized neurological pathology before a diagnosis can be made. That there may also be psychological involvement in the onset of symptoms, or that stress or trauma of any sort, either psychological or physical, may have etiological relevance, is recognized in *DSM-5* as among “associated features” that, if found, support diagnosis. The absence of feigning, however, is no longer a required criterion for diagnosis due to the clinical challenge of reliably discerning its absence.

**conversion hysteria** a former name for CONVERSION DISORDER.

**conversion nonepileptic seizure** a form of PSYCHOGENIC NONEPILEPTIC SEIZURE (PNES) that is a result of a diagnosed CONVERSION DISORDER. It is not associated with abnormal electrical activity on an electroencephalogram. Most PNESs are conversion nonepileptic seizures. Also called **conversion seizure**.

**conversion paralysis** a PSYCHOGENIC DISORDER in which there is an apparent loss of function of the muscles of a limb or a portion of the body for which no neurological cause can be identified. Unlike ORGANIC PARALYSIS, reflexes may be intact, muscle tone may be normal, and the paralyzed limb may be moved inadvertently when the patient's attention is elsewhere. This is one of the possible symptoms of CONVERSION DISORDER.

**conversion seizure** see CONVERSION NONEPILEPTIC SEIZURE.

**conversion symptom** see CONVERSION DISORDER.

**conversion therapy** a highly controversial, ethically questionable, and generally discredited process intended to change individuals of same-sex or bisexual orientation to heterosexual orientation. Associated with religious prescriptions against homosexuality and outdated psychoanalytic theories about dysfunctional family dynamics and childhood trauma, conversion therapy has been denounced by the professional organizations of the major fields of psychiatry, psychology, and social work. There is a lack of empirical evidence to support its effectiveness, and studies suggest that the practice actually may be harmful; clients have reported such negative side effects as poor self-esteem, depression, suicidality, anxiety, social withdrawal, and sexual difficulties. Nonetheless, practitioners do exist often citing client distress and personal choice as reasons for offering the intervention; they claim that most individuals benefit by experiencing their changed sexual orientation and improved psychological functioning (e.g., through stress reduction, feeling a sense of community or belonging).

Opponents of the practice argue that the research does not support this claim and cite numerous reasons not to acquiesce to a client's desire to change his or her sexual orientation, particularly the fact that such requests stem from a climate of social intolerance. Critics also argue that conversion therapy continues to stigmatize homosexuality as a pathological condition to be cured rather than a natural variation of human sexuality. Many suggest that a better approach to addressing client dissatisfaction with sexual orientation is to offer affirmative, evidence-based, multicultural interventions that help clients explore their sexuality, evaluate their conflicts, and come to individual resolution about managing them and that do not impose

an outcome with regard to a specific sexual orientation identity. Also called **change therapy**; **reorientation therapy**; **reparative therapy**; **sexual orientation change efforts** (SOCE).

**conviction** *n.* in social psychology, the subjective sense that an attitude is a valued possession or an important aspect of SELF-CONCEPT. Conviction is related to ATTITUDE STRENGTH.

**convolution** *n.* a folding or twisting, especially of the surface of the brain.

**convoy model of social relations** a theory that conceptualizes relationships as an evolving SOCIAL NETWORK hierarchy of three concentric circles surrounding an individual, with each circle representing a relationship that has a different level of perceived intimacy or closeness to the individual at a given point in time. The theory attempts to account for how relationships of importance to the individual (i.e., that provide a secure base for individual functioning) change as she or he ages. [originally proposed by U.S. social psychologist Robert L. Kahn and U.S. developmental psychologist Toni C. Antonucci (1948– )]

**convulsant** *n.* any substance that causes or otherwise results in convulsions, usually by blocking inhibitory neurotransmission.

**convulsion** *n.* an involuntary, generalized, and violent muscular contraction, in some cases tonic (contractions without relaxation) and in others clonic (alternating contractions and relaxations of skeletal muscles).

**convulsive disorder** any form of epilepsy that involves recurrent GENERALIZED SEIZURES or PARTIAL SEIZURES with convulsions.

**convulsive therapy** any treatment that is based on the induction of a generalized seizure by electrical or chemical means. See ELECTROCONVULSIVE THERAPY; METRAZOL SHOCK TREATMENT; SHOCK THERAPY.

**co-occurrence** *n.* a relation between two or more phenomena (objects or events) such that they tend to occur together. For example, thunder co-occurs with lightning, and in English the letter *Q* typically co-occurs with the letter *U*. By itself, co-occurrence does not imply a causal link: For co-occurrence to become COVARIATION, there must be a systematic correlation between both the occurrence of the phenomena and their nonoccurrence. —**co-occur** *vb.*

**cooing** *n.* vowel-like sounds produced by young infants when they are seemingly happy and contented.

**cookies** *pl. n.* small files automatically saved on a computer that provide records of websites that the user has viewed. They enable Web servers to identify and track an individual user's online activities and preferences, thereby making it possible, for example, for Web-based marketers to pitch a different advertisement to the user each time he or she returns to a website. Cookies are considered by some users to be an invasion of privacy and may be disabled.

**Cook's distance** (**Cook's D**) in an analysis of the relationship between a response variable and one or more predictor variables, a measure of the difference that is made to the result when a single observation is dropped from the analysis. Cook's *D* thus indicates the degree of influence of a particular data value. An observation typically is considered influential if it has a Cook's *D* larger than  $4/(n - k - 1)$ , where *n* is the sample size and *k* is the number of terms in the model. [R. Denis Cook (1944– ), U.S. statistician]

**Coolidge Assessment Battery** (**CAB**) a self-administered rating-scale instrument used to measure DSM-IV-TR personality (Axis II) disorders, as well as five major clinical (Axis I) disorders and EXECUTIVE FUNCTION. Developed in 1999, it comprises 225 items to which participants respond using a 4-point LIKERT SCALE ranging from *strongly false* (1) to *strongly true* (4). The CAB is a more comprehensive successor to the **Coolidge Axis II Inventory**. [Frederick L. Coolidge (1948– ), U.S. neuropsychologist]

**Coolidge effect** increased sexual vigor when a human or nonhuman animal mates with multiple partners. The phenomenon is named for U.S. President Calvin Coolidge, alluding to a visit that he and his wife made to a farm where Mrs. Coolidge observed a rooster mating frequently. She allegedly asked the farmer to point this out to her husband, who is said to have replied "Same hen each time?"

**cooperating teacher** an experienced teacher assigned to supervise student teacher trainees who are learning to teach in classrooms. Student teachers are thus provided with an opportunity to put into practice the principles of teaching that they have learned in their teacher education training programs. Cooperating teachers introduce the teacher trainees to the practical component of teaching in such a manner as to minimize the mistakes that they are likely to make.

**cooperation** *n.* a process whereby two or more individuals work together toward the attainment of a mutual goal or complementary goals. This contrasts with COMPETITION, in which an individual's actions in working toward a goal lessen the likelihood of others achieving the same goal. In GAME THEORY, cooperation is regarded as the strategy that maximizes the rewards and minimizes the costs for all participants in the game; this is sometimes posited as an explanation for ALTRUISM. Studies of nonhuman animals often suggest cooperation, but whether animals understand that individuals must act together to reach a common solution or whether they act randomly and occasionally appear to cooperate by chance is still unclear. Often cooperation leads to outcomes, such as increased food, predator avoidance, or survival of kin, that make it adaptive (see ADAPTATION), but the benefit to each individual is not always obvious. See also ANIMAL COOPERATION. —**cooperate** *vb.* —**cooperative** *adj.*

**cooperative breeding** a type of MATING SYSTEM in which typically only one male and one female breed while other group members help in taking care of the offspring (see ALLOPARENTING). Subordinate animals are reproductively inhibited, either physiologically or behaviorally; they have few options other than to assist the breeding pair and wait for a breeding vacancy to occur.

**cooperative education** a school-administered program that combines study with employment. In higher education, the program especially seeks to enrich academic studies by supplementing them with practical field experience, ideally in responsible jobs in the student's field of interest. Periods of full- or part-time study alternate at intervals of 3 or 6 months.

**cooperative goal structure** a performance setting structured in such a way that individuals can reach their goals more easily if they work with others rather than against them. When goal structures are purely cooperative, individuals can succeed only when others succeed as well. Compare COMPETITIVE GOAL STRUCTURE.

**cooperative learning** 1. learning in small groups, to



which each student in the group is expected to contribute using interpersonal skills and face-to-face interaction. Students also participate in regular assessment of the group process. **2.** a formal method of acquiring information that combines knowledge obtained in a classroom setting with that obtained in a work or applied setting. Typically, the formal classroom aspect of instruction is focused specifically on the actual work experience. See also COOPERATIVE TRAINING.

**cooperative motive** the drive or dispositional tendency to respond cooperatively in interpersonal and performance settings by helping others achieve their goals. Compare COMPETITIVE MOTIVE.

**cooperativeness** *n.* see CLONINGER'S PSYCHOBIOLOGICAL MODEL OF PERSONALITY; TEMPERAMENT AND CHARACTER INVENTORY.

**cooperative play** see SOCIAL PLAY.

**cooperative reward structure** a performance setting in which rewards are assigned on the basis of group rather than individual achievement, and the success of each member promotes the success of the group as a whole. In most cases, such structures improve group trust and communication and possibly foster greater achievement. Compare COMPETITIVE REWARD STRUCTURE; INDIVIDUALISTIC REWARD STRUCTURE.

**cooperative training** a vocational program for high school students who are placed in jobs related to the occupational fields of their choice. A program coordinator provides classroom instruction that supplements the job experience while monitoring the students' progress on the job by consulting with employers.

**cooperativity** *n.* the affinity of a series of binding sites to an enzyme or receptor following its binding to the first of those sites. Cooperativity may be positive (i.e., increased) or negative (i.e., decreased).

**Cooper-Harper Handling Qualities Rating Scale** a standardized measure of COGNITIVE LOAD devised for use by NASA. After a test flight, pilots were asked to evaluate, using a simple decision tree, the handling qualities of the aircraft and the demands placed on themselves as a result of any deficiencies. It has since been adapted to many other settings. Also called **Cooper-Harper rating scale**; **Cooper-Harper scale**. [introduced in 1969 by George E. Cooper and Robert P. Harper Jr., U.S. pilots]

**coordinate bilingual** a person who regularly uses two languages, the second language having been learned independently from the first and within a different contextual environment. The mental representation of knowledge about the two languages is thought to be relatively independent. In contrast, a **compound bilingual** is a person who regularly uses two languages but who learned the languages as a result of equal and simultaneous exposure to them. See CODE SWITCHING; DUAL CODING THEORY.

**coordination** *n.* **1.** the capacity of various parts to function together. This can be applied to body parts (e.g., the two legs while walking or the eyes and hands while drawing), to joints (e.g., the motion at the elbow and shoulder as the arm is swung back and forth), and to the muscles producing force at a joint (see ANTAGONISTIC MUSCLES). **2.** in linguistics, the linking of two or more CLAUSES of equal status by means of a coordinating CONJUNCTION (e.g., *and* or *but*), as in *The boy ate the cake, and the girl drank the milk*. This contrasts with **subordination**, in which one of the

clauses is dependent on the other for its meaning, as in *The boy ate the cake that the girl liked*. See COMPLEX SENTENCE.  
—**coordinate** *vb.*

**coordination loss** in groups, a reduction in productivity caused by the imperfect integration of the efforts, activities, and contributions of each member of the group. See also PROCESS LOSS.

**coordination of secondary circular reactions** see SECONDARY CIRCULAR REACTION.

**coordinative structure** see SYNERGY.

**coparenting** *n.* the practice by which parents coordinate their child-rearing practices. It can be supportive in nature, with partners reinforcing one another in child-rearing activities, but it may also be antagonistic, whereby partners are either inconsistent in parenting (e.g., show discrepant levels of parent-child engagement) or undermine each other's child-rearing efforts (e.g., compete for their children's attention or are in conflict about their children). Also called **parental alliance**.

**COPD** abbreviation for CHRONIC OBSTRUCTIVE PULMONARY DISEASE.

**Copernican theory** see HELIOCENTRIC THEORY.

**copicide** *n.* see SUICIDE BY COP.

**coping** *n.* the use of cognitive and behavioral strategies to manage the demands of a situation when these are appraised as taxing or exceeding one's resources or to reduce the negative emotions and conflict caused by stress. See also COPING STRATEGY. —**cope** *vb.*

**coping behavior** a characteristic and often automatic action or set of actions taken in dealing with stressful or threatening situations. Coping behaviors can be both positive (i.e., adaptive), for example, taking time to meditate or exercise in the middle of a hectic day; or negative (i.e., maladaptive, avoidant), for example, not consulting a doctor when symptoms of serious illness appear or persist. See also COPING MECHANISM; COPING STRATEGY.

**coping imagery** a DESENSITIZATION technique in which relaxation is accompanied by images that have proved successful in controlling anxiety in situations that had previously aroused fear. See also COPING-SKILLS TRAINING. [developed by U.S. psychologist Joseph R. Cautela (1927–1999)]

**coping mechanism** any conscious or nonconscious adjustment or adaptation that decreases tension and anxiety in a stressful experience or situation. Modifying maladaptive coping mechanisms is often the focus of psychological interventions. See also COPING BEHAVIOR; COPING STRATEGY.

**coping potential** an individual's evaluation of the prospects of successfully managing environmental demands or personal commitments. Coping potential differs from COPING in that it deals with prospects of successful management (rather than with actual deployment of resources).

**coping-skills training** therapy or educational interventions to increase an individual's ability to manage a variety of often uncomfortable or anxiety-provoking situations, ranging from relatively normal or situational problems (e.g., test taking, divorce) to diagnosed disorders (e.g., phobias). The types of skills taught are tailored to the situation and can involve increasing cognitive, behavioral, and affective proficiencies.

**coping strategy** an action, a series of actions, or a

thought process used in meeting a stressful or unpleasant situation or in modifying one's reaction to such a situation. Coping strategies typically involve a conscious and direct approach to problems, in contrast to DEFENSE MECHANISMS. See also COPING BEHAVIOR; COPING MECHANISM; EMOTION-FOCUSED COPING; PROBLEM-FOCUSED COPING.

**coping style** the characteristic manner in which an individual confronts and deals with stress, anxiety-provoking situations, or emergencies.

**copro-** (**copr-**; **kopro-**; **kopr-**) combining form **1.** feces or filth (e.g., COPROPHILIA). **2.** obscenity (e.g., COPROPHEMIA).

**coprolagnia** (**koprolagnia**) *n.* a PARAPHILIA in which the sight, or even the thought, of excrement may result in sexual pleasure.

**coprolalia** *n.* spontaneous, unprovoked, and uncontrollable use of obscene or profane words and expressions, particularly those related to feces. It is a symptom that may be observed in individuals with a variety of neurological disorders, particularly TOURETTE'S DISORDER. See also LATAH. Also called **coprophrasia**.

**coprophagia** *n.* the eating of feces. Also called **coprophagy**.

**coprophemia** (**koprophemia**) *n.* the use of obscene words or phrases to stimulate sexual excitement. See SCATOPHILIA.

**coprophilia** *n.* literally, the love of feces, which is manifested in behavior as an excessive or pathological preoccupation with the bodily product itself or with objects and words that represent it. In classical psychoanalytic theory, these tendencies are held to represent a fixation during the ANAL STAGE of development.

**coprophrasia** *n.* see COPROLALIA.

**copula** *n.* in linguistics, a verb used so that it has little meaning other than to express equivalence between the SUBJECT and the COMPLEMENT in a sentence. In English, the most important copula is the verb *be*, as in *He is my uncle* or *She is angry*. Other verbs that can function as copulas include *become*, *feel*, *get*, *seem*, and *look*. Also called **linking verb**.

**copulation** *n.* sexual intercourse; COITUS. Copulation usually includes mounting, intromission (insertion of the penis into the vagina), and ejaculation. In some species (e.g., rats), several intromissions are necessary prior to ejaculation, and a female must receive several intromissions in order for ova to be implanted in the uterus. In other species, copulation is necessary to induce ovulation. In many socially monogamous species, such as human beings, copulation can occur irrespective of the stage of the female's ovulatory cycle.

**copulatory lock** see MATE GUARDING.

**cordocentesis** *n.* see PERCUTANEOUS UMBILICAL CORD BLOOD SAMPLING.

**core area** the central part of a group's HOME RANGE that is used most extensively, often where the major locations of food or shelter are found. Home ranges of groups may overlap considerably, but it is rare to find overlap in core areas.

**core conflictual relationship theme** (CCRT) a method of research, case formulation, and PSYCHODYNAMIC PSYCHOTHERAPY that emphasizes central relationship patterns in clients' stories. Three components are

analyzed: the wishes, needs, or intentions of the client with regard to another person; the other person's expected or actual reaction to these; and the client's emotion, behavior, or symptoms as they relate to the other person's reaction. [developed by Lester LUBORSKY]

**core emotion** see PRIMARY EMOTION.

**core gender identity** in psychoanalytic theory, an infant's sense of himself or herself as male or female, typically solidifying in the second year of life. See also GENDER IDENTITY.

**core hours** see FLEXTIME.

**core knowledge** the psychological and neural mechanisms underlying human cognition. Typically, each mechanism is characterized as having four properties. First, it is domain specific and functions to represent a particular kind of entity (e.g., individual objects, object kinds, places in the environment). Second, it is task specific and uses its representations to track and recognize objects and locations. Third, it uses only a subset of the information delivered by the organism's input systems (e.g., visual perception) and sends information only to a subset of its output systems. Fourth, it is relatively automatic and impervious to explicitly held beliefs. In neonativist theory, infants and young children are thought to possess core knowledge in areas (relating, e.g., to people and social relations, objects, numbers, and quantities) that have been important throughout human evolutionary history. Its mechanisms are considered to be shared with many non-human species.

**coreometer** *n.* see PUPILLOMETRY.

**core relational themes** **1.** in the COGNITIVE APPRAISAL THEORY of emotions, a person's judgments of the specific significance of particular events to himself or herself, resulting in the generation of specific emotional states (e.g., anger, joy, envy, or shame) in that person. Any core relational theme has three components: goal relevance, ego involvement, and COPING POTENTIAL. See APPRAISAL DIMENSION; PRIMARY APPRAISAL; SECONDARY APPRAISAL. **2.** repetitive patterns of relating to others that are presumed to be determined by relationships with parents and other influential individuals in early life. These relational themes can include dependent patterns and distrustful patterns, among others.

**core temperature** see DEEP BODY TEMPERATURE.

**CORFing** acronym for cutting off reflected failure. See BASKING IN REFLECTED GLORY.

**Coricidin** *n.* a trade name for DEXTROMETHORPHAN.

**Corino de Andrade's paramyloidosis** see ANDRADE'S SYNDROME.

**cornea** *n.* the transparent part of the outer covering of the eye, through which light first passes. It is continuous laterally with the SCLERA. The cornea provides the primary refractive power of the eye. —**corneal** *adj.*

**corneal reflection technique** a method of studying eye movements using light reflected from the cornea.

**corneal reflex** the reflexive closing of the eyelids when the cornea is touched.

**Cornelia de Lange syndrome** a genetic disorder characterized by slow growth before and after birth, intellectual disability, skeletal abnormalities involving the arms and hands, MICROCEPHALY, short stature, and distinctive fa-

cial features (e.g., thin eyebrows that meet in the middle; long eyelashes; small, widely spaced teeth; a small, upturned nose). Mutations in the *NIPBL*, *SMC1A*, and *SMC3* genes can cause the syndrome, with *NIPBL* the most common cause, accounting for 50% of cases. *SMC1A* and *SMC3* gene mutations tend to cause milder symptoms than those seen in *NIPBL* mutations but are less common. In a third of cases of the disorder, the cause is unknown. Also called **Amsterdam dwarf disease**; **Brachmann-de Lange syndrome**; **de Lange syndrome**. [Cornelia de Lange (1871–1950), Dutch pediatrician]

**Cornell Medical Index (CMI)** a psychological test originally designed for screening military personnel in World War II and later adapted for other purposes, such as diagnosing psychosomatic disorders on the basis of pathological mood and anxiety. The test is now rarely used. Also called **Cornell Selective Index**.

**cornu ammonis** see HIPPOCAMPUS.

**corollary discharge** a neuronal signal that encodes a copy of an intended motor command, which is sent to a structure in the brain (a BRAIN COMPARATOR) that can compare the intended movement with the sensory feedback (REAFFERENCE) that results from the actual movement. For example, when the eyes move, the world does not appear to move, even though the image of the world moves across the retina. The corollary discharge of the intended movement in effect cancels out the movement of the world over the retina. When the eye is moved passively by gently pushing on the eyelid, there is no corollary discharge, and the world appears to jump. Also called **efference copy**.

**corona glandis** the prominent posterior border of the head of the penis. See GLANS PENIS.

**coronal plane** the plane that divides the front (anterior) half of the body or brain from the back (posterior) half. Also called **frontal plane**.

**coronal section** the cross section made by the CORONAL PLANE. Also called **frontal section**.

**coronary artery bypass graft (CABG)** surgery designed to improve blood flow to the heart when coronary arteries are blocked by hardened plaque. A healthy artery or vein from the body is connected, or grafted, to the blocked coronary artery, creating a new path for oxygen-rich blood to flow to the heart muscle. It is the most common type of open heart surgery in the United States.

**coronary heart disease (CHD)** a cardiovascular disorder characterized by restricted flow of blood through the coronary arteries supplying the heart muscle. The cause is usually ATHEROSCLEROSIS of the coronary arteries and often leads to fatal myocardial INFARCTION. Behavioral and psychosocial factors are frequently involved in the development and prognosis of the disease. Also called **coronary artery disease**. See CARDIAC PSYCHOLOGY.

**coronary-prone behavior** actions or patterns of actions believed to be associated with an increased risk of coronary heart disease. See TYPE A PERSONALITY.

**coronary thrombosis** see THROMBOSIS.

**corp-** combining form body or structure.

**corpora** *pl. n.* see CORPUS.

**corporal** *adj.* of or relating to the body.

**corporal punishment** physical punishment; that is, punishment that uses physical force that causes pain but

not injury to correct or control an individual's behavior (e.g., spanking a child). Compare ABUSIVE PUNISHMENT.

**corporeal** *adj.* of a material, tangible nature, as opposed to spiritual.

**corpse phobia** see NECROPHOBIA.

**corpus** *n. (pl. corpora)* **1.** a body or distinct anatomical structure, such as the CORPUS CALLOSUM or CORPUS LUTEUM. **2.** a body of linguistic data, such as recorded conversation or written text, that is subjected to linguistic or psycholinguistic analysis.

**corpus callosum** a large tract of nerve fibers running across the LONGITUDINAL FISSURE of the brain and connecting the cerebral hemispheres: It is the principal connection between the two sides of the brain. The largest of the interhemispheric commissures, it is known as the **great commissure**. See also COMMISSURAL FIBER.

**corpus callosum agenesis** see AGENESIS.

**corpus cavernosum** (*pl. corpora cavernosa*) either of the columns of erectile tissue that form the superior (upper) portion of the body of the penis. A third column of tissue, the CORPUS SPONGIOSUM, lies inferior to the corpora cavernosa.

**corpus luteum** a yellowish glandular mass in the ovary that remains after a GRAAFIAN FOLLICLE has ruptured and released an ovum. Its development is stimulated by LUTEINIZING HORMONE secreted by the anterior pituitary gland, and it functions as a transient endocrine gland, secreting PROGESTERONE.

**corpus mamillare** see MAMMILLARY BODY.

**corpus planning** see LANGUAGE PLANNING.

**corpus spongiosum** a column of tissue on the inferior (lower) side of the body of the penis that surrounds the urethra and extends into the GLANS PENIS. Above it lie the two columns of the corpora cavernosa (see CORPUS CAVERNOSUM). The three columns, which are bound together by connective tissue, make up the erectile tissue of the penis. However, the corpus spongiosum does not become as erect as the corpora cavernosa during an erection. Also called **corpus cavernosum urethrae**.

**corpus striatum** see BASAL GANGLIA.

**correct detection** in SIGNAL DETECTION TASKS, an accurate report of a target stimulus (signal) by the participant in trials in which the signal is present, often expressed as a percentage accuracy rate (see HIT RATE). See also CORRECT REJECTION; FALSE DETECTION; FALSE REJECTION.

**correction** *n.* **1.** a quantity that is added, subtracted, or otherwise introduced to remove inaccuracy from a measure, calculation, or analysis. Corrections are made, for example, when the ASSUMPTIONS about data that accompany a statistical procedure do not correspond to the actual data being analyzed. **2.** in optometry, the rectification of visual defects that are due to refractive errors through the use of CORRECTIVE LENSES.

**correctional facility** any facility that houses or detains individuals who have been formally processed by the criminal or juvenile justice system, for the purpose of reform or rehabilitation. Examples include prisons, juvenile halls, and jails. Also called **correctional institution**.

**correctional psychology** a branch of FORENSIC PSYCHOLOGY concerned with the application of counseling and

clinical techniques to criminal and juvenile offenders in penal and correctional facilities (e.g., reformatories, penitentiaries). **Correctional psychologists** also participate professionally in court activities, probation departments, parole boards, prison administration, supervision of inmate behavior, and programs for the rehabilitation of offenders.

**correction for attenuation** in analyses estimating the relationship between two variables, an adjustment for error introduced during the process of obtaining the measures, where such error serves to underestimate the measured effect.

**correction for continuity** a procedure that is applied to adjust for the fact that a statistical method is based on an assumption that the data have a CONTINUOUS DISTRIBUTION when, in fact, they have a DISCRETE DISTRIBUTION. YATES'S CORRECTION FOR CONTINUITY is an example.

**correction for guessing** a scoring rule for multiple-choice tests such that the EXPECTED VALUE of getting an item correct under the assumption of no knowledge is 0 rather than  $1/n$ , where  $n$  is the number of alternatives. Thus, if a test taker incorrectly answered four questions, a further  $4/n$  would be deleted from his or her score. By thereby penalizing inaccurate responses, the correction discourages a test taker from guessing and provides a better estimate of that person's true ability.

**correction procedure** the repetition or continuation of particular stimulus conditions (usually in DISCRIMINATION training) after certain responses (usually errors) or in the absence of certain responses.

**corrective advertising** advertising required of companies found guilty of DECEPTIVE ADVERTISING by the Federal Trade Commission. Such advertising is designed to counter the incorrect inferences deduced from the deceptive advertisement.

**corrective emotional experience** **1.** an experience through which one comes to understand an event or relationship in a different or unexpected way that results in an emotional coming to terms with it. **2.** originally, a concept from psychoanalysis positing that clients achieve meaningful and lasting change through new interpersonal affective experiences with the therapist, particularly with regard to situations that clients were unable to master as children. [originally described in 1946 by Hungarian psychoanalyst Franz Alexander (1891–1964) and U.S. physician Thomas Morton French (b. 1892)]

**corrective lens** a lens worn on or in front of the eye to correct or improve vision. In eyeglasses, a pair of corrective lenses is mounted in a frame worn on the face; in contact lenses, the corrective lens is applied directly to the eye.

**corrective therapy** see KINESIOTHERAPY.

**correct rejection** in SIGNAL DETECTION TASKS, an accurate decision by the participant that a target stimulus (signal) is not present. See also CORRECT DETECTION; FALSE DETECTION; FALSE REJECTION.

**correlate** **1.**  $n.$  a variable that is related to another variable. See CORRELATION. **2.**  $vb.$  to calculate a CORRELATION COEFFICIENT.

**correlated samples** see DEPENDENT SAMPLES.

**correlation**  $n.$  the degree of a relationship (usually linear) between two variables, which may be quantified as a CORRELATION COEFFICIENT.

**correlational fallacy** the fallacy that association implies causation: the practice of drawing conclusions about cause and effect based solely on observations of a relationship between variables. For example, assume a researcher found that dieters tend to weigh more than other people. If the investigator were to conclude that the diet is responsible for the additional weight, then he or she has committed a correlational fallacy.

**correlational redundancy** see DISTRIBUTIONAL REDUNDANCY.

**correlational research** a type of study in which relationships between variables are simply observed without any control over the setting in which those relationships occur or any manipulation by the researcher. FIELD RESEARCH often takes this form. For example, consider a researcher assessing teaching style. He or she could use a correlational approach by attending classes on a college campus that are each taught in a different way (e.g., lecture, interactive, computer aided) and noting any differences in student learning that arise. Also called **correlational design**; **correlational method**; **correlational study**. Compare EXPERIMENTAL RESEARCH.

**correlation analysis** any of various statistical procedures for identifying relationships among variables and determining their strength or degree. CANONICAL ANALYSIS and FACTOR ANALYSIS are examples. Correlation analyses make no inferences about causality (compare CAUSAL ANALYSIS). Also called **association analysis**.

**correlation barrier** the notion that there is a maximum correlation that can be obtained between tests of intelligence and the criteria that these tests are intended to predict, such as various measures of life success. Typically, such tests have only a moderate relationship (e.g., correlation coefficients between .3 and .5) with school performance and measures of success in later life.

**correlation coefficient** a numerical index reflecting the degree of linear relationship between two variables. It is scaled so that the value of +1 indicates a perfect positive relationship (such that high scores on variable  $x$  are associated with high scores on variable  $y$ ), -1 indicates a perfect negative relationship (such that high scores on variable  $x$  are associated with low scores on variable  $y$ , or vice versa), and 0 indicates no relationship. The most commonly used type of correlation coefficient is the Pearson PRODUCT-MOMENT CORRELATION COEFFICIENT.

**correlation matrix** a symmetrical SQUARE MATRIX displaying the degree of association between all possible pairs of variables contained in a set. A CORRELATION COEFFICIENT between the  $i$ th and  $j$ th variables in a set of variables is displayed in the intersection of the  $i$ th row and the  $j$ th column of the matrix.

**correlation ratio** (symbol:  $\eta$ ) a measure of the strength or degree of relationship between two variables whose association is nonlinear (i.e., it cannot be depicted graphically by a straight line). Often referred to as **eta**, the correlation ratio is the nonlinear equivalent of the CORRELATION COEFFICIENT.

**correspondence**  $n.$  in ATTRIBUTION THEORY, the extent to which an observed behavior, such as pushing past others to go to the front of a line, is believed to correlate to a general personality trait in the actor, such as rudeness or aggressiveness. Observers have a strong tendency to overestimate the correspondence of behaviors with traits (the

FUNDAMENTAL ATTRIBUTION ERROR). See ACTOR—OBSERVER EFFECT; CORRESPONDENT INFERENCE THEORY. —**correspondent** *adj.*

**correspondence bias** see FUNDAMENTAL ATTRIBUTION ERROR.

**correspondence problem** the requirement that elements in one image must be matched by the visual system with the same elements in another image when the two images differ from one another in some respect. In STEREOPSIS, the features seen through the left eye must be matched to the features seen through the right eye before depth information can be inferred. In APPARENT MOVEMENT, the elements in one stationary image must be matched with the same elements in the next stationary image if the elements are to be perceived as moving. Theories of object recognition must take into account the ability to recognize objects as the same, even though they may appear from different perspectives in two different scenes. The correspondence problem is solved effortlessly by the visual system but has proven to be extremely difficult to solve in artificial vision.

**correspondence training** a BEHAVIOR THERAPY intervention for children and adolescents in which the clients are tangibly or socially reinforced either for verbally promising to do something and then following through or for doing a desired behavior and then verbally reporting on the activity. Promises and reports can be made to either an adult or a peer.

**correspondent inference theory** a model describing how people form inferences about other people's stable personality characteristics from observing their behaviors. Correspondence between behaviors and traits is more likely to be inferred if the actor is judged to have acted (a) freely, (b) intentionally, (c) in a way that is unusual for someone in the situation, and (d) in a way that does not usually bring rewards or social approval. See also ATTRIBUTION THEORY. [proposed in 1965 by U.S. social psychologists Edward E. Jones (1926–1993) and Keith E. Davis (1936–)]

**corridor illusion** an illustration of SIZE CONSTANCY in which two identical figures appear to be radically different in size. If the figures are placed in a picture of a corridor, the one placed in the distance appears larger than the one placed in the foreground. This is because DEPTH CUES affect expectations about true size.

**corroboration** *n.* evidence to support a theory, fact, opinion, or the like. Austrian-born British philosopher Karl Popper (1902–1994) regarded mere corroboration as insufficient grounds for acceptance of a theory. He held instead that the proper test of a theory was one that had a high probability of refuting the theory if it was wrong, and that a theory lacking FALSIFIABILITY was not scientific. —**corroborate** *vb.*

**cortex** *n.* (*pl.* **cortices**) the outer or superficial layer or layers of a structure, as distinguished from the central core. In mammals, the cortex of a structure is identified with the name of the gland or organ, for example, the adrenal cortex (see ADRENAL GLAND), CEREBELLAR CORTEX, or CEREBRAL CORTEX. Compare MEDULLA. —**cortical** *adj.*

**cortical activation** activation of regions of the cerebral cortex or cerebellar cortex. It can be achieved by sensory stimulation or engagement in cognitive tasks or by such techniques as TRANSCRANIAL MAGNETIC STIMULATION. The activation can be recorded by noninvasive tech-

niques, such as ELECTROENCEPHALOGRAPHY, FUNCTIONAL MAGNETIC RESONANCE IMAGING, or POSITRON EMISSION TOMOGRAPHY.

**cortical amaurosis** see AMAUROSIS.

**cortical amnesia** a form of amnesia due to neurological causes, such as a stroke or brain injury.

**cortical area** see BRODMANN'S AREA; CEREBRAL CORTEX.

**cortical-arousal factor** in psychological aesthetics, a response to a work of art that is associated with ratings that are high on the drowsy-alert and weak-powerful scales. Compare UNCERTAINTY-AROUSAL FACTOR. [proposed by Daniel E. BERLYNE]

**cortical barrel** in nonhuman animals with facial whiskers, a column of neurons in the SOMATOSENSORY AREA that receives sensory information from those whiskers. The cortical barrels correspond to the whiskers in a somatotopic fashion (see SOMATOTOPIC ORGANIZATION).

**cortical blindness** blindness, with normal pupillary responses, that is due to complete destruction of the OPTIC RADIATIONS or the STRIATE CORTEX. Because the subcortical structures (white matter) of the visual system are involved, it is also called **cerebral blindness**. Typically caused by a stroke affecting the occipital lobe of the brain, cortical blindness can also result from traumatic injury or HYPOXIA. In children, it is often a consequence of hydrocephalus, meningitis, toxic or hypertensive encephalopathy, trauma, or diffuse demyelinating degenerative disease. Complete loss of vision in a portion of the visual field is called **partial cortical blindness**.

**cortical center** **1.** an area of the CEREBRAL CORTEX where sensory fibers terminate or motor fibers originate. **2.** an area of the cerebral cortex specialized for a certain function, such as the speech center or the vision center.

**cortical column** one of the vertical groups of interconnected neurons that span several CORTICAL LAYERS and constitute the basic functional organization of the NEO-CORTEX. Columnar organization is most evident in visual cortex (see OCULAR DOMINANCE COLUMN; ORIENTATION COLUMN).

**cortical control** **1.** the normal regulation of an activity, such as movement of a limb, by the CEREBRAL CORTEX. **2.** control of a PROSTHESIS by signals recorded from the cerebral cortex, which are computer-processed and amplified.

**cortical deafness** deafness that is caused by damage to auditory centers in the cerebral cortex of the brain. The peripheral auditory system (which includes the retrocochlear neural pathways terminating in the brainstem) can be intact in this condition.

**cortical dementia** dementia arising from degeneration of the cortical areas of the brain, rather than the subcortical (deeper) areas. The most common dementia of this type is ALZHEIMER'S DISEASE. Compare SUBCORTICAL DEMENTIA.

**cortical dysplasia** abnormality in the development (e.g., size, shape) of the cerebral cortex.

**cortical evoked potential** an EVOKED POTENTIAL observed in the cerebral cortex. Also called **cortical evoked response**.

**cortical hearing loss** hearing loss associated with auditory disorders due to damage to the higher neurological centers of the brain.

**cortical inhibition** inhibition of activity originating in the CEREBRAL CORTEX or CEREBELLAR CORTEX.

**corticalization** *n.* see ENCEPHALIZATION.

**cortical lamina** any of the layers of cells in the cerebral cortex. See BRODMANN'S AREA.

**cortical layers** the layers of neurons that constitute the structure of the cerebral cortex and cerebellar cortex. In the cerebral cortex the number of layers varies, reaching a maximum of six in the NEOCORTEX. These six layers, identified by Roman numerals and starting from the outer surface, are I, the **plexiform molecular layer**, a narrow band of MYELINATED FIBERS; II, the **external granular layer**, containing GRANULE CELLS and PYRAMIDAL CELLS; III, the **external pyramidal layer**, with medium-sized pyramidal cells in the outer zone and larger pyramidal cells in the inner zone; IV, the **internal granular layer**, which contains synapses of layer-III cells along with STELLATE CELLS categorized as granule cells; V, the **ganglionic** (or **internal pyramidal**) **layer**, which includes large pyramidal cells and the giant BETZ CELLS; and VI, the **polymorphic fusiform** (or **multiform**) **layer**, which contains cells of many shapes but mainly spindle-shaped and pyramidal cells.

**cortical lesion** a pathological change in the CEREBRAL CORTEX of the brain, which may be congenital or acquired and due to any cause.

**cortical localization** see LOCALIZATION OF FUNCTION.

**cortical magnification factor** the population density of the neurons in a CORTICAL MAP with respect to degrees of visual angle. Visuotopical maps in the brain contain topographical representations of the visual field. Earlier maps of this kind preserved point-to-point correspondence with the retina and are therefore called RETINOTOPIC MAPS. In such maps the cortical magnification factor can be expressed in terms of the number of square millimeters of cortical surface needed to represent each degree of visual angle. At the center of gaze, the retinal FOVEA CENTRALIS (2°–4° of visual angle) has a high cortical magnification factor compared to the periphery. Also called **magnification factor**.

**cortical map** a topographical representation of arrays of sensory receptors or motor effectors (muscle units) in the cerebral cortex. Examples are the topographical maps of visual point features such as light, contrast, spatial frequency (size), color, movement, and so forth in the visual cortex (see RETINOTOPIC MAP) and the sound frequency maps of the auditory cortex (see TONOTOPIC ORGANIZATION). See also LOCALIZATION OF FUNCTION; TOPOGRAPHIC ORGANIZATION.

**cortical neuron** a nerve cell that has its cell body in the CEREBRAL CORTEX.

**cortical potential** an electric potential that originates in neurons of the cerebral cortex. See BRAIN WAVES; ELECTROENCEPHALOGRAPHY.

**cortical process** any of the mechanisms of the cerebral cortex that are involved in cognition. The early stages of cognitive input analysis are called **early cortical processes**; the later, more complex mechanisms are called **higher cortical processes**. See also EXECUTIVE FUNCTIONS.

**cortical sensory aphasia** see WERNICKE'S APHASIA.

**cortical-subcortical motor loop** a loop, made up of projections between the MOTOR CORTEX and structures in

the BASAL GANGLIA and the THALAMUS, that monitors and sequences ongoing motor behaviors.

**cortico-** combining form cortex.

**corticobasal ganglionic degeneration (CBGD)** a degenerative condition of the BASAL GANGLIA resulting in APRAXIA, rigidity, DYSTONIA, and cognitive deficits. Also called **corticostriatonigral degeneration**.

**corticobulbar fiber** see CORTICONUCLEAR FIBER.

**corticofugal** *adj.* describing nerve fibers or tracts that exit from the cerebral or cerebellar cortex. Corticofugal nerve fibers from the cerebral cortex include corticospinal, corticonuclear, and corticopontine fibers. Compare CORTICOPETAL.

**corticomedial group** one of the two main groups of nuclei in the AMYGDALA within the brain. It includes the CENTRAL NUCLEUS and receives mainly olfactory and pheromonal information; its output, via the STRIA TERMINALIS, is to the HYPOTHALAMUS and the basomedial FOREBRAIN. See also BASOLATERAL GROUP.

**corticonuclear fiber** any of a group of fibers forming part of the PYRAMIDAL TRACT that extend from the cerebral cortex to nuclei in the midbrain, pons, and medulla oblongata. Also called **corticobulbar fiber**.

**corticopetal** *adj.* describing nerve fibers or tracts that are directed toward the cerebral or cerebellar cortex. Compare CORTICOFUGAL.

**corticopontine** *adj.* relating to or connecting the cerebral cortex and the pons in the brain.

**corticospinal fiber** a nerve fiber of the corticospinal tract.

**corticospinal tract** a major MOTOR PATHWAY that originates in the cerebral cortex (see MOTOR CORTEX), passes through the PYRAMID of the medulla oblongata, and descends to terminate in the spinal cord. At the pyramid, most of its fibers cross over to form the LATERAL CORTICOSPINAL TRACT; the remaining fibers, forming the smaller **anterior corticospinal tract**, descend anteriorly in the white matter of the spinal cord to terminate in the ANTERIOR HORNS. See also PYRAMIDAL TRACT.

**corticosteroid** *n.* any of the steroid hormones produced by the adrenal cortex, the outer layer of the ADRENAL GLAND. They include the GLUCOCORTICOIDs (e.g., CORTISOL), which are involved in carbohydrate metabolism; and the MINERALOCORTICOIDs (e.g., ALDOSTERONE), which have a role in electrolyte balance and sodium retention. Also called **adrenocorticoid**.

**corticosteroid therapy** medical treatment that involves the use of CORTICOSTEROID drugs. Both MINERALOCORTICOIDs and GLUCOCORTICOIDs may be used as replacement therapy in patients whose secretion of the natural hormones is deficient, either through disease or surgical removal of one or both adrenal glands. However, glucocorticoids are most widely used as anti-inflammatory agents; they are also used in the treatment of asthma, dermatologic conditions, and seasonal rhinitis.

**corticosterone** *n.* a CORTICOSTEROID hormone with GLUCOCORTICOID functions that include regulating the metabolism of proteins, fats, and carbohydrates into energy sources for body cells. The concentration of corticosterone in the plasma is used as an index of stress.

**corticostriatonigral degeneration** see CORTICOBASAL GANGLIONIC DEGENERATION.

**corticotropin** *n.* a hormone secreted by the anterior pituitary gland, particularly when a person experiences stress. It stimulates the release of various other hormones (primarily CORTICOSTEROIDS) from the adrenal cortex, the outer layer of the adrenal gland. Also called **adrenocorticotrophic hormone (ACTH)**; **adrenocorticotropin**.

**corticotropin-releasing factor (CRF)** a neuropeptide produced by the hypothalamus that is important in the control of the hypothalamic–pituitary–adrenal response to stress (see HYPOTHALAMIC–PITUITARY–ADRENAL AXIS). It controls the daily rhythm of corticotropin (ACTH) release by the pituitary gland and is also involved in a number of behaviors, such as anxiety, food intake, learning, and memory. Also called **ACTH-releasing factor**; **corticotropin-releasing hormone (CRH)**.

**cortisol** *n.* a CORTICOSTEROID hormone whose GLUCOCORTICOID activity increases BLOOD SUGAR levels. Blood levels of cortisol in humans vary according to sleep–wake cycles (generally being highest around 9:00 a.m. and lowest around midnight) and other factors; for example, they increase with lack of sleep and during pregnancy but decrease with diseases of the liver and kidneys. Cortisol is considered the primary STRESS HORMONE: In response to stress or injury, blood cortisol levels, and therefore glucose levels, increase, as does blood pressure, whereas activity of the immune system decreases and release of inflammatory substances in the body is contained. Cortisol thus improves the body's ability to manage stress and to repair itself, and, since 1963, it and its synthetic analogs have been administered in the treatment of chronic inflammatory and autoimmune disorders. Exposure to prolonged stress, however, can lead to excessive levels of cortisol, which can have deleterious effects on the body (e.g., hyperglycemia). Cortisol has also been implicated in intrauterine growth retardation of the fetuses of pregnant women exposed to profound environmental stress (e.g., trauma, industrial or natural disasters). Also called **hydrocortisone**.

**cortisone** *n.* a CORTICOSTEROID that is produced naturally by the adrenal cortex or synthetically. Cortisone is biologically inactive but is converted to the active hormone CORTISOL in the liver and other organs. It is used therapeutically in the management of disorders caused by corticosteroid deficiency.

**corumination** *n.* in conversations between friends or other individuals in a dyadic relationship, an excessive focus on personal problems and negative affect to the exclusion of any other topic of conversation. [proposed in 2002 by U.S. psychologist Amanda J. Rose]

**coryza** *n.* the common cold, usually with nasal discharge (runny nose).

**COSC** abbreviation for COMBAT AND OPERATIONAL STRESS CONTROL.

**cosleeping** *n.* a practice in which one or both parents sleep in the same room with their infant, near enough for them to touch. Cosleeping arrangements may include three-sided bassinets that attach to the adult bed or cribs placed next to the bed. These arrangements are thought to promote BONDING, encourage breastfeeding, and improve infant sleep. See also BED-SHARING.

**cosmetic surgery** a general category of multiple spe-

cific surgical procedures designed to improve or enhance some aspect of physical appearance. See PLASTIC SURGERY.

**cosmic consciousness** as originally conceived by Canadian psychiatrist Richard M. Bucke (1837–1902), the highest level of consciousness that can be attained by humans, experienced as a sense of the order, totality, and “living presence” of the universe and accompanied by intellectual enlightenment, moral exaltation, and a “consciousness of eternal life” or immortality. Bucke arrived at his coinage and understanding of the term initially through a mystical experience that he had at the age of 36. His best known book on the subject, *Cosmic Consciousness: A Study in the Evolution of the Human Mind*, was published in 1901. The term has since become more restrictively described as a sense of the totality of the universe and more broadly associated not only with mystical ecstasy but also with PEAK EXPERIENCES, with the use of hallucinogenic drugs, and with such techniques as meditation, yoga, breathing exercises, fasting, and dwelling on certain paradoxical sayings (see ZEN BUDDHISM). See also ALTERED STATE OF CONSCIOUSNESS; MYSTICISM.

**COSR** abbreviation for combat and operational stress reaction. See COMBAT STRESS REACTION.

**cost analysis** a systematic determination of the costs associated with the implementation of a program's services. These include direct personnel, material, and administrative costs, calculated from the perspective of a given purchaser (e.g., government agency, client), budgetary category, and time period. Once determined, these costs are utilized further in COST–BENEFIT ANALYSIS or COST–EFFECTIVENESS ANALYSIS.

**cost–benefit analysis 1.** an analytic procedure that attempts to determine and compare the economic efficiency of different programs. Costs and benefits are reduced to their monetary value and expressed in a **cost–benefit** (or **benefit–cost**) **ratio**. Compare COST–EFFECTIVENESS ANALYSIS. See also COST–OFFSET ANALYSIS. **2.** in BEHAVIORAL ECOLOGY, a method of predicting which behavioral strategies are likely to be adaptive by comparing the potential costs and potential benefits of each possible behavior. Those behaviors that will lead to greater benefits relative to costs will be those that survive through NATURAL SELECTION. **3.** see COST–REWARD ANALYSIS.

**cost containment** a program goal that seeks to control the costs involved in managing and delivering the PROGRAM OUTCOME. In health administration, a range of fiscal strategies is used to prevent health care costs from increasing. See also COST ANALYSIS.

**cost-effectiveness analysis** a measure of PROGRAM EFFICACY or economic efficiency expressed in terms of the cost of achieving a unit of PROGRAM OUTCOME. Cost-effectiveness analysis measures the monetary value of resources used with clinical health effects (e.g., death rate, test performance), whereas in a COST–BENEFIT ANALYSIS the economic return (e.g., reduced future use of health services) is expected to exceed the treatment cost (e.g., providing vaccinations). Cost-effectiveness analysis is most appropriate when programs have one main identifiable evaluation outcome, when future costs are not confounded with changes in outcome, or when outcomes are not directly reducible to monetary payoffs. See also COST–OFFSET ANALYSIS.

**cost of concurrence** the decrease that occurs in performance of a task that is placed in a dual-task context,

even when the instructions are to emphasize that task. This cost is measured in terms of changes in reaction time or accuracy and is estimated from an analysis of a PERFORMANCE-OPERATING CHARACTERISTIC.

**cost-offset analysis** a measure of economic efficiency expressed in terms of interventions that save money independent of their health benefits. This saving is related to reduced health care utilization and costs (e.g., the use of generic vs. nongeneric pharmaceuticals) and may be a component included in COST-BENEFIT ANALYSIS or COST-EFFECTIVENESS ANALYSIS.

**cost-reward analysis** in social psychology, a model that attempts to explain helping behavior in terms of the reinforcements and costs associated with specific helping actions. A helping act that possesses either high reinforcement value or very low cost value is more likely to be performed than a low-reinforcement, high-cost act. Also called **cost-benefit analysis**.

**Cotard's syndrome** a psychotic condition characterized by severe depression and intense nihilistic delusions (see NIHILISM) in which individuals insist that their bodies or parts thereof, and in some cases the whole of reality, have disintegrated or ceased to exist. [first reported in 1880 by Jules Cotard (1840–1887), French neurologist, who called it *délire de négation* (“delirium of negation”)]

**cot death** see SUDDEN INFANT DEATH SYNDROME.

**cotherapy** *n.* therapy by two therapists working with a client, pair of clients (e.g., a couple), family, or group to enhance understanding and to change behavior and relationships during treatment.

**cotwin control** see TWIN CONTROL.

**couch** *n.* in psychoanalysis, the article of furniture on which the patient reclines. The use of the couch is based on the theory that this posture will facilitate FREE ASSOCIATION, encourage the patient to direct attention inward to his or her world of feeling and fantasy, and enable the patient to access his or her unconscious mind. The expression “on the couch” is sometimes used popularly to indicate psychoanalytic treatment. Also called **analytic couch**.

**cough suppressant** see ANTITUSSIVE.

**coulrophobia** *n.* an excessive, persistent, and irrational fear of clowns. Situations in which clowns may be encountered (e.g., at birthday parties, circuses) are often avoided or else endured with intense anxiety or distress.

**counseling** *n.* professional assistance in coping with personal problems, including emotional, behavioral, vocational, marital, educational, rehabilitation, and life-stage (e.g., retirement) problems. The COUNSELOR makes use of such techniques as ACTIVE LISTENING, guidance, advice, discussion, CLARIFICATION, and the administration of tests.

**counseling process** the interpersonal process engaged in by COUNSELOR and client as they attempt to define, address, and resolve specific problems of the client in face-to-face interviews. See also COUNSELING.

**counseling psychology** the branch of psychology that specializes in facilitating personal and interpersonal functioning across the lifespan. Counseling psychology focuses on emotional, social, vocational, educational, health-related, developmental, and organizational concerns—such as improving well-being, alleviating distress and maladjustment, and resolving crises—and addresses issues from individual, family, group, systems, and organizational per-

spectives. The **counseling psychologist** has received professional education and training in one or more COUNSELING areas, such as educational, vocational, employee, aging, personal, marriage, or rehabilitation counseling. In contrast to a clinical psychologist (see CLINICAL PSYCHOLOGY), who usually emphasizes origins of maladaptations, a counseling psychologist emphasizes adaptation, adjustment, and more efficient use of the individual's available resources.

**counseling relationship** the interaction between counselor and client in which the relationship is professional yet also characterized by empathic warmth and AUTHENTICITY, with the counselor bringing professional training, experience, and personal insight to bear on the problems revealed by the client. The relationship is considered to be of central importance in bringing about desired change.

**counseling services** professional help provided by a government, social service, or mental health agency to individuals, families, and groups. Services are typically provided by licensed counselors, psychologists, social workers, and nurses. See also COUNSELING.

**counselor** *n.* an individual professionally trained in counseling, psychology, social work, or nursing who specializes in one or more counseling areas, such as vocational, rehabilitation, educational, substance abuse, marriage, relationship, or family counseling. A counselor provides professional evaluations, information, and suggestions designed to enhance the client's ability to solve problems, make decisions, and effect desired changes in attitude and behavior.

**counterargument** *n.* the contradiction of specific points in a formal ARGUMENT, of information in a persuasive message, or of content in an internal thought.

**counterattitudinal advocacy** a persuasive message that contradicts a person's current attitude.

**counterattitudinal behavior** behavior that is inconsistent with an attitude. Having a negative attitude toward a political candidate but agreeing to donate money to that candidate's political campaign is an example of counterattitudinal behavior. See also ATTITUDE-BEHAVIOR CONSISTENCY. Compare PROATTITUDINAL BEHAVIOR.

**counterattitudinal role play** a technique used in PSYCHODRAMA or ROLE PLAY in which the individuals taking part are directed to express opinions contrary to those in which they believe.

**counterbalancing** *n.* arranging a series of experimental conditions or treatments in such a way as to minimize the influence of extraneous factors, such as practice or fatigue, on experimental results. In other words, counterbalancing is an attempt to reduce or avoid CARRYOVER EFFECTS and ORDER EFFECTS. A simple form of counterbalancing would be to administer experimental conditions in the order A-B to half of the participants and in the order B-A to the other half; a LATIN SQUARE would be a more complex form.

**countercathexis** *n.* see ANTICATHEXIS.

**countercompulsion** *n.* a COMPULSION that is secondarily developed to resist the original compulsion when the latter cannot be continued. The new compulsion then replaces the original so that the compulsive behavior can continue.



**counterconditioning** *n.* an experimental procedure in which a nonhuman animal, already conditioned to respond to a stimulus in a particular way, is trained to produce a different response to the same stimulus that is incompatible with the original response. This same principle underlies many of the techniques used in BEHAVIOR THERAPY to eliminate unwanted behavior in people.

**counterconformity** *n.* see ANTICONFORMITY.

**counterculture** *n.* a SOCIAL MOVEMENT that maintains its own alternative mores and values in opposition to prevailing cultural norms. The term is historically associated with the HIPPIE movement and attendant DRUG CULTURE of the late 1960s and early 1970s, which rejected such societal norms as the work ethic and the traditional family unit. See also SUBCULTURE; YOUTH CULTURE. —**countercultural** *adj.*

**counterfactual** *n.* in linguistics, a conditional statement that is contrary to fact, as in *If the Japanese had not bombed Pearl Harbor, the United States would not have become engaged in World War II.* See CONDITIONAL CLAUSE.

**counterfactual thinking** **1.** imagining ways in which events in one's life might have turned out differently. This often involves feelings of regret or disappointment (e.g., *If only I hadn't been so hasty*) but may also involve a sense of relief, as at a narrow escape (e.g., *If I had been standing 3 feet to the left . . .*). **2.** any process of reasoning based on a conditional statement of the type "If X, then Y" where X is known to be contrary to fact, impossible, or incapable of empirical verification. Counterfactual thinking of the first sort is common in such historical speculations as *If Hitler had been killed in July 1944, then . . .* Counterfactual thinking of the second and third types can play a useful role in evaluating the implications of a theory or HEURISTIC and in THOUGHT EXPERIMENTS. See also AS-IF HYPOTHESIS; CONDITIONAL REASONING.

**counteridentification** *n.* see CONCORDANT IDENTIFICATION.

**countermeasure** *n.* in POLYGRAPH testing, any effort on the part of an individual to avoid being classified as deceitful or dishonest. Typically, individuals may use either drugs to reduce their level of physiological arousal or physical means (e.g., biting their tongue) to increase arousal to questions unrelated to the issue of interest.

**countermeasure-intervention program** see SOCIAL REFORM PROGRAM.

**counterphobic character** a personality that takes pleasure in pursuing risky or dangerous activities that other people would normally find anxiety provoking. In psychoanalytic theory, this is explained as a manic DEFENSE that achieves satisfaction from the feeling of mastering anxiety.

**counterproductive work behavior (CWB)** undesirable employee behavior that can undermine the goals of an organization or its members and can negatively affect the organization's financial well-being. CWBs cover a wide range of behavior, such as sabotage, theft, absenteeism, bullying, sexual harassment, discrimination, WORKPLACE VIOLENCE, drug and alcohol abuse, and violation of confidentiality agreements. These behaviors, as well as their testing and assessment, are the subject of considerable research in INDUSTRIAL AND ORGANIZATIONAL PSYCHOLOGY. See also INTEGRITY TESTING.

**countershading** *n.* a form of CAMOUFLAGE that involves using differential light and dark areas on the body to minimize the ability of predators to detect the organism. For example, fish often have dark-colored backs and light-colored bellies. A predator from below has difficulty discriminating the fish from the sky above, and a predator from above has difficulty discriminating the fish from the dark substrate below.

**countershock** *n.* a mild electric shock administered to a patient undergoing ELECTROCONVULSIVE THERAPY (ECT) for 1 minute after the convulsive shock. The countershock is intended to relieve some of the common aftereffects of ECT, such as postconvulsion confusion or amnesia.

**countershock phase** see GENERAL ADAPTATION SYNDROME.

**countersuggestion** *n.* in psychotherapy, a suggestion by the therapist that contradicts or opposes a previous suggestion or a particular fixed idea. This strategy is used to decrease the influence of the previous suggestion or idea, provide an alternative, or both.

**countertransference** *n.* the therapist's unconscious (and often conscious) reactions to the patient and to the patient's TRANSFERENCE. These thoughts and feelings are based on the therapist's own psychological needs and conflicts and may be unexpressed or revealed through conscious responses to patient behavior. The term was originally used to describe this process in psychoanalysis but has since become part of the common lexicon in other forms of psychodynamic psychotherapy and in other therapies. In CLASSICAL PSYCHOANALYSIS, countertransference was viewed as a hindrance to the analyst's understanding of the patient, but to modern analysts and therapists, it may serve as a source of insight into the patient's effect on other people. In either case, the analyst or therapist must be aware of, and analyze, countertransference so that it can be used productively within the therapeutic process. See also CONTROL ANALYSIS.

**coupled oscillators** a DYNAMIC SYSTEM model used to represent many aspects of rhythmical movements, such as those of the lower limbs during locomotion. See also CENTRAL PATTERN GENERATOR.

**couples counseling** COUNSELING in which guidance and advice focus on issues confronting relationships between partners. Couples counseling is short-term and problem oriented; it may include a variety of approaches to such difficult areas as shared responsibilities, expectations for the future, and loyalties.

**couples therapy** therapy in which both partners in a committed relationship are treated at the same time by the same therapist or therapists. Couples therapy is concerned with problems within and between the individuals that affect the relationship. For example, one partner may have undiagnosed depression that is affecting the relationship, or both partners may have trouble communicating effectively with one another. Individual sessions may be provided separately to each partner, particularly at the beginning of therapy; most of the course of therapy, however, is provided to both partners together. Couples therapy for married couples is known as **marital therapy**.

**coupon-return technique** a method of testing advertising effectiveness in a printed medium, such as a magazine or newspaper, by inducing the reader to return a coupon by mail. The technique is sometimes used on a

**SPLIT-RUN basis** in which the coupon is offered only to one part of the publication's readership; alternatively, variations of an advertisement may be tested in different demographic areas in which the publication is sold. Some publications cooperate with advertisers using the coupon-return technique by charging for advertising space on a **per-inquiry (p.i.) basis**, each coupon returned counting as an inquiry.

**courage** *n.* the ability to meet a difficult challenge despite the physical, psychological, or moral risks involved in doing so. Examples of acts of courage include saving another's or one's own life against a meaningful threat; coping with a painful, debilitating, or terminal illness; overcoming a destructive habit; and voicing an unpopular opinion. Also called **bravery**; **valor**. —**courageous** *adj.*

**course** *n.* the length of time a disorder, illness, or treatment typically lasts; its natural progression; and (if applicable) its recurrence over time.

**course modifier** a pattern that develops in a disorder (e.g., recurrence, seasonal variation) that helps to predict its future course or may serve to alter its usual course.

**courtesan fantasy** see HETAERAL FANTASY.

**court-ordered treatment** any assessment, treatment, consultation, or other service for defendants, plaintiffs, or criminal offenders that is mandated by a judge or magistrate.

**courtship** *n.* the process of attracting a partner as part of SEXUAL BEHAVIOR, a period critical to reproductive success in many species. Animal courtship involves such activities as identifying and evaluating a potential mate, locating and defending appropriate sites for nests or dens, synchronizing the hormones involved in reproduction and engaging in other physiological preparations, and at times forming or strengthening PAIR BONDS. Human courtship enables couples to develop mutual commitment, which has marriage as its goal, although it may take widely different forms in different cultures. For example, in some societies bodily contact between courting couples may be forbidden, whereas in others it may be accepted and even encouraged; or a man may be required in certain societies to obtain parents' permission before asking a woman to marry him yet in others such a practice may be considered unnecessary or even impolite. See also MATE SELECTION.

**couvade** *n.* **1.** a custom in some cultures in which the father takes to bed before or after his child is born, as if he himself suffered the pain of childbirth. **2.** abdominal pain or other somatic symptoms appearing in male partners of pregnant women, usually presumed to be PSYCHOGENIC in origin. Also called **couvade syndrome**.

**covariance** *n.* a scale-dependent measure of the relationship between two variables such that corresponding pairs of values of the variables are studied with regard to their relative distance from their respective means. A positive covariance results when values of one variable that lie above the mean of that variable tend to be paired with values of the second variable that also lie above the mean of that variable. A negative covariance results when values of one variable that lie above the mean tend to be paired with values of the second variable that lie below the mean.

**covariance matrix** a SQUARE MATRIX that represents how variance in each variable in a set is related to variance in all other variables in the set. The covariances between pairs of variables are located at the intersection of the row

and column that correspond to the two variables. The quantities along the diagonal of the matrix are variances rather than covariances. Also called **dispersion matrix**; **variance-covariance matrix**.

**covariate** *n.* a variable that exhibits COVARIATION with a measured outcome or DEPENDENT VARIABLE: It is often included in an analysis so that its effect may be taken into account when interpreting the effects of the INDEPENDENT VARIABLES of interest. For example, covariates are used in ANALYSES OF COVARIANCE to statistically adjust groups so that they are equivalent with regard to these variables; they may also be used in MULTIPLE REGRESSION to minimize error that may arise from omitting any noncentral but potentially influential variables. Also called **concomitant variable**.

**covariation** *n.* a relationship between two quantitative variables such that as one variable tends to increase (or decrease) in value, the corresponding values of the other variable tend to also increase (or decrease). For example, if a person's weight consistently rises as he or she grows older, then the two variables would be exhibiting covariation. See also ILLUSORY COVARIATION. —**covary** *vb.*

**covariation principle** see ATTRIBUTION THEORY.

**covenant marriage** a legal innovation in American marriage, first enacted in Louisiana in 1997 but not available in all states, in which heterosexual couples agree to participate in premarital counseling and to accept significantly more restricted grounds for divorce. Covenant marriage laws were designed to reduce the likelihood of divorce by strengthening marriages while making divorces more difficult to obtain. More symbolically, covenant marriage laws allow spouses to signal to each other and to their families and social networks that they view their marital vows as especially meaningful and permanent. Covenant marriage laws are usually written without regard to religion, but in practice, couples who choose a covenant marriage tend to be religious. Thus, although covenant marriage is associated with a lower risk of divorce, this may be attributable to the spouses' religious beliefs and practices rather than to the covenant marriage per se.

**coverage** *n.* health care benefits and services provided within a given HEALTH PLAN.

**covering-law model** a model for SCIENTIFIC EXPLANATION positing that a phenomenon is explained only if it can be deduced from a set of statements among which is at least one general scientific law. Thus, a phenomenon can be explained only if it can be predicted. See also DEDUCTIVE-NOMOLOGICAL MODEL. [proposed by German philosopher of science Carl Gustav Hempel (1905–1997)]

**cover memory** see SCREEN MEMORY.

**cover story** a plausible but false statement about the purpose of a research study given to research participants to avoid disclosing to them the true hypothesis being investigated. Such deception may be practiced when the participants' behavior in the study is apt to be affected by knowledge of the experiment's true purpose. For ethical reasons, the deception should not flagrantly violate the participants' right to know what they will be getting into by taking part in the investigation; that is, the deception should not lead participants into harmful, embarrassing, risky, or otherwise compromising behavior. Participants should be debriefed about the cover story as soon as is feasible. See DECEPTION RESEARCH.

**covert** *adj.* denoting anything that is hidden or that is not directly observable, open to view, or publicly known, whether by happenstance or by deliberate design. Compare OVERT.

**covert attention** attention directed to a location that is different from that on which the eyes are fixated. See COVERT ORIENTING.

**covert behavior** behavior that is not directly observable and can only be inferred by the observer or reported by the subject. For example, imagining something is covert behavior. See also PRIVATE EVENT.

**covert conditioning** a technique of BEHAVIOR THERAPY that relies on the use of imagination and assumes that overt and covert behaviors are associated, that each affects the other, and that both forms of behavior depend on the laws of learning. The individual imagines performing a desired behavior in a problematic real-life situation, rewards himself or herself for mentally engaging in the behavior, and finally achieves an actual change in behavior. Also called **covert behavioral reinforcement**. [developed in 1966 by U.S. psychologist Joseph R. Cautela (1927–1999)]

**covert desensitization** a form of DESENSITIZATION therapy in which an individual is helped to overcome a fear or anxiety by learning to relax while imagining an anxiety-producing stimulus. A hierarchy is devised with a sequence of items that range from the least to the most anxiety-producing aspects of the stimulus. The individual then uses relaxation techniques while progressively imagining items on the hierarchy until able to imagine the stimulus without feeling anxious. Compare IN VIVO DESENSITIZATION. See also SYSTEMATIC DESENSITIZATION.

**covert extinction** a COVERT CONDITIONING procedure in which the client first imagines performing an unwanted behavior and then imagines failing to be rewarded or to receive REINFORCEMENT for the behavior. See also COVERT POSITIVE REINFORCEMENT.

**covert incest** 1. a form of EMOTIONAL ABUSE in which a parent turns to his or her child as a surrogate partner, seeking from the child the emotional support that would more appropriately be provided by the person's spouse or another adult. 2. see EMOTIONAL INCEST. [concept developed by U.S. psychologist Kenneth M. Adams]

**covert modeling** a COVERT CONDITIONING procedure in which the client pictures a role model, imagines behaving as this person might, and then visualizes specific favorable consequences of the behavior. See also COVERT POSITIVE REINFORCEMENT.

**covert negative reinforcement** in BEHAVIOR THERAPY, a technique in which the client first imagines an aversive event and then switches to imagining engaging in a behavior that reverses the aversiveness of the event. For example, a client might imagine that he or she is alone at a restaurant, feeling insecure and unhappy, and then switches the imaginary scene to one in which he or she is asking another person for a date and that person says yes. Compare COVERT POSITIVE REINFORCEMENT.

**covert orienting** the shifting of attentional focus independently of the direction of gaze. Covert orienting can be shown by improved detection or identification of target stimuli at a cued location in the absence of eye movements. See COVERT ATTENTION.

**covert positive reinforcement** in BEHAVIOR THER-

APY, a technique in which a person imagines performing a desired behavior that is followed by a pleasant consequence and subsequently rehearsing the behavior in the hope that it will eventually be adopted. Also called **covert reinforcement**. Compare COVERT NEGATIVE REINFORCEMENT.

**covert rehearsal** a technique in which rote repetition in one's mind of words or behaviors is used to improve memory or to prepare for overt speech or behavior. See also BEHAVIOR REHEARSAL.

**covert reinforcement** see COVERT POSITIVE REINFORCEMENT.

**covert response** any generally unobservable response, such as a thought, image, emotion, or internal physiological reaction, the existence of which is typically inferred or measured indirectly. For example, covert preparation for physical responses can be observed in an electric brain potential called the LATERALIZED READINESS POTENTIAL and in electromyographic measures of muscle activity. Also called **implicit response**. Compare OVERT RESPONSE.

**covert sensitization** a BEHAVIOR THERAPY technique for reducing an undesired behavior in which the client imagines performing the undesired behavior (e.g., overeating) and then imagines an unpleasant consequence (e.g., vomiting).

**covert speech** talking to oneself. Covert speech is usually seen as the externalization of a person's inner voice: Some explanations have equated it with thought itself. See also SUBVOCAL SPEECH.

**COWAT** abbreviation for CONTROLLED ORAL WORD ASSOCIATION TEST.

**Cowper's glands** see BULBOURETHRAL GLANDS. [William Cowper (1660–1709), English surgeon]

**Cox regression analysis** a statistical technique used to build multivariate models that relate one or more continuous or categorical variables to survival times, without requiring researchers to specify in advance the form or nature of such relationships. For example, one might use Cox regression to determine how likely it is that alcoholics who are abstinent at 3 months and at 6 months will relapse. A key methodological concept in Cox regression analysis is the hazard, that is, the immediate potential or "risk," of event occurrence. There are two types of Cox regression: the simpler **standard Cox regression model** (or **proportional hazards model**) and a more complex generalization known as the **extended Cox regression model**. The standard model is used when the risk of event occurrence for the reference and comparison groups remains constant relative to one another over all time points, whereas the extended model is used when the effect of particular variables upon the occurrence of the event of interest changes over time. [David R. Cox (1924– ), British statistician]

**CP** abbreviation for CEREBRAL PALSY.

**CPA** abbreviation for CANADIAN PSYCHOLOGICAL ASSOCIATION.

**CPI** abbreviation for CALIFORNIA PSYCHOLOGICAL INVENTORY.

**CPP** abbreviation for CONDITIONED PLACE PREFERENCE.

**CPQ** abbreviation for CHILDREN'S PERSONALITY QUESTIONNAIRE.

**CPR fees** abbreviation for CUSTOMARY, PREVAILING, AND REASONABLE FEES.

**CPRT** abbreviation for CHILD–PARENT RELATIONSHIP THERAPY.

**CPS** abbreviation for COMREY PERSONALITY SCALES.

**CPT 1.** abbreviation for COGNITIVE PROCESSING THERAPY.  
**2.** abbreviation for CONTINUOUS PERFORMANCE TEST.

**CPZ** abbreviation for CHLORPROMAZINE.

**CQT** abbreviation for CONTROL QUESTION TEST.

**CR** abbreviation for CONDITIONED RESPONSE.

**CR10 scale** see BORG SCALE.

**crack** *n.* a dried mixture of COCAINE and baking soda that can be smoked. It produces a rapid, short-lived high. It is less pure than FREEBASE cocaine and therefore less expensive and more accessible.

**crack baby** slang for an infant whose mother used CRACK cocaine during pregnancy. In utero exposure to cocaine has been associated with negative effects on learning and functioning, although such effects are now believed to be less drastic than feared during the height of the crack epidemic in the 1980s.

**cracking facades** the process of encouraging people to reveal their true selves. It is associated with Carl ROGERS's encounter-group work.

**Cramér's *V*** (symbol:  $V$ ;  $\phi_c$ ) a measure of the degree of association between two variables that have two or more unordered response categories. More specifically, it is an omnibus EFFECT SIZE that quantifies the overall association among the rows and columns in a CONTINGENCY TABLE. Also called **Cramér's phi**. [Harald Cramér (1893–1985), Swedish mathematician]

**cramp** *n.* a painful muscle spasm (contraction). See also DYSTONIA.

**cranial** *adj.* referring or relating to the CRANIUM.

**cranial anomaly** an abnormal head due to a congenital defect. The head may be abnormally large (as in HYDROCEPHALUS), abnormally small (as in MICROCEPHALY), or square shaped (as in some cases of osteopetrosis), or it may have sutures that fail to close. The defect is often related to a chromosome abnormality. Chromosomes 17 and 18 are often involved through trisomy or other aberrations.

**cranial bifida** a NEURAL TUBE defect closely related to SPINA BIFIDA, resulting from a failure of the two sides of the head to fuse normally during prenatal development and resulting in either ANENCEPHALY or ENCEPHALOCELE. Also called **cranium bifidum**.

**cranial capacity** the volume of the skull.

**cranial diameter** the maximal width of the skull.

**cranial division** the part of the PARASYMPATHETIC NERVOUS SYSTEM whose fibers extend from CRANIAL NERVES. Compare SACRAL DIVISION.

**cranial electrical stimulation** see ELECTROSLEEP THERAPY.

**cranial index** see CEPHALIC INDEX.

**cranial nerve** any of the 12 pairs of nerves that arise directly from the brain and are distributed mainly to structures in the head and neck. Some of the cranial nerves are sensory, some are motor, and some are mixed (i.e., both sensory and motor). Cranial nerves are designated by Roman numerals, as follows: I, OLFACTORY NERVE; II, OPTIC

NERVE; III, OCULOMOTOR NERVE; IV, TROCHLEAR NERVE; V, TRIGEMINAL NERVE; VI, ABDUCENS NERVE; VII, FACIAL NERVE; VIII, VESTIBULOCOCHLEAR NERVE; IX, GLOSSOPHARYNGEAL NERVE; X, VAGUS NERVE; XI, ACCESSORY NERVE; and XII, HYPOGLOSSAL NERVE.

**cranial pia mater** see PIA MATER.

**cranial reflex** a reflex mediated by one of the CRANIAL NERVES, such as the blink reflex in response to a bright light or to a touch to the cornea.

**craniofacial anomaly** a structural deformity, usually congenital, that involves the face and cranium. Disorders characterized by such anomalies include TREACHER COLLINS SYNDROME, CROUZON'S SYNDROME, and Hurler's syndrome (see GARGOYLISM).

**craniofacial dysostosis** see CROUZON SYNDROME.

**craniography** *n.* the study of the skull using photographs and drawings made from measurements of the configuration of the skull and the relations of its angles and craniometric points. The technique is not widely used now.

**craniology** *n.* **1.** the scientific study of the size, shape, and other characteristics of the human skull. **2.** see PHRENOLOGY.

**craniometry** *n.* the scientific measurement of the skull. —**craniometric** *adj.*

**cranosacral system** a less common name for the PARASYMPATHETIC NERVOUS SYSTEM.

**craniostenosis** *n.* a skull deformity caused by premature closing of the cranial sutures. The condition restricts normal development of brain structures and usually results in intellectual disability.

**cranosynostosis syndrome** a condition caused by premature fusion of cranial bones, resulting in a skull deformity. The sagittal suture along the top of the skull is most often involved. Premature closing of one suture is unlikely to affect brain growth or intelligence, but premature fusion of multiple sutures increases the risk of neurological disorders.

**craniotelencephalic dysplasia** premature closure of some of the cranial sutures (see CRANIOSYNOSTOSIS SYNDROME) accompanied by protrusion of the frontal skull bone and intellectual disability, with or without encephalocele (brain herniation through the skull).

**craniotomy** *n.* the surgical opening of the skull, a procedure that may be performed, for example, to administer surgical treatment or to release pressure when the brain is expanding due to HYDROCEPHALUS or CEREBRAL EDEMA. Craniotomy is one of the oldest types of surgery: Evidence of it has been found in prehistoric skulls in nearly every part of the world. See also TREPHINATION.

**cranium** *n.* **1.** the skull. **2.** the portion of the skull that encloses the brain.

**crank** *n.* a street name for smokable METHAMPHETAMINE.

**crash** *n.* **1.** the withdrawal symptoms, usually dominated by feelings of severe depression, that occur following a lengthy period of amphetamine intoxication. The user may sleep for several days more or less continuously, displaying signs of exhaustion and irritation during waking periods. See AMPHETAMINE WITHDRAWAL. **2.** the period following the "rush" or "high" produced by intravenous cocaine administration. As feelings of euphoria wear off, they are re-

placed by irritability, depression, and anxiety, as well as strong craving for another dose. See COCAINE WITHDRAWAL.

**craving** *n.* an unrelenting desire, urge, or yearning. It is often a criterion for the diagnosis of drug addiction or alcoholism.

**craze** *n.* see FAD.

**CRB** abbreviation for clinically relevant behavior. See FUNCTIONAL ANALYTIC PSYCHOTHERAPY.

**creatine kinase (CK)** an enzyme present in heart muscle, skeletal muscle, and brain tissues. High levels in the blood may be a sign of disease or tissue damage, such as muscular dystrophy or myocardial infarction. The enzyme consists of two subunits, of which there are two possible alternatives, M and B. The combination of subunits is characteristic of certain tissues and can be identified via electrophoresis techniques as myocardial (MB), skeletal muscle (MM), and brain (BB). The MB form is usually specific for myocardial infarction.

**creationism** *n.* **1.** in its most general sense, the view that the universe was created out of nothing by a higher intelligence, in contrast to the view that it came into being without any such intervention, or that it has existed forever. Although most varieties of this view are religious, all need not be. **2.** in a more restricted sense, a family of views that reject evolutionary theories in favor of a literal acceptance of the biblical creation story, holding (among other things) that the world was created by God in 6 days (or fairly short time periods) and that each species of animal (including humans) was created by a separate act of God. See also INTELLIGENT DESIGN. —**creationist** *adj.*, *n.*

**creative arts therapy** therapeutic interventions that use artistic endeavors or mediums, such as music, poetry, dance, and drama, to facilitate communication and emotional expression, enhance self-awareness, and foster health and change. See also ART THERAPY; DANCE THERAPY; DRAMA THERAPY; MUSIC THERAPY; POETRY THERAPY.

**creative dramatics** the use, especially with children, of spontaneous drama-oriented play (“pretending”) as a therapeutic technique designed to enhance creativity and imagination, improve communication and social skills, and foster health. The emphasis in creative dramatics is not on the end product (e.g., performance) but rather on the creative process itself.

**creative genius** see EXCEPTIONAL CREATIVITY.

**creative imagination** the faculty by which new, uncommon ideas emerge, especially when emergence does not seem explicable by the mere combination of existing ideas. The operations of the creative imagination are sometimes explained by the interaction of dormant or nonconscious elements with active, conscious thoughts. See also CREATIVE THINKING; CREATIVITY; DIVERGENT THINKING; IMAGINATION.

**creative intelligence** in the TRIARCHIC THEORY OF INTELLIGENCE, the set of skills used to create, invent, discover, explore, imagine, and suppose. This set of skills is alleged to be relatively (although not wholly) distinctive with respect to analytical and practical skills. Compare ANALYTICAL INTELLIGENCE; PRACTICAL INTELLIGENCE.

**creative synthesis** the combination of several ideas, images, or associations into a new whole that differs fundamentally from any of its components. See also MENTAL SYNTHESIS. [coined by Wilhelm WUNDT]

**creative thinking** the mental processes leading to a new invention, solution, or synthesis in any area. A creative solution may use preexisting elements (e.g., objects, ideas) but creates a new relationship between them. Products of creative thinking include, for example, new machines, social ideas, scientific theories, and artistic works. Compare CRITICAL THINKING. See also DIVERGENT THINKING.

**creativity** *n.* the ability to produce or develop original work, theories, techniques, or thoughts. A creative individual typically displays originality, imagination, and expressiveness. Analyses have failed to ascertain why one individual is more creative than another, but creativity does appear to be a very durable trait. See also CREATIVE IMAGINATION; CREATIVE THINKING; DIVERGENT THINKING. —**creative** *adj.*

**creativity measurement** any psychological testing that is designed to identify CREATIVITY or DIVERGENT THINKING. Existing tests focus on a variety of factors, such as an individual’s fluency with words and ideas or ability to generate original associations; tasks may involve finding solutions to practical problems, suggesting different endings to stories, or listing unusual uses for objects (see ALTERNATE-USES TEST). See also ARP TESTS; TORRANCE TESTS OF CREATIVE THINKING.

**credentialing** *n.* the administrative process of reviewing a health care provider’s qualifications, practice history, and medical CERTIFICATION or license to determine if criteria for clinical privileges are met. See also PROFESSIONAL LICENSING.

**credible interval** in BAYESIAN methods, a range within which a particular value of a population characteristic has a specified probability of falling. It is the Bayesian equivalent of the CONFIDENCE INTERVAL used in FREQUENTIST approaches. Also called **credible region**.

**cremasteric reflex** the contraction of the **cremaster muscle**, which causes retraction of the TESTES toward the abdomen, caused by cold temperature or by stroking the skin on the inside of the thigh.

**creole** *n.* a language that has evolved from profound and prolonged contact between two or more languages and both shares features of the present languages and evolves altogether novel features. Although typically developing from a PIDGIN, a creole becomes stable over time and will usually have a fully developed grammatical system. See also DECREOLIZATION.

**crepitation** *n.* **1.** a soft, crackling sound heard on AUSCULTATION of the chest, which indicates disease of the lungs or airways. **2.** the sound of bones or damaged cartilage surfaces rubbing against each other, as occurs in arthritis and other degenerative skeletal conditions.

**crepuscular animals** animals that are most active in a dimly lighted environment, for example, at dawn or dusk.

**Crespi effect** in conditioning, an increase (or decrease) in a response that is disproportionate to the reinforcement. This occurs when there is a sudden shift in the amount of reinforcement; for example, if the amount of food given as reinforcement is suddenly increased from 1 g to 6 g, the level of performance is higher than if 6 g of food had been the only reinforcement given. Compare BEHAVIORAL CONTRAST. [Leo P. **Crespi** (1916–2008), U.S. psychologist]

**cretinism** *n.* a condition associated with thyroid deficiency that, if untreated, results in delayed physical growth

and intellectual disability. The term is derived from the French word *chrétien* (Christian) because many early victims were children of an Alpine Christian sect whose diet was deficient in iodine, a necessary element for the synthesis of thyroid hormone. See **ATHYREOSIS; CONGENITAL HYPOTHYROIDISM**. [first described in 1657 by Austrian physician Wolfgang Hoefler]

**Creutzfeldt–Jakob disease (CJD)** a rapidly progressive neurological disease caused by abnormal PRION proteins and characterized by DEMENTIA, involuntary muscle movements (especially MYOCLONUS), ATAXIA, visual disturbances, and seizures. Vacuoles form in the gray matter of the brain and spinal cord, giving it a spongy appearance; the prion is thought to cause misfolding of other proteins, leading to cellular pathology. **Classical CJD** occurs sporadically worldwide and typically affects individuals who are middle-aged or older. A small proportion (about 10%) of cases are inherited. Early symptoms are muscular incoordination (ataxia), with abnormalities of gait and speech, followed by worsening dementia and myoclonus. Death occurs usually within 1 year of the onset of symptoms. **Variant CJD (vCJD)** was first reported in Great Britain in the 1990s. It causes similar symptoms but typically affects younger people, who are believed to have acquired the disease by eating meat or meat products from cattle infected with bovine spongiform encephalopathy (BSE). Also called **Jakob–Creutzfeldt disease; subacute spongiform encephalopathy (SSE)**. See also PRION DISEASE. [Hans Gerhard **Creutzfeldt** (1885–1964) and Alfons **Jakob** (1884–1931), German neuropathologists]

**CRF 1.** abbreviation for CONTINUOUS REINFORCEMENT. **2.** abbreviation for CORTICOTROPIN-RELEASING FACTOR.

**CRH** abbreviation for corticotropin-releasing hormone. See CORTICOTROPIN-RELEASING FACTOR.

**crib death** see SUDDEN INFANT DEATH SYNDROME.

**cribriform plate** a sievelike layer in the skull that supports the OLEFACTORY BULB and permits olfactory receptor fibers to extend through its holes to the OLEFACTORY EPITHELIUM.

**cri du chat syndrome** a chromosomal disorder involving deletion of the short arm of chromosome 5 and characterized by intellectual disability and developmental delays, walking and talking difficulty or inability, and an anomaly of the epiglottis and larynx that causes in infants a high-pitched wailing cry like that of a cat. Almost all affected individuals have very small heads (see MICROCEPHALY). The disorder is hereditary in only 10% of cases and more often results from a random event during early fetal development. Also called **cat-cry syndrome; chromosome 5, deletion of short arm; crying-cat syndrome; Lejeune syndrome; monosomy 5p**.

**crime control model** a view of legal process that places a premium on upholding law and order, the protection and safety of the public, and the apprehension and efficient processing of criminals. Compare DUE PROCESS MODEL.

**criminal anthropology** an early positivist approach to criminology (see POSITIVIST CRIMINOLOGY) associated with the theories of Italian criminologist and psychiatrist Cesare Lombroso (1835–1909). It embraced the notion of the “born criminal” or criminal type, based on the belief that criminals had certain physical characteristics (e.g., sloping forehead, large ears) that distinguished them from non-criminals. Lombroso identified these characteristics as “at-

avistic anomalies . . . that bring man closer to the inferior animals,” then developed a hypothesis that linked delinquency to constitutional anomalies and attributed the primal cause of crime to hereditary flaws.

**criminal commitment** the confinement of people in mental institutions either because they have been found NOT GUILTY BY REASON OF INSANITY or to establish their COMPETENCY TO STAND TRIAL as responsible defendants.

**criminal conviction** a court declaration finding a person guilty and responsible for a criminal offense.

**criminal intent** see MENS REA.

**criminally insane** describing defendants who are judged to have a mental illness or defect that absolves them of legal responsibility for the criminal acts they are alleged to have committed. The term is now seldom used.

**criminal profiling** techniques used to narrow a criminal investigation to suspects with certain personality and behavioral traits that might be inferred from the way a crime was committed, where it occurred, and other information such as the background of the victim or victims (i.e., **victimology**). Psychologists have played a central role in studying and developing these techniques. Although some research validates profiling as a tool that helps police concentrate their investigations, there is also controversy regarding such issues as hasty identifications that ignore or foreclose other leads, methodological flaws, and the like.

**criminal psychopath** a person with ANTISOCIAL PERSONALITY DISORDER who repeatedly violates the law.

**criminal responsibility** a defendant’s ability to formulate criminal intent (see MENS REA) at the time of the crime with which he or she is charged; it must be proved in court before the person can be convicted. Criminal responsibility may be excluded for reason of INSANITY (see DURHAM RULE; IRRESISTIBLE IMPULSE RULE; M’NAGHTEN RULE) or mitigated for a number of other reasons (see DIMINISHED CAPACITY; DIMINISHED RESPONSIBILITY).

**criminal type** a classification of individuals who repeatedly engage in criminal or illegal acts, supposedly because of a genetic predisposition to do so.

**criminology** *n.* the scientific study of crime and criminal behavior, which includes its causes, prevention, and punishment. See also POSITIVIST CRIMINOLOGY. —**criminologist** *n.*

**crisis** *n.* (*pl.* **crises**) **1.** a situation (e.g., a traumatic change) that produces significant cognitive or emotional stress in those involved in it. **2.** a turning point for better or worse in the course of an illness. **3.** a state of affairs marked by instability and the possibility of impending change for the worse, for example, in a political or social situation. **4.** in the analysis of SCIENTIFIC REVOLUTIONS by U.S. philosopher of science Thomas Kuhn (1922–1996), the situation that occurs when a particular theoretical system is overcome by so many anomalies that it is perceived to be failing and a search for a better theoretical system is under way.

**crisis center** a facility established for emergency therapy or referral, sometimes staffed by medical and mental health professionals and paraprofessionals. See DROP-IN CENTER.

**crisis counseling** immediate drop-in, phone-in, or on-site professional counseling provided following a trauma or sudden stressful event, often for emergency situations or in

the aftermath of a disaster. See DISASTER COUNSELING; HOT-LINE.

**crisis intervention 1.** the brief ameliorative, rather than specifically curative, use of psychotherapy or counseling to aid individuals, families, and groups who have undergone a highly disruptive experience, such as an unexpected bereavement or a disaster. Crisis intervention may prevent more serious consequences of the experience, such as posttraumatic stress disorder. See also EMERGENCY INTERVENTION. **2.** psychological intervention provided on a short-term, emergency basis for individuals experiencing mental health crises, such as an ACUTE PSYCHOTIC EPISODE or ATTEMPTED SUICIDE.

**crisis intervention service** any of the services provided (usually by governmental or social agencies) during emergencies, disasters, and personal crises. Such services include hotlines, drop-in services, and on-site intervention at the scene of a disaster.

**crisis management** the organization and mobilization of resources to overcome the difficulties presented by a sudden and unexpected threat, such as widespread food contamination or a financial catastrophe. The psychological stress produced by a crisis can reduce the information-processing capacities of those affected, which should be taken into account by crisis managers when considering possible solutions.

**crisis team** a group of professionals and paraprofessionals trained to help individuals cope with psychological reactions during and following emergencies or mental health crises, such as natural disasters or suicide threats or attempts.

**crisis theory** the body of concepts that deals with the nature, precipitants, prevention, and resolution of, as well as the behavior associated with, a crisis.

**crista (crysta)** *n.* the structure within the ampulla at the end of each SEMICIRCULAR CANAL that contains hair cells sensitive to the direction and rate of movements of the head.

**criteria of evaluation** the criteria used to specify or measure PROGRAM IMPACT or, often, PROGRAM OUTCOME as stated in the EVALUATION OBJECTIVES of a study.

**criteria of the psychic** a proposed set of signs or indicators that would allow one to be confident in concluding that an organism possesses consciousness, or that a behavior arises from consciousness as opposed to purely physiological sources. The idea that such criteria could be formulated was proposed by Robert M. YERKES. Yerkes's structural criteria were general morphology, neural organization, and neural specialization; his proposed functional criteria were discrimination, modifiability of reaction, and variability of reaction.

**criterion** *n.* (*pl.* **criteria**) a standard against which a judgment, evaluation, or comparison can be made. For example, a well-validated test of creativity might be used as the criterion to develop new tests of creativity.

**criterion-based content analysis (CBCA)** a form of STATEMENT VALIDITY ANALYSIS in which children's statements in instances of alleged abuse are analyzed in terms of key content criteria to evaluate their truth.

**criterion contamination** a situation in which a response measure (the criterion) is influenced by factors that are not related to the concept being measured. Evidence of

this may be observed through correlations of the response measure with variables that are conceptually distinct from that measure. For example, performance discrepancies (in dollars sold) among insurance agents may arise not from any actual differences in ability but rather from socioeconomic differences in territories assigned to the salespeople.

**criterion cutoff** see CUTOFF SCORE.

**criterion data** information obtained from supervisors or other sources, such as absence records, that may be used in measuring the performance of employees in a job. See JOB CRITERION; JOB PERFORMANCE.

**criterion dimensions** in industrial and organizational psychology, multiple standards or variables used to evaluate the overall JOB PERFORMANCE of an employee. These may include such aspects of performance as productivity, effectiveness, absences, errors, and accidents. Multiple criteria are often preferred over the use of a single criterion because an individual may be outstanding in one aspect of job performance but below average in another.

**criterion group** a group tested for traits its members are already known to possess, usually for the purpose of demonstrating that responses to a test represent the traits they were intended to represent. For example, a group of children with diagnosed visual disabilities may be given a visual test to assess its validity as a means of evaluating the presence of visual disabilities.

**criterion problem** see PARTICULARISM.

**criterion-referenced test** an exam from which decisions are made about an individual's absolute level of accomplishment (i.e., mastery or nonmastery) of the material covered in that exam according to some standard reference point. For example, if a student obtains a score of 70% on a reading exam and a passing score is 65%, then he or she has done acceptably well. Also called **content-referenced test**. See also DOMAIN-REFERENCED TEST; NORM-REFERENCED TEST.

**criterion score 1.** a score on a variable that serves as a standard against which other scores may be judged in a CRITERION-REFERENCED TEST. **2.** in REGRESSION ANALYSIS, a predicted score on an attribute or variable.

**criterion validity** an index of how well a test correlates with an established standard of comparison (i.e., a CRITERION). Criterion validity is divided into three types: PREDICTIVE VALIDITY, CONCURRENT VALIDITY, and RETROSPECTIVE VALIDITY. For example, if a measure of criminal behavior is valid, then it should be possible to use it to predict whether an individual (a) will be arrested in the future for a criminal violation, (b) is currently breaking the law, and (c) has a previous criminal record. Also called **criterion-referenced validity**; **criterion-related validity**.

**criterion variable** see DEPENDENT VARIABLE.

**critical** *adj.* **1.** essential or necessary as an attribute or as a part of some process. A CRITICAL PERIOD, for example, is an essential stage in the developmental process. **2.** emphasizing real or imagined faults. **3.** characterized by or denoting thorough, impartial evaluation or review.

**critical band** the band of frequencies in a masking noise that are effective in masking a tone of a given frequency (see AUDITORY MASKING). The width of this band, in hertz (Hz), is the **critical bandwidth**. For example, in detecting a 1 kHz tone in white NOISE, only frequency components in the noise between 920 Hz and 1080 Hz contribute signifi-

cantly to the masking: The critical band is from 920 Hz to 1080 Hz, and the critical bandwidth is 160 Hz. In psychoacoustics there are many manifestations of critical-band “filtering,” including spectral effects in LOUDNESS SUMMATION and monaural phase effects. See also AUDITORY FILTER; FREQUENCY SELECTIVITY. [first described in 1940 by U.S. physicist Harvey Fletcher (1884–1981)]

**critical care unit (CCU)** see INTENSIVE CARE UNIT.

**critical flicker frequency (CFF)** the rate at which a periodic change, or flicker, in an intense visual stimulus fuses into a smooth, continuous stimulus. A similar phenomenon can occur with rapidly changing auditory stimuli. Also called **flicker fusion frequency**.

**critical-incident stress debriefing (CISD)** a structured and programmed process of PSYCHOLOGICAL DEBRIEFING designed predominantly as a group-based intervention to help individuals who witness or work at the scene of a critical incident or disaster (e.g., firefighters). The process relies heavily on reconstruction of the traumatic event, VENTILATION, and normalization of distress. There is contradictory published data on the outcomes of CISD, with some studies showing no measureable effect or a paradoxical effect, whereby those who are debriefed are more likely to develop posttraumatic stress disorder than are nondebriefed individuals. [developed by U.S. psychologist Jeffrey T. Mitchell (1948– )]

**critical-incident technique (CIT)** a method designed to investigate factors associated with unusually good or unusually poor job performance. Observers record unusual outcomes and specific incidents, behaviors, or system features that may have triggered these outcomes. Data collected in this way are then classified and analyzed to identify key themes. The critical-incident technique is widely used in such areas as ACCIDENT PREVENTION and the creation of BEHAVIORALLY ANCHORED RATING SCALES for use in employee evaluation. See also BEHAVIORAL OBSERVATION SCALE; MIXED-STANDARD SCALE.

**critical life event** an event in life that requires major adjustment and adaptive behavior. Such events may be regarded in retrospect as unusually formative or pivotal in shaping attitudes and beliefs. Common critical life events include the death of a loved one, divorce, and unemployment. See also LIFE EVENTS.

**critical period 1.** an early stage in life when an organism is especially open to specific learning, emotional, or socializing experiences that occur as part of normal development and will not recur at a later stage. For example, the first 3 days of life are thought to constitute a critical period for IMPRINTING in ducks, and there may be a critical period for language acquisition in human infants. See also SENSITIVE PERIOD. **2.** in vision, the period of time after birth, varying from weeks (in cats) to months (in humans), in which full, binocular visual stimulation is necessary for the structural and functional maturation of the VISUAL SYSTEM. See also MONOCULAR REARING.

**critical point** a point in the course of psychotherapy at which the client sees his or her problem clearly and decides on an appropriate course of action to handle or resolve it.

**critical range** the range within which a particular biological measure must remain to ensure good health. See also SET ZONE.

**critical region** a range of values that may be obtained from a statistical procedure that would lead to rejecting a

specific claim about a population. More specifically, it is the portion of a PROBABILITY DISTRIBUTION containing the values for a test statistic that would result in rejection of a NULL HYPOTHESIS in favor of its corresponding ALTERNATIVE HYPOTHESIS. Also called **rejection region**. Compare ACCEPTANCE REGION.

**critical thinking** a form of directed, problem-focused thinking in which the individual tests ideas or possible solutions for errors or drawbacks. It is essential to such activities as examining the validity of a hypothesis or interpreting the meaning of research results. Compare CREATIVE THINKING. See CONVERGENT THINKING.

**critical value** a value used to make decisions about whether a test result is statistically meaningful. For example, to evaluate the result of a T TEST to determine whether a sample mean is significantly different from the hypothesized population mean, a researcher would compare the obtained test statistic to the values from a T DISTRIBUTION at a given PROBABILITY LEVEL. If the statistic exceeds the critical value within that distribution, the NULL HYPOTHESIS is rejected and the result is considered significant. Also called **rejection value**. See also CRITICAL REGION.

**CRM** abbreviation for CUSTOMER RELATIONSHIP MANAGEMENT.

**Crocker–Henderson odor system** a theory that posits four PRIMARY ODOR qualities: acid, burnt, caprylic, and fragrant. The presence of each primary in an odor is assessed via a 9-point scale (0–8) indicating the relative intensity of each quality. See also HENNING’S ODOR PRISM. [Ernest C. Crocker (1888–1964) and Lloyd F. Henderson, U.S. chemists]

**Cro-Magnon** *n.* an early form of modern human (*Homo sapiens*) inhabiting Europe in the late Paleolithic period, so named because the first skeletal remains were found in the Cro-Magnon cave in southern France.

**Cronbach’s alpha** a measure of the average strength of association between all possible pairs of items contained within a set of items. It is a commonly used index of the INTERNAL CONSISTENCY of a test and ranges in value from 0, indicating no internal consistency, to 1, indicating perfect internal consistency. Also called **alpha coefficient**; **coefficient alpha**. [Lee J. CRONBACH]

**cross-activation theory** see SYNESTHESIA.

**cross-adaptation** *n.* the change in sensitivity to one stimulus caused by adaptation to another. See CROSS-NASAL ADAPTATION.

**cross-addiction** *n.* see CROSS-DEPENDENCE.

**crossbreeding** *n.* see OUTBREEDING.

**cross-classification** *n.* the placing of observations or individuals into classes based on the features of two or more variables. More specifically, it is a system of classification used in experimentation in which each person or other sampling unit is assigned to the intersection of a row category and a column category. This is usually carried out by means of a CONTINGENCY TABLE.

**cross-classification table** see CONTINGENCY TABLE.

**cross-conditioning** *n.* conditioning to a NEUTRAL STIMULUS when this stimulus by coincidence occurs simultaneously with an UNCONDITIONED STIMULUS.

**cross-correlation** *n.* a measure of the degree of associ-



ation between corresponding values from a series of values for two or more variables.

**cross-correlation mechanism** the auditory mechanism thought to underlie sound localization based on interaural time differences (see BINAURAL CUE).

**cross-correspondence** *n.* in SPIRITUALISM and parapsychology, the situation in which two or more MEDIUMS, who claim to be in touch with the same spirit source but not with each other, produce similar or complementary messages. To the believer, cross-correspondence provides firm evidence for the objective reality of spirit messages (or, at the very least, for some form of telepathy between the mediums). A more mundane explanation might stress (a) the mediums' access to the same biographical facts about the dead person and the same information regarding his or her interests, tastes, and opinions and (b) the mediums' knowledge of the same spiritualist texts concerning the nature of the afterlife and the spirit world.

**cross-cuing** *n.* the use of one sense modality to identify an object when another, more direct sense modality is not available. For example, COMMISSUROTOMY (the split-brain technique) has revealed that auditory information may be used to name a visual object when visual information is not available to the cerebral hemisphere mainly responsible for speech.

**cross-cultural approach** a research method in which specific social practices, such as courtship behavior, child-rearing practices, or therapeutic attitudes and techniques, are studied and compared across a number of different cultures. Also called **cross-cultural method**.

**cross-cultural psychology** a branch of psychology that studies similarities and variances in human behavior across different cultures and identifies the different psychological constructs and explanatory models used by these cultures. It has been influenced by anthropology and emphasizes social psychological analyses of international differences. See also ETHNIC PSYCHOLOGY; MULTICULTURAL PSYCHOLOGY.

**cross-cultural research** the systematic study of human psychological processes and behavior across multiple cultures, involving the observation of similarities and differences in values, practices, and so forth between different societies. Cross-cultural research offers many potential advantages, informing theories that accommodate both individual and social sources of variation, but also involves numerous risks, notable among them the production of cultural knowledge that is incorrect because of flawed methodology. Indeed, there are a host of methodological concerns that go beyond monocultural studies, including issues concerning translation, measurement, equivalence, sampling, data analytic techniques, and data reporting. Also called **cross-cultural method**; **cross-cultural study**.

**cross-cultural testing** the assessment of individuals from different cultural backgrounds. The use of instruments that are free of bias is essential to valid cross-cultural testing, as it provides for the measurement equivalency necessary to ensure that outcomes have the same meaning across diverse populations of interest. For example, scores on a coping questionnaire that possesses bias may be a legitimate measure of coping if they are compared within a single cultural group, whereas cross-cultural differences identified on the basis of this questionnaire may be influenced by other factors, such as

translation issues, item inappropriateness, or differential response styles. See also CULTURE-FAIR TEST.

**cross-cultural treatment** treatment in situations in which therapist and client differ in terms of race, ethnicity, language, or lifestyle. Mental health providers should be attentive to cultural differences with clients for the following (among other) reasons: (a) Social and cultural beliefs influence diagnosis and treatment; (b) diagnosis differs across cultures; (c) symptoms are expressed differently across cultures; (d) formal diagnostic categories reflect majority cultural values; and (e) most providers are from the majority culture.

**cross-dependence** *n.* **1.** the ability of one substance to prevent withdrawal symptoms from a different substance of the same class or with a similar effect. This is the pharmacological mechanism behind SUBSTITUTION PHARMACOTHERAPY: Cross-dependence allows the substitution of a less dangerous drug as treatment for SUBSTANCE DEPENDENCE, as in the substitution of methadone for heroin. **2.** the condition of becoming rapidly dependent on a substance that is related to one for which there is already dependence. **3.** the condition of being simultaneously dependent on more than one substance. Also called **cross-addiction**. Compare CROSS-TOLERANCE.

**cross-dimension attitude consistency** the extent to which the dimensions (i.e., distinct categories of information) underlying ATTITUDE-RELEVANT KNOWLEDGE are evaluatively consistent with one another. For example, if the information related to one dimension is extremely positive and the information related to a second dimension is extremely negative, cross-dimension attitude consistency is low. Also called **between-dimension consistency**. See also AMBIVALENCE OF AN ATTITUDE; COMPLEXITY OF AN ATTITUDE; WITHIN-DIMENSION ATTITUDE CONSISTENCY.

**cross-dressing** *n.* the process or habit of putting on the clothes of the opposite sex. It is done for a variety of reasons, for example, as part of a performance, as social commentary, or for sexual pleasure. See TRANSVESTIC FETISHISM; TRANSVESTISM.

**crossed aphasia** APHASIA resulting from damage to the right hemisphere of the brain rather than the left hemisphere, which is more common.

**crossed disparity** see UNCROSSED DISPARITY.

**crossed dominance** the tendency for some right-handed people to have a stronger or dominant left eye, and vice versa for the left-handed.

**crossed-extension reflex** a reflexive action by a contralateral limb to compensate for loss of support when the ipsilateral limb withdraws from a painful stimulus. The reflex, which helps shift the burden of body weight, is also associated with the coordination of legs in walking by flexing muscles on the left side when those on the right are extending, and vice versa.

**crossed-factor design** a study that involves two or more conditions or treatments in which each level of one condition or treatment is combined with each level of every other condition or treatment. For instance, a pharmaceutical treatment (Drug A vs. Drug B) may be combined with a biofeedback treatment (biofeedback vs. no biofeedback) so that each drug is combined with each type of biofeedback to form four possible interventions or treatment plans. The individual conditions being manipulated

are known as **crossed factors** or **crossed treatments**. Also called **crossed design**.

**crossed reflex** a reflex that occurs on the opposite side of the body from the part stimulated, such as the **CROSSED-EXTENSION REFLEX**.

**cross-education** *n.* see **CROSS-TRAINING**.

**cross-eye** *n.* a type of **STRABISMUS** (squint) in which there is a deviation of one or both eyes toward the other. The condition usually begins in infancy and is caused by deficient activity of one or more extrinsic **EYE MUSCLES**. Uncorrected cross-eye results in double visual images or **FUNCTIONAL AMBLYOPIA**. Cross-eye can be treated surgically in most cases. Also called **convergent strabismus**; **esotropia**.

**cross-fostering** *n.* **1.** in **ANIMAL BEHAVIOR** studies, the exchange of offspring between litters as a means of separating the effects of genetics from early experience. Wild rats reared by laboratory rats display less aggressive behavior, and mice from a polygynous species with low levels of territorial aggression that are cross-fostered to monogamous territorial mice display increased aggression and have patterns of brain neuropeptides more similar to their foster parents than to their natural parents. See also **SEXUAL IMPRINTING**. **2.** a similar technique used for investigating the effect of genetic factors in the development of a disorder. It involves either (a) having the offspring of biological parents who do not show the disorder reared by adoptive parents who do or (b) having offspring of parents who show the disorder reared by parents who do not. Children cross-fostered in this manner are called **index adoptees**, whereas **control adoptees** are children whose biological parents and adoptive parents do not show the disorder.

**cross-functional team** in business, a work group composed of members of diverse departments across the organization and different levels of authority. Each member of the team brings specific functional expertise necessary to handle a specific product, issue, or customer. Also called **project team**. See also **SUBJECT-MATTER EXPERT**.

**cross-gender behavior** the process or habit of assuming the role of the opposite gender by adopting the clothes, hair style, and manner of speaking and gesturing that society considers characteristic of that gender. See **CROSS-DRESSING**.

**crossing over** in genetics, see **RECOMBINATION**.

**cross-lagged panel design** a study of the relationships between two or more variables across time in which one variable measured at an earlier point in time is examined with regard to a second variable measured at a later point in time, and vice versa. For example, suppose an organizational researcher measures job satisfaction and job performance at the beginning of one fiscal year and at the beginning of a second fiscal year. Examining the correlations between satisfaction and performance at the different times provides information about their possible causal association: If the correlation between high performance at Time 1 and satisfaction at Time 2 is significantly stronger than the correlation between satisfaction at Time 1 and performance at Time 2, it is potentially the case that those who perform better are the ones who subsequently are more satisfied with their jobs.

**cross-linkage theory** the concept that biological aging results from functional deterioration of body tissues due to

the molecular cross-linkages of and subsequent structural changes in collagen and other proteins. [proposed in 1942 by Finnish-born U.S. chemist Johan Bjorksten (1907–1995)]

**cross-modal association 1.** the coordination of sensory inputs involving different brain regions. It is usually required in tasks that involve matching auditory and visual inputs, tactile and visual inputs, or a similar combination of cognitive functions. Lesions in the temporal, parietal, or occipital lobes may be diagnosed by cross-modal association testing. See **PERCEPTUAL SYNTHESIS**; **SENSORY INTERACTION**. **2.** a phenomenon in which the input to one sense reliably generates an additional sensory output that is usually generated by the input to a separate sense.

**cross-modality matching** a **DIRECT SCALING** method of matching the magnitude of a stimulus (e.g., the brightness of a light) to the magnitude of another stimulus to which a different sense responds (e.g., the loudness of a sound).

**cross-modal matching** the ability to recognize an object initially inspected with one modality (e.g., touch) via another modality (e.g., vision). Also called **intermodal matching**.

**cross-modal perception** see **INTERSENSORY PERCEPTION**.

**cross-modal transfer** recognition of an object through a sense other than the sense through which the object was originally encountered.

**cross-nasal adaptation** **OLFACTORY ADAPTATION** in one side of the nose after presenting a stimulus to the other side of the nose. Typically, cross-nasal adaptation is less pronounced than the adaptation in the side of the nose that receives the stimulus.

**crossover design** a study in which different treatments are applied to the same individuals but in different sequences. In the most basic crossover design, a group of participants receives Treatment A followed by Treatment B whereas a second group receives Treatment B followed by Treatment A. For example, a researcher could use such a design to assess the effect of attending a day service on stroke survivors, randomly assigning participants to one of two groups, the first of which would attend the service for 6 months and then not attend for 6 months, and the second of which would not attend the service for 6 months and then would attend for 6 months. As with **WITHIN-SUBJECTS DESIGNS**, the benefit of this design is the reduction in **ERROR VARIANCE**. Also called **crossover study**; **crossover trial**. Compare **PARALLEL-GROUPS DESIGN**. See also **GRAECO-LATIN SQUARE**; **LATIN SQUARE**.

**cross-product** *n.* the set of values obtained by multiplying each value of one variable (*x*) by each value of a second variable (*y*).

**cross section** a slice cut through any plane of an object or organ for examination. See **CORONAL SECTION**; **HORIZONTAL SECTION**. —**cross-sectional** *adj.*

**cross-sectional analysis** the examination of data that have been collected at a single point in time. For example, a researcher might conduct a cross-sectional analysis after measuring the income of people in different professions at the end of a particular year. Compare **TIME-SERIES ANALYSIS**.

**cross-sectional design** a research design in which in-

dividuals, typically of different ages or developmental levels, are compared at a single point in time. An example is a study that involves a direct comparison of 5-year-olds with 8-year-olds. Given its snapshot nature, however, it is difficult to determine causal relationships using a cross-sectional design. Moreover, a cross-sectional study is not suitable for measuring changes over time, for which a LONGITUDINAL DESIGN is required. See also CROSS-SECTIONAL ANALYSIS.

**cross-sectional sampling** a sampling method in which scores are obtained at a single point in time. For example, cross-sectional sampling may involve collecting data from individuals of various ages or developmental levels so as to study behavioral or other differences among them.

**cross-sequential design** a study in which two or more groups of individuals of different ages are directly compared over a period of time. It is thus a combination of a CROSS-SECTIONAL DESIGN and a LONGITUDINAL DESIGN. For example, an investigator using a cross-sequential design to evaluate children's mathematical skills might measure a group of 5-year-olds and a group of 10-year-olds at the beginning of the research and then subsequently reassess the same children every 6 months for the next 5 years. Also called **cross-sequential study**.

**cross-situational consistency** the degree to which a psychological attribute, such as a personal disposition or a cognitive style, is displayed in the same, or a functionally equivalent, manner in different social environments.

**cross-tabulation** *n.* the number, proportion, or percentage of cases that have specific combinations of values on two variables that each have multiple categories. Such information may be presented visually in a **cross-tabulation table**. For example, a cross-tabulation table could be used to show the number of study participants according to both their sex and marital status.

**cross-talk** *n.* a pattern of errors that occurs during the concurrent performance of tasks when the components of one task impinge on those of the other task, for example, when performing a different task with each hand. See DUAL-TASK PERFORMANCE.

**cross-tolerance** *n.* a condition in which TOLERANCE to one drug results in a lessened response (i.e., increased tolerance) to a related drug. Cross-tolerance may be seen with amphetamines, benzodiazepines, hallucinogens, and opiates, among other drugs. Compare CROSS-DEPENDENCE.

**cross-training** *n.* **1.** training employees in a variety of tasks or jobs that are outside their specialty areas so that they can substitute for one another when unforeseen absences occur. Cross-training is used to develop employee skills and to increase the flexibility with which a group or organization can deal with work demands. **2.** improvement in skill performance of one part of the body (e.g., the left hand) as a result of practice with another part of the body (e.g., the right hand). Also called **cross-education**. **3.** in sport, combining different sport or fitness activities to improve such areas as performance, endurance, flexibility, or weight loss. Combinations such as running (track), swimming, and weightlifting are typical. —**cross-train** *vb.*

**cross-validation** *n.* a procedure used to assess the utility or stability of a statistical model. A data set is randomly divided into two subsets, the first of which (the **derivation sample**) is used to develop the model and the second of

which (the **cross-validation sample**) is used to test it. In regression analysis, for example, the first subset would be analyzed in order to develop a REGRESSION EQUATION, which would then be applied to the remaining subset to see how well it predicts the scores that were actually observed.

**Crouzon syndrome** a condition in which a wide skull with a protrusion near the anterior fontanel (on top of the head, at the front) is associated with a beaked nose and ocular abnormalities (see CRANIOSYNOSTOSIS SYNDROME). The latter may include atrophy, divergent strabismus, and blindness. Neurological disorders may result from intracranial pressure, and intellectual disability may occur in some cases. Also called **craniofacial dysostosis**. See also APERT SYNDROME. [described in 1912 by Octave **Crouzon** (1874–1938), French neurologist]

**crowd** *n.* a sizable gathering of people who temporarily share a common focus and a single location. Crowds vary in shape, size, and type; some common types include CASUAL CROWDS and MILLING CROWDS that form in the street, AUDIENCES, QUEUES, and MOBS.

**crowd behavior** the activities or conduct of a group of people who congregate temporarily while their attention is focused on the same object or event. Such behavior may differ depending on the nature of the crowd. For example, an AUDIENCE tends to be relatively passive (smiling, laughing, applauding), whereas a street or MILLING CROWD typically moves without apparent aim and a MOB may act violently. See also COLLECTIVE BEHAVIOR.

**crowding** *n.* **1.** psychological tension produced in environments of high population density, especially when individuals feel that the amount of space available to them is insufficient for their needs. Crowding may have a damaging effect on mental health and may result in poor performance of complex tasks, STRESSOR AFTEREFFECTS, and increased physiological stress. In nonhuman animals, crowding can lead to impaired reproduction, decreased life expectancy, and a variety of pathological behaviors. Two key mechanisms underlying crowding are lack of control over social interaction (i.e., privacy) and the deterioration of socially supportive relationships. See also BEHAVIORAL SINK; DENSITY. **2.** a phenomenon in which the perception of a suprathreshold target is impaired by nearby distractors, reflecting a fundamental limitation on visual spatial resolution. In reading, for example, letter recognition is reduced by crowding from adjacent letters. Also called **crowding effect**.

**crowd psychology** **1.** the mental and emotional states and processes unique to individuals when they are members of street crowds, mobs, and other such collectives. **2.** the scientific study of these phenomena. See also COLLECTIVE PSYCHOLOGY.

**CRS** abbreviation for CONNERS' RATING SCALES.

**crus** *n.* (*pl.* **crura**) **1.** the portion of the leg between the knee and the ankle. **2.** a leglike part of the body, such as the ventral portion of a CEREBRAL PEDUNCLE. —**crural** *adj.*

**crus cerebri** see CEREBRAL PEDUNCLE.

**crutch** *n.* **1.** a device, usually made of metal or wood, designed to provide ambulatory support to people with disabilities or other problems affecting the lower limbs. **2.** colloquially, a nonspecific coping or support mechanism, which may be of a psychological, medicinal, or other nature. **3.** a learning aid.

**crying-cat syndrome** see CRI DU CHAT SYNDROME.

**cryo-** *combining form* cold or freezing.

**cryogenics** *n.* the branch of physics concerned with the study of extremely low temperatures and resulting phenomena. It has diagnostic and therapeutic application, as when certain immunoglobulins associated with a variety of diseases are detected in the blood by reducing the temperature of a blood sample to the point at which the substances separate from the blood serum. Cryogenic methods are also used to freeze tissue samples to be sliced for microscopic examination or to be destroyed, as in cryogenic surgery, which selectively destroys diseased tissue by freezing it.

**cryonic suspension** the attempt to preserve a corpse with the intention of subsequent revival and restoration to healthy life. Dr. James H. Bedford, a retired professor of psychology who died on January 12, 1967, is thought to have been the first person to be placed in cryonic suspension (in a stainless steel chamber filled with liquid nitrogen). An estimated 250 people have since undergone the procedure upon their death. No human resuscitations from cryonic suspension have yet been reported or, as far as is known, even attempted.

**cryostat** *n.* a device for cutting thin, frozen sections (slices) of tissue, used, for example, in preparing brain and other tissue sections for microscopic examination. Compare MICROTOME.

**crypsis** *n.* the ability to remain inconspicuous through immobility and other behavior or through the use of CAMOUFLAGE. —**cryptic** *adj.*

**cryptarithmic** *n.* in studies of problem solving, an arithmetic problem in which the digits are replaced with letters. The participant must determine which digit is represented by each letter. See also CODE TEST; CRYPTOGRAM.

**cryptesthesia (cryptaesthesia)** *n.* an experience of CLAIRVOYANCE, CLAIRAUDIENCE, TELEPATHY, or some other form of EXTRASENSORY PERCEPTION that cannot be explained with reference to any known sensory stimulus. Also called **telesthesia**. —**cryptesthetic** *adj.*

**cryptic female choice** a practice in which females mate with several males but “choose” which one’s sperm will fertilize their eggs, concealing these decisions from the males. This practice allows females more choice in MATE SELECTION. In studies demonstrating cryptic female choice, it is the sperm that is genetically most compatible that fertilizes the female’s eggs, rather than sperm from the most attractive males.

**crypto-** (**crypt-**) *combining form* concealed.

**cryptogram** *n.* in studies of problem solving, a short quip or quotation whose letters are randomly assigned to replace one another (e.g., *s* stands for *a*, *a* stands for *n*, and so on). The participant must determine the letter correspondences used in the cryptogram and thus decode the message. See also CODE TEST; CRYPTARITHMETIC.

**cryptomnesia** *n.* an IMPLICIT MEMORY phenomenon in which people mistakenly believe that a current thought or idea is a product of their own creation when, in fact, they have encountered it previously and then forgotten it. Cryptomnesia can occur in any creative enterprise, as for example when an investigator develops a research idea that he or she believes is original whereas in actuality it can be documented that he or she saw or heard the idea at some earlier point in time. Also called **inadvertent plagiarism**; **unconscious plagiarism**.

**cryptophasia** *n.* secret or incomprehensible language, especially the peculiar communication patterns that are sometimes developed between twins and are understandable only to them.

**cryptophoric symbolism** a type of REPRESENTATION expressed indirectly in the form of a metaphor. For example, a person may describe a difficult relationship in terms of an illegible map or a stuck door. In METAPHOR THERAPY, patients are encouraged to alter their attitudes or perceptions by finding new metaphors. Also called **metaphoric symbolism**. [described by U.S. psychotherapist Richard R. Kopp (1942–2012)]

**cryptophthalmos syndrome** a familial or hereditary disorder in which a child is born with skin covering the eyes. The anomaly may occur on one side or both. The eyes are usually present under the facial skin but abnormal; eyelids, eyelashes, and, usually, tear ducts are lacking. The individual may be able to discern light and colors. Hearing loss is common, as are ear anomalies. Intellectual disability, malformations in the genitals, and syndactyly (fused fingers or toes) can also occur. Also called **Fraser-François syndrome**; **Fraser syndrome**.

**cryptorchidism** *n.* the failure of one or both testes to descend into the scrotum. It is not unusual and does not interfere with male hormonal function, but spermatogenesis is unlikely if the individual with this condition is not treated in childhood. The untreated condition is also associated with an increased incidence of testicular cancer in later life. Also called **arrested testis**; **undescended testicle**. See also ECTOPIC TESTIS; HYPERMOBILE TESTES; MONORCHIDISM. —**cryptorchid** *adj., n.*

**crysta** *n.* see CRISTA.

**crystal gazing** **1.** in certain alternative therapies, a technique in which an individual is instructed to visualize significant experiences or produce associations while staring into a glass ball, light bulb, mirror, or other shiny or transparent object. **2.** the occult practice in which a fortune teller or clairvoyant looks into a crystal ball to “see” visions of future or hidden events, usually in the life of a particular client. It is a form of SCRYING.

**crystal healing** a pseudoscientific medical practice in which the alleged power of certain crystals to affect the human energy field is used to treat physical or mental ailments. See REICHENBACH PHENOMENON. See also FAITH HEALING; PSYCHIC HEALING.

**crystallization** *n.* in social psychology, ATTITUDE STRENGTH or, more specifically, the level of PERSISTENCE OF AN ATTITUDE over time and the level of resistance to active attempts to change it.

**crystallized intelligence (crystallized ability)** see CATTELL–HORN THEORY OF INTELLIGENCE.

**Cs** abbreviation for CONSCIOUS.

**CS** abbreviation for CONDITIONED STIMULUS.

**CSA** abbreviation for CONTROLLED SUBSTANCES ACT.

**CSAI** abbreviation for COMPETITIVE STATE ANXIETY INVENTORY.

**C-section** *n.* abbreviation for CESAREAN SECTION.

**CSERP** abbreviation for CHEMOSENSORY EVENT-RELATED POTENTIAL.

**CSES** abbreviation for COLLECTIVE SELF-ESTEEM Scale.

**CSF 1.** abbreviation for CEREBROSPINAL FLUID. **2.** abbreviation for CONTRAST-SENSITIVITY FUNCTION.

**CSI effect** a presumed phenomenon in which popular television crime shows are thought to raise jurors' expectations about forensic science and influence their verdicts if the evidence they hear at trial does not meet those expectations. This effect, according to observations from attorneys, judges, and journalists, is manifested as jurors tending to believe they understand the manner in which investigators collect, analyze, and interpret crime scene evidence; to insist on large amounts of often highly technical evidence in determining defendant guilt; and to overvalue the conclusiveness of DNA testing—that is, to have forensic presumptions of the sort that are the stock and trade of popular crime dramas on television. Despite the amount of media attention devoted to the CSI effect, preliminary research on its existence has produced mixed results. [coined from *CSI: Crime Scene Investigation*, the name of a popular U.S. forensics-based television program that began in 2000, as well as its spin-offs]

**CSR 1.** abbreviation for COMBAT STRESS REACTION. **2.** abbreviation for CONTINUED-STAY REVIEW.

**CSS** abbreviation for CONTENTION SCHEDULING SYSTEM.

**C-suite** the highest ranking executives in a corporation, collectively. The term is derived from the tendency to give the most important senior-level executives titles beginning with chief, as in chief executive officer, chief operating officer, and so forth. Also called **C-level executives**.

**CS-US interval** abbreviation for CONDITIONED STIMULUS—UNCONDITIONED STIMULUS INTERVAL.

**CT 1.** abbreviation for COGNITIVE THERAPY. **2.** abbreviation for COMPUTED TOMOGRAPHY. **3.** abbreviation for CONDUCTION TIME.

**CTD** abbreviation for cumulative trauma disorder (see REPETITIVE STRAIN INJURY).

**CTI** abbreviation for CONSTRUCTIVE THINKING INVENTORY.

**CTS** abbreviation for CARPAL TUNNEL SYNDROME.

**CT scan** abbreviation for COMPUTED TOMOGRAPHY scan.

**CTT** abbreviation for CLASSICAL TEST THEORY.

**CTZ** abbreviation for CHEMORECEPTOR TRIGGER ZONE.

**cube model** a three-dimensional model of the information cues that determine causal attributions. The cues are consistency (the extent to which observed behavior agrees with previous behavior), distinctiveness (the contextual, or situational, variability surrounding the behavior), and consensus (the extent to which others act similarly in the same situations). See **ATTRIBUTION THEORY**.

**cubic difference tone** see **COMBINATION TONE**.

**cubicle etiquette** a set of workplace SOCIAL NORMS for the behavior of employees in partitioned cubicles, governing such issues as privacy, noise, odors, and WORKSPACE cleanliness.

**cuckoldry** *n.* sexual behavior in which a pair-bonded female mates with a male other than her partner. Only about 10% of bird species that are socially monogamous are genetically monogamous as well (see **MONOGAMY**). Males whose mates engage in **EXTRAPAIR MATING** assist in the rearing of the unrelated offspring. Females practicing cuckoldry may benefit from having progeny from genetically higher quality males; for example, female blackbirds

that do this have more surviving offspring than monogamous blackbirds.

**cuddling** *n.* holding close; a form of **ATTACHMENT BEHAVIOR** between individuals that is intended to convey affection or give comfort. In developmental psychology, it typically refers to such behavior between a parent or caregiver and a child.

**cue** *n.* a stimulus, event, or object that serves to guide behavior, such as a **RETRIEVAL CUE**, or that signals the presentation of another stimulus, event, or object, such as an unconditioned stimulus or reinforcement.

**cue-controlled relaxation** a technique in which a client is taught to associate a cue word with the practice of relaxing. See also **APPLIED RELAXATION**.

**cue-dependent forgetting** forgetting caused by the absence at testing of a stimulus (or cue) that was present when the learning occurred. See also **CONTEXT-SPECIFIC LEARNING**; **MOOD-DEPENDENT MEMORY**; **STATE-DEPENDENT LEARNING**.

**cued panic attack** a **PANIC ATTACK** that occurs almost invariably upon exposure to, or in anticipation of, a specific situational trigger. For example, an individual with social phobia may have a panic attack as a result of just thinking about an upcoming presentation. Also called **situationally bound panic attack**. See also **SITUATIONALLY PREDISPOSED PANIC ATTACK**. Compare **UNCUED PANIC ATTACK**.

**cued recall** a type of memory task in which an item to be remembered is presented for study along with a **CUE** and the participant subsequently attempts to recall the item when given the cue.

**cued speech** speech that is supplemented with manual gestures for the benefit of people with hearing impairment. Hand positions are used to indicate certain phonemic distinctions that are not visible. For example, the distinction between /p/ and /t/ when spoken is visible, whereas the distinction between /t/ and /d/ is not. Unlike **SIGN LANGUAGE** and **FINGERSPELLING**, the hand positions are not adequate to convey communication without the accompanying speech.

**cue exposure** a **BEHAVIOR THERAPY** technique in which a client is exposed to stimuli that induce cravings for substances (e.g., alcohol, tobacco) while the therapist uses other techniques to reduce or eliminate the craving. This technique is most frequently used in substance abuse and smoking cessation programs. See also **EXPOSURE THERAPY**.

**cue-overload principle** the principle that a **RETRIEVAL CUE** starts to lose its effectiveness in aiding recall as items associated with that particular cue increase in number.

**cue reversal** changing the outcome of a stimulus so that it signals the opposite of that with which it was first associated. For example, after learning that Stimulus A signals food and Stimulus B does not, during cue reversal the outcomes are exchanged, and the individual must now learn that Stimulus B signals food and Stimulus A does not.

**cul-de-sac** *n.* see **BLIND ALLEY**.

**culpability** *n.* in law, the state of being found criminally responsible for one's actions and subject to legal sanctions. See **CRIMINAL RESPONSIBILITY**. —**culpable** *adj.*

**cult** *n.* **1.** a religious or quasi-religious group characterized by unusual or atypical beliefs, seclusion from the outside world, and an authoritarian structure. Cults tend to be

highly cohesive, well organized, secretive, and hostile to nonmembers. **2.** the system of beliefs and rituals specific to a particular religious group.

**cult of personality** exaggerated devotion to a charismatic political, religious, or other leader, often fomented by authoritarian figures or regimes as a means of maintaining their power. Also called **personality cult**.

**cultural absolutism** see CULTURAL UNIVERSALISM.

**cultural adaptability** the ability of individuals or groups to adjust and become accustomed to the values, traditions, and other characteristics of a different society, such as those of a new community to which they have migrated. See ACCULTURATION.

**cultural anthropology** see ANTHROPOLOGY.

**cultural assimilation** see ACCULTURATION STRATEGIES.

**cultural bias** the tendency to interpret and judge phenomena in terms of the distinctive values, beliefs, and other characteristics of the society or community to which one belongs. This sometimes leads people to form opinions and make decisions about others in advance of any actual experience with them (see PREJUDICE). Cultural bias has become a significant concern in many areas, including PSYCHOMETRICS, ERGONOMICS, and CLINICAL PSYCHOLOGY. See also CULTURE-FAIR TEST; CULTURE-FREE TEST; ETHNOCENTRISM.

**cultural blindness** the inability to understand how particular matters might be viewed by people of a different culture because of a rigid adherence to the views, attitudes, and values of one's own culture or because the perspective of one's own culture is sufficiently limiting to make it difficult to see alternatives.

**cultural competence** **1.** possession of the skills and knowledge that are appropriate for and specific to a given culture. **2.** the capacity to function effectively in cultural settings other than one's own. This usually involves a recognition of the diversity both between and within cultures, a capacity for cultural self-assessment, and a willingness to adapt personal behaviors and practices. Cultural competence has become a central concept in health care, with educators and practitioners focused on recognizing the cultural variation in clients' health-related beliefs and activities in order to improve cross-cultural communication and health outcomes. See also CULTURAL SENSITIVITY.

**cultural conserve** anything (e.g., a legend, tradition, or artifact) that has the effect of preserving valuable cultural memories, such as skills, discoveries, concepts, or moral values. See also CULTURAL HERITAGE. [introduced by Jacob L. MORENO]

**cultural deprivation** **1.** lack of opportunity to participate in the cultural offerings of the larger society due to such factors as economic deprivation, substandard living conditions, or discrimination. See PSEUDORETARDATION. **2.** loss of identification with one's cultural heritage as a result of assimilation into a larger or dominant culture. See DECULTURATION. **3.** lack of culturally stimulating phenomena in one's environment.

**cultural determinism** the theory or premise that individual and group characteristics and behavior patterns are produced largely by a given society's economic, social, political, and religious organization. See NATIONAL CHARACTER. See also SOCIAL DETERMINISM.

**cultural diversity** **1.** the existence of societies, commu-

nities, or subcultures that differ substantially from one another. **2.** communities or subcultures that function within a larger society while maintaining their distinct CULTURE TRAITS. See also MULTICULTURALISM.

**cultural drift** the gradual, uncontrolled changing of a culture, with its distinctive norms, values, and patterns of behavior, over time. Also called **culture drift**. See also CULTURE CHANGE; SOCIAL CHANGE; SOCIAL EVOLUTION.

**cultural epoch theory** the theory, formerly influential but now largely discredited, that all human cultures pass through the same stages of social and economic organization in the same order. In most versions of the theory, this involves progress from a hunting-based society through pastoral, agricultural, and early industrial epochs to the modern developed world, with each stage being seen as more complex, organized, and secular than previous stages. See MODERNIZATION; PRIMITIVE; RECAPITULATION THEORY; SOCIAL DARWINISM.

**cultural ergonomics** a specialty area of ERGONOMICS that focuses on cultural factors relevant to human performance and the design and evaluation of work systems. Such factors as national culture, ethnicity, gender, and class are assessed as part of the task of creating systems that can be used efficiently and safely by a particular culture or subculture. See also INDIGENOUS RESEARCHER; POPULATION STEREOTYPE.

**cultural genocide** destruction of a culture's heritage, values, and practices, usually by another, dominant cultural group.

**cultural heritage** the customs, language, values, and skills that are handed down from each generation to the next in a particular cultural group and that help to maintain its sense of identity. The cultural heritage also includes specific technological or artistic achievements. See SOCIAL HERITAGE; SOCIAL TRANSMISSION.

**cultural learning** the transmission, with a high degree of fidelity, of acquired information and behavior both within and across generations. Cultural learning theory proposes three stagelike levels of cultural learning: IMITATIVE LEARNING, INSTRUCTED LEARNING, and COLLABORATIVE LEARNING. [proposed by U.S. psychologist Michael Tomasello (1950– ) and colleagues]

**culturally loaded item** in testing and assessment, a question that is more relevant to the background and experience of the individual who wrote the question than to the individual who is trying to answer the question, such that the response may not be a fair indication of the responder's knowledge. For example, if a question included content about a particular religious tradition it might be perceived as being a culturally loaded item if the test taker were an atheist or of a completely different religion. See CULTURE-FAIR TEST.

**cultural memory** see COLLECTIVE MEMORY.

**cultural monism** a view or perspective holding that MULTICULTURALISM operates against social cohesion and that ethnic and other minorities should therefore be encouraged to assimilate with the dominant culture.

**cultural neuroscience** an emerging discipline that uses brain-imaging technology to show how environment and beliefs can shape mental function. One study found, for example, that reward circuitry fired in the limbic system of American participants when they viewed silhouettes of humans in dominant poses but did not fire when they

viewed silhouettes in submissive poses, whereas the brains of Japanese participants responded in the opposite manner: Their reward circuitry fired in response to submissive, but not dominant, silhouettes. The study suggests that even as people perceive the same stimulus, their brains may activate differently, showing neural responses that reflect their cultural values. See also SOCIAL NEUROSCIENCE.

**cultural norm** a societal rule, value, or standard that delineates an accepted and appropriate behavior within a culture. See also NORMATIVE INFLUENCE; SOCIAL NORM.

**cultural parallelism** in anthropology, the development of analogous cultural patterns, such as sun worship, in geographically separate groups assumed to have had no communication with each other.

**cultural pluralism** see MULTICULTURALISM.

**cultural process** the manner in which ethnic and social values are transmitted across generations and modified by the influences prevailing over each.

**cultural psychology** an interdisciplinary extension of general psychology concerned with those psychological processes that are inherently organized by culture. It is a heterogeneous class of perspectives that focus on explaining how human psychological functions are culturally constituted through various forms of relations between people and their social contexts. As a discipline, cultural psychology relates to cultural anthropology, sociology, semiotics, language philosophy, and culture studies. Within psychology, it relates most closely to cultural, social, developmental, and cognitive issues. See also CROSS-CULTURAL PSYCHOLOGY; ETHNIC PSYCHOLOGY.

**cultural relativism** the view that attitudes, behaviors, values, concepts, and achievements must be understood in the light of their own cultural milieu and not judged according to the standards of a different culture. In psychology, the relativist position questions the universal application of psychological theory, research, therapeutic techniques, and clinical approaches, because those used or developed in one culture may not be appropriate or applicable to another. Compare CULTURAL UNIVERSALISM.

**cultural residue** see CULTURE LAG.

**cultural sensitivity** awareness and appreciation of the values, norms, and beliefs characteristic of a cultural, ethnic, racial, or other group that is not one's own, accompanied by a willingness to adapt one's behavior accordingly. See CULTURAL COMPETENCE.

**cultural specificity of emotions** the finding that the elicitors and the expressions of emotions differ dramatically in members of different cultures and societies. Compare UNIVERSALITY OF EMOTIONS.

**cultural tailoring** adapting a questionnaire, intervention, or the like for the particular cultural population in which it will be used, with an awareness of the population's values, attitudes, history, and other influences on behavior. Cultural tailoring is intended to maximize rates of participant recruitment for studies, increase rates of completion for surveys and other instruments, enhance accuracy in language and understanding in communications, and increase positive outcomes from treatment.

**cultural test bias** partiality of a test in favor of individuals from certain backgrounds at the expense of individuals from other backgrounds. The partiality may be in the content of the items, in the format of the items, or in the

very act of taking a test itself. For example, suppose a verbal comprehension exam was delivered on a computer and incorporated passages, pictures, and questions drawn from American literature. The exam is likely to favor individuals who grew up in American families that could afford to have computers and a variety of books at home. In contrast, poorer individuals who emigrated to America and were without computers or many books in the home might find that the exam had some degree of cultural test bias. See also CULTURALLY LOADED ITEM; TEST BIAS.

**cultural transmission** the processes by which customs, beliefs, rites, and knowledge are imparted to successive generations within a society.

**cultural turn 1.** a general trend toward considering culture when analyzing and framing psychological, educational, sociological, political, and other issues. **2.** a movement within POSTMODERNISM that gained traction among social science scholars and historians in the 1970s, in which culture was considered when analyzing behavior and events.

**cultural universalism** the view that the values, concepts, and behaviors characteristic of diverse cultures can be viewed, understood, and judged according to universal standards. Such a view involves the rejection, at least in part, of CULTURAL RELATIVISM. Also called **cultural absolutism**.

**culture** *n.* **1.** the distinctive customs, values, beliefs, knowledge, art, and language of a society or a community. These values and concepts are passed on from generation to generation, and they are the basis for everyday behaviors and practices. **2.** the characteristic attitudes and behaviors of a particular group within society, such as a profession, social class, or age group. See also COUNTERCULTURE; SUBCULTURE; YOUTH CULTURE. —**cultural** *adj.*

**culture-bias theory** the theory that measurements of intelligence may be biased in favor of members of certain cultural groups and against members of other cultural groups.

**culture bound** describing attitudes, practices, or behaviors that are the products of a particular culture and that are not widely found in other cultures.

**culture-bound syndrome** a pattern of mental illness and abnormal behavior that is unique to a specific ethnic or cultural population and does not conform to standard classifications of psychiatric disorders. Culture-bound syndromes include, among others, AMOK, AMURAKH, BANGUNGUT, HSIEH-PING, IMU, JUMPING FRENCHMEN OF MAINE SYNDROME, KORO, LATAH, MAL DE PELEA, MYRIACHIT, PIBLOKTO, SUSTO, VODOO DEATH, and WINDIGO PSYCHOSIS. Also called **culture-specific syndrome**.

**culture change** modification of a community's culture, whether gradually over time (see CULTURAL DRIFT) or more rapidly as the result of contact with other cultures (see ACCULTURATION; DEACULTURATION). Also called **cultural change**. See also SOCIAL CHANGE.

**culture clash** a situation in which the diverging attitudes, morals, opinions, or customs of two dissimilar cultures or subcultures are revealed. This may occur, for example, when people in different professions, such as academics and business people, collaborate on a project. See also CULTURE CONFLICT; CULTURE SHOCK.

**culture complex** a distinctive pattern of activities, beliefs, rites, and traditions associated with one central fea-

ture of life in a particular culture. An example is the cluster of activities, ceremonies, folklore, songs, and stories associated with the hunting and use of the buffalo by Native American peoples. Also called **culture pattern**. Compare CULTURE TRAIT.

**culture conflict** 1. tension or competition between different cultures. It often results in the weakening of a minority group's adherence to cultural practices and beliefs as these are superseded by those of a dominant or adjoining culture. 2. the conflicting loyalties experienced by individuals who endorse the cultural beliefs of their subgroup but are also drawn to the practices and beliefs of the dominant culture. Also called **internal culture conflict**. See CULTURE SHOCK.

**culture-fair test** a test based on common human experience and considered to be relatively unbiased with respect to special background influences. Unlike some standardized intelligence assessments, which may reflect predominantly middle-class experience, a culture-fair test is designed to apply across social lines and to permit equitable comparisons among people from different backgrounds. Nonverbal, nonacademic items are used, such as matching identical forms, selecting a design that completes a given series, or drawing human figures. Studies have shown, however, that any assessment reflects certain socioethnic norms to some degree and hence may tend to favor people with certain backgrounds rather than others. For example, an item that included the phrase "bad rap" could be unclear, as the phrase could refer to unjust criticism or to rap music that was either not very good or rather good, depending on an individual's common use of the word "bad." See also CROSS-CULTURAL TESTING.

**culture-free test** an intelligence test designed to eliminate cultural bias completely by constructing questions that contain either no environmental influences or no environmental influences that reflect any specific culture. However, the creation of such a test is probably impossible, and psychometricians instead generally seek to develop CULTURE-FAIR TESTS.

**culture lag** 1. the tendency for some aspects of a culture to change at a slower rate than others, resulting in the retention of beliefs, customs, and values that no longer seem appropriate to altered economic or technological conditions. 2. a specific cultural survival of this kind. Compare CULTURE LEAD. Also called **cultural lag**; **cultural residue**.

**culture lead** a particular aspect of a culture that appears to be changing faster than the culture as a whole. Technological and economic changes are often of this kind. Compare CULTURE LAG.

**culture of children** the customs, values, beliefs, and rituals of children that distinguish them from adults. Rules and norms of behavior are initially passed down from older children to younger children, but in later childhood and adolescence, norms are maintained by means of PEER PRESSURE.

**culture of honor** a CULTURAL NORM in a region, nation, or ethnic group prescribing immediate, definitive retribution as the preferred reaction to an insult or other transgression, particularly one that threatens a person's reputation. Ethnographic studies suggest that cultures that subsist by herding typically attach more importance to honor and reputation than do people from agrarian societies, since a person in a herding culture who vociferously defends against threats is less likely to have his or her liveli-

hood taken away by rustlers. This phenomenon seems to apply to the translocated descendants of such cultures as well. For example, Whites in the southern United States, who derive historically from Scotch-Irish herding societies, have been found to be more likely to hold values about honor and reputation and to respond to insults with swift action than are northern Whites descended from agrarian societies. A related concept is the **subculture of violence**, used by U.S. criminologist Marvin Wolfgang (1924–1998) and Italian criminologist Franco Ferracuti to explain the relatively high rates of violent crime among certain minority populations in impoverished urban areas.

**culture pattern** see CULTURE COMPLEX.

**culture-relevant tests** tests that are designed specifically to be relevant to a given cultural context. These tests typically differ at least somewhat from one culture to another beyond mere differences in language, and they have been carefully screened for appropriateness.

**culture shock** loneliness, anxiety, and confusion experienced by an individual or group that has been suddenly thrust into an alien culture or otherwise encounters radical cultural change. For example, a Filipino student studying at an American university may experience culture shock, as may a businessperson traveling abroad.

**culture-specific syndrome** see CULTURE-BOUND SYNDROME.

**culture trait** any basic belief, practice, technique, or object that can be said to identify a given culture in some aspect of its economic, political, social, or religious organization, such as a specific agricultural practice, law, ritual, belief about child-rearing, or architectural design. Compare CULTURE COMPLEX.

**cumulant** *n.* one of a set of values that describes the basic nature of a DISTRIBUTION. A cumulant is similar to and a logarithmic function of a MOMENT of a distribution, especially for the first few values. The first cumulant (like the first moment) is concerned with the MEAN or average of a set of numbers, the second cumulant (like the second moment) refers to the VARIANCE or degree of spread in a set of numbers, and the third cumulant (like the third moment) indicates the SKEWNESS or degree of lopsidedness in a set of numbers. Cumulants and moments may differ beyond these initial values, and statistical methods generally are concerned only with the first three cumulants or moments of a distribution, as well as the fourth moment, KURTOSIS.

**cumulative continuity** the process by which an individual's actions produce results that accumulate over time and move him or her along specific life trajectories.

**cumulative distribution function (CDF)** a formula that gives the PROBABILITY, from 0 to 1, that a variable will have a score less than or equal to a specific value. When this is plotted on a graph, the vertical *y*-axis will indicate the probability value from 0 to 1 for each possible score of the variable listed along the horizontal *x*-axis. This type of graph usually shows a pattern with a curve that rises from the lower left up to a peak at the upper right, where for the last score the probability that a variable will have a value equal to or less than the highest possible score is 1. Also called **distribution function**.

**cumulative educational advantage** an advantageous position that is achieved as the result of knowledge acquired over a period of time.



**cumulative frequency (CF)** a running total of how often specific values occur. Cumulative frequencies are used in DESCRIPTIVE STATISTICS when listing the number of participants who fall into each of several categories of a variable that can be ordered from low to high. For example, if test scores in a particular classroom are 1 F, 2 Ds, 4 Cs, 3 Bs, and 2 As, the cumulative frequency is obtained by successively adding the number of students at each score from an F to an A. Thus, the cumulative frequency values from the lowest to the highest would be 1, 3, 7, 10, and 12 for F, D, C, B, and A, respectively. See also CUMULATIVE FREQUENCY DISTRIBUTION.

**cumulative frequency distribution** a table with three columns where the first column (labeled X) lists the possible values for a variable, the second column (labeled *f*, for frequency) lists the number of scores that occur at each of the possible values given in the first column, and the third column (labeled CF, for CUMULATIVE FREQUENCY) gives the running total of each of the values in the second column. This type of table is useful in DESCRIPTIVE STATISTICS to depict the number of scores at or below each score level, and to provide an organized display of data that could also be graphed in a **cumulative frequency polygon** or **cumulative curve**. Also called **cumulative distribution**; **cumulative frequency table**.

**cumulative percentage** a running total of the percentage values occurring across a set of responses. The total will either remain the same or increase, reaching the highest value of 100% after totaling all of the previous percentages. For example, if the percentage of freshmen, sophomores, juniors, and seniors among all of the students at a college were 40%, 25%, 20%, and 15%, respectively, the cumulative percentage values would be 40%, 65%, 85%, and 100% when summing from the percentage of freshman up to the percentage of seniors.

**cumulative probability** a running total of the chance of a score occurring at or below a certain point, where the largest running total is a value of 1.0. For example, a college teacher may want to know the cumulative probability values showing the chance that a grade selected from the entire set of grades on a recently given test would be an F, D, C, B, or A. If there were 8.3% Fs, 16.7% Ds, 33.3% Cs, 25% Bs, and 16.7% As, the cumulative probability values would be .083, .250, .583, .833, and 1.000, respectively, when totaling from the F to the A values.

**cumulative probability distribution** a graphical representation of a set of data that displays along the vertical *y*-axis the chance that a case picked at random from that set will have a value less than or equal to the corresponding value on the horizontal *x*-axis. When the variable of interest has DISCRETE or CATEGORICAL whole-integer values, as with the number of students in a class, the cumulative probability distribution also may be called a **cumulative probability function**.

**cumulative record** a continuous tally or graph to which new data are added. In CONDITIONING, for example, a cumulative record is a graph showing the cumulative number of responses over a continuous period of time. It is often used in such contexts to display performance of FREE-OPERANT behavior under a SCHEDULE OF REINFORCEMENT and provides a direct and continuous indicator of the rate of response.

**cumulative rehearsal** a strategy for retaining information in short-term memory in which a person repeats

the most recently presented item (e.g., a word) and then rehearses it (see REHEARSAL) with all the items that have been presented before it, thus reviewing earlier items upon each presentation of a new item. Cumulative rehearsal is associated with higher levels of free-recall performance than is PASSIVE REHEARSAL. Also called **active rehearsal**.

**cumulative relative frequency** a running sum of the proportion of times specific scores occur compared to the total number of individual score occurrences in a set of data. For example, a teacher may find that there was just one score of F out of a total of 12 scores, such that the first cumulative relative frequency distribution value was .083 (i.e.,  $1/12$ ). If there were two scores of D added to the one score of F, the second value would be .250 (i.e.,  $1/12 + 2/12 = 3/12$ ); and so on up through the values to a score of A, which would equal 1.0 as all of the scores would be taken into account at that point (i.e.,  $12/12 = 1.0$ ). A collection or table of cumulative relative frequencies is called a **cumulative relative frequency distribution**, and a plot of the values is called a **cumulative relative frequency curve**, **cumulative relative frequency diagram**, or **cumulative relative frequency graph**. Also called **cumulative proportion**.

**cumulative response curve** a cumulative record, in the form of a graph, of the responses in a conditioning experiment. Lack of response is indicated by a flat horizontal line, whereas faster responses are indicated by steeper slopes away from the horizontal. Also called **cumulative response record**.

**cumulative scale** see GUTTMAN SCALE.

**cumulative trauma disorder (CTD)** see REPETITIVE STRAIN INJURY.

**cuneate** *adj.* wedge-shaped. See CUNEUS.

**cuneate fasciculus** the lateral portion of either of the DORSAL COLUMNS of the spinal cord, which is wedge-shaped in transverse section. It is composed of ascending fibers that terminate in the NUCLEUS CUNEATUS of the medulla oblongata. Also called **fasciculus cuneatus**. See also GRACILE FASCICULUS.

**cuneate nucleus** see NUCLEUS CUNEATUS.

**cuneate tubercle** a swelling at the upper end of the CUNEATE FASCICULUS that contains the NUCLEUS CUNEATUS, which receives fibers from sensory nerves of the upper part of the body. The cuneate tubercle is the largest of the three nuclear swellings on the dorsal surface of the MEDULLA OBLONGATA; together with the GRACILE TUBERCLE, it forms the origin of the MEDIAL LEMNISCUS.

**cuneus** *n. (pl. cunei)* the wedge-shaped portion of the OCCIPITAL LOBE on the medial surface of each cerebral hemisphere above the posterior CALCARINE FISSURE.

**cunnilingus** *n.* stimulation of the external female genital organs (i.e., the clitoris and vulva) with the mouth or tongue. Also called **cunnilingus**; **cunnilingus**; **cunnilingus**; **cunnilingus**. See also OROGENITAL ACTIVITY.

**cupula** *n.* a gelatinous cap that forms part of the crista within the ampulla at the end of a SEMICIRCULAR CANAL.

**curare** *n.* any of various toxic plant extracts, especially extracts from plants of the genus *Strychnos*. Curare and related compounds exert their effects by blocking the activity of ACETYLCHOLINE at neuromuscular junctions, resulting in paralysis. Curare has a long ethnopharmacological history among indigenous peoples of the Amazon and Orinoco

river basins, where it was applied to the tips of arrows to paralyze prey. It was brought to Europe in the 16th century by explorers of South America, but it was not introduced into clinical use until the 1930s, when it was used to treat patients with tetanus and other spastic disorders. It has also been used in experiments showing that stimulus-response associations can be formed in paralyzed animals. The development of neuromuscular blocking agents with more predictable pharmacological profiles led to the abandonment of curare as a clinical agent.

**curative damages** a sum of money awarded to a charity on behalf of the plaintiff in a civil lawsuit. Conceptually similar to SPLIT RECOVERY, curative damages were first invoked in the United States in a 1995 Ohio case in which the parents of a son who died when his car collided with a train sued the railroad and then donated their monetary award to an organization promoting railroad crossing safety. The intent is thus to “cure” a problem by achieving a social good that offsets the harm done by the defendant, rather than to punish the defendant (as in PUNITIVE DAMAGES) or to make amends to the plaintiff (as in COMPENSATORY DAMAGES).

**curative factors** see THERAPEUTIC FACTORS.

**curiosity** *n.* the impulse or desire to investigate, observe, or gather information, particularly when the material is novel or interesting. This drive appears spontaneously in nonhuman animals and in young children, who use sensory exploration and motor manipulation to inspect, bite, handle, taste, or smell practically everything in the immediate environment. See EXPLORATORY DRIVE. —**curious** *adj.*

**current material** information about a client’s present feelings, interpersonal relationships, and life events that is used in understanding that person’s PSYCHODYNAMICS.

**curricular field experience** knowledge gained from on-the-job activity or observation in a specific area of professional interest or academic pursuit. It often fulfills partial requirements for a course of study or an academic course. See also COOPERATIVE TRAINING.

**curriculum** *n.* **1.** a set of required or prescribed courses of study, across many subjects or within a specific subject area, that a student must fulfill in order to meet the requirements of a particular degree or educational program. **2.** all of the coursework available at an educational institution or within a department of that institution. **3.** the total combined unit of coursework constituting a specialized major or minor area of emphasis, most often in a college setting.

**curriculum-based assessment** **1.** a complete, broad evaluation profile that reveals the degree of student mastery of a given defined body of content. The evaluation includes teacher-based testing (see CURRICULUM-BASED MEASUREMENT), classroom observation and interactions, standardized tests when relevant, and any other method of evaluation that yields data that can contribute to the overall assessment profile. **2.** data that help determine specific standards, such as those involved in individualized educational planning, direct performance referrals, and other forms of systematic planning relative to student progress.

**curriculum-based measurement** a narrow evaluation of student performance based on the material that has actually been taught, as opposed to CURRICULUM-BASED ASSESSMENTS, which are much broader and compare students to state, national, or other standard norms.

**curriculum development** the process of designing materials for instruction that will be used within a particular school district, school, or classroom. This process takes account of several important factors: The curriculum must not conflict with the standard practice adopted by similar programs of study; it must identify and articulate core concepts; and it must include an empirical base as a foundation for the actual learning content, thus facilitating teaching strategies, assessment, and accountability.

**curve fitting** any of various statistical techniques for obtaining a function that graphically represents a given set of data as closely as possible, with minimal error. A simple example of curve fitting occurs in LINEAR REGRESSION, where a straight line function is said to provide the closest approximation to the expected values of the outcome with a specific predictor and have the fewest discrepancies between the predicted values and the actual, observed values.

**curvilinear** *adj.* describing an association between variables that does not consistently follow an increasing or decreasing pattern but rather changes direction after a certain point (i.e., it involves a curve in the set of data points). For example, the relationship between anxiety and achievement often has a curvilinear pattern of increasing achievement with increasing anxiety (i.e., motivation to study) up to a certain point when there is so much anxiety that achievement tends to decrease. Thus, individuals who are not at all anxious and those who are extremely anxious would both be expected to have poor performance, whereas moderately anxious individuals would be expected to have reasonably high performance. See also NONLINEAR.

**curvilinear regression** see NONLINEAR REGRESSION.

**Cushing’s syndrome** a group of signs and symptoms related to a chronic overproduction of corticosteroid hormones, mainly CORTISOL, by the adrenal cortex. The condition occurs most commonly in women and is usually associated with a tumor of the adrenal or pituitary gland. Cushing’s syndrome is characterized by a “moon face” due to fat deposits, “buffalo hump” fat pads on the trunk, hypertension, glucose intolerance, and psychiatric disturbances. [Harvey W. Cushing (1869–1939), U.S. surgeon]

**-cusis** *suffix* see -ACUSIA.

**cuspid catastrophe model** see CATASTROPHE THEORY.

**custodial care** **1.** care rendered to a patient with prolonged mental or physical disability that includes assisted daily living (e.g., the regular feeding and washing of bedridden patients) but typically not mental health services themselves. **2.** confinement in such institutions as prisons and military correctional facilities that place restrictions on individuals’ liberty under the rules of law and that protect and monitor the individual or protect others from the individual’s violent and harmful tendencies or potential.

**custodial case** a court case concerning who should maintain legal custody of a child. See CHILD CUSTODY.

**custom** *n.* a traditional behavior, ritual, or action that is transmitted through the generations and is defined by a culture as appropriate or desirable for a particular situation. An example is the Chinese practice of maternal “confinement” or “doing-the-month” after childbirth, which involves formalized social support and recognition of the status of motherhood and has been presumed in anthropological literature to protect mothers of newborns from postpartum depression.

customary, prevailing, and reasonable fees

(**CPR fees**) a criterion invoked in reimbursing health care providers. It is determined by profiling the prevailing fees in a geographic area. Also called **usual, customary, and reasonable (UCR) fees**.

**customer relationship management (CRM)** the use by companies of integrated computer databases to anticipate the future needs of their customers on the basis of information about their past purchasing behaviors.

**cutaneous** *adj.* relating to or affecting the skin. For example, a cutaneous receptor, such as a **PACINIAN CORPUSCLE**, is a specialized cell in the skin that detects and responds to specific external stimuli.

**cutaneous experience** a sensation resulting from the stimulation of receptors in the skin. Such sensations include warmth, coldness, tickle, itch, pinprick (see **PRICK EXPERIENCE**), sharp pain, and dull pain. Also called **cutaneous sensation**; **dermal sensation**.

**cutaneous perception** perception of stimuli via activation of receptors in the skin. See **CUTANEOUS SENSE**.

**cutaneous perception of color** see **DERMO-OPTICAL PERCEPTION**.

**cutaneous-pupillary reflex** dilation of the pupil caused by scratching the skin of the cheek or chin. Also called **pupillary-skin reflex**.

**cutaneous rabbit illusion** the false perception that one has been tapped in the middle of the forearm after being tapped rapidly at the wrist and then the elbow: The taps seem to move along the forearm's length much like a hopping rabbit. This illusion is consistently evoked as long as the tapping span does not cross the midline of the body. Slight variations in the timing of taps on the skin can produce wide fluctuations in the taps' perceived locations, and evidence from **FUNCTIONAL MAGNETIC RESONANCE IMAGING** has revealed that the phantom sensations are associated with activity in the **PRIMARY SOMATOSENSORY AREA**, the same brain region initially activated by real tactile sensations. See also **SALTATION**. [first described in 1972 by U.S. psychologists Frank Arthur Geldard (1904–1984) and Carl Edwin Sherrick (1924–2005)]

**cutaneous receptive field** the area of skin being supplied by specific peripheral nerves and localized synaptic distribution in the central nervous system. See also **RECEPTIVE FIELD**.

**cutaneous receptor** a receptor organ in the skin that is responsible for **CUTANEOUS EXPERIENCE**. Cutaneous receptors include **PACINIAN CORPUSCLES**, **BASKET ENDINGS**, **MEISSNER'S CORPUSCLES**, and **MERKEL'S TACTILE DISKS**.

**cutaneous sense** any of the senses that are dependent on receptors in the skin sensitive to contact, pressure, vibration, temperature, or pain. Also called **skin sense**. See **PRESSURE SENSE**; **TEMPERATURE SENSE**; **TOUCH SENSE**.

**cutoff score** a value or criterion that is held to mark the lowest point at which a certain status or category is attained. For example, the cutoff score for passing a course is often 60%. Similarly, the cutoff score for being considered overweight is a body mass index of 25 to 29. Also called **cutoff point**; **criterion cutoff**.

**cutting** *n.* the act of cutting oneself, usually on the wrist or inside of the forearm. Often accompanied by a sense of heightened arousal and little sensation of pain, it occurs most frequently in the context of **BORDERLINE PERSONALITY**

**DISORDER** and **MAJOR DEPRESSIVE EPISODES**. See also **DELIBERATE SELF-HARM**.

**cutting off reflected failure (CORFing)** see **BASKING IN REFLECTED GLORY**.

**CV 1.** abbreviation for **CARDIOVASCULAR**. **2.** abbreviation for curriculum vitae.

**CVA** abbreviation for **CEREBROVASCULAR ACCIDENT**.

**CVLT** abbreviation for **CALIFORNIA VERBAL LEARNING TEST**.

**CVS** abbreviation for **CHORIONIC VILLUS SAMPLING**.

**CWB** abbreviation for **COUNTERPRODUCTIVE WORK BEHAVIOR**.

**cyanopsia** *n.* see **CHROMATOPSIA**.

**cyberbullying** *n.* see **BULLYING**.

**cybernetic epistemology** a study that addresses the philosophical issues of **EPISTEMOLOGY** in terms of cybernetics, often by making use of computational **KNOWLEDGE REPRESENTATION** and other techniques of **ARTIFICIAL INTELLIGENCE**. Grounding (how a system incorporates meaning into its problem solving), **SCAFFOLDING** (how a system uses its world as an essential component of its problem solving), and embodiment (how a system is defined as part of, and integrated into, an environment) are essential components of this study.

**cybernetics** *n.* the scientific study of communication and control as applied to machines and living organisms. It includes the study of self-regulation mechanisms, as in thermostats or feedback circuits in the nervous system, as well as transmission and self-correction of information in both computers and human communications. Cybernetics was formerly used to denote research in **ARTIFICIAL INTELLIGENCE**. [first defined in 1948 by U.S. mathematician Norbert Wiener (1894–1964)] —**cybernetic** *adj.*

**cybernetic theory** the study of how machines or other artificial systems can be made to regulate and guide themselves in the manner of living organisms. Its main application is the design of computer-controlled automated systems in manufacturing, transport, telecommunications, and other fields. The most widely used aspect of cybernetic theory is the self-regulatory model known as the **FEEDBACK LOOP**. [developed by U.S. mathematician Norbert Wiener (1894–1964)]

**cycle** *n.* a distinct pattern within a **TIME SERIES** of data for a specific variable. The pattern can be evenly spaced (e.g., as with seven-day weekly sales figures) or irregular (e.g., as with shifts in sales due to weather changes or economic factors).

**cycle of violence** a conceptual framework for understanding the persistence of battering relationships. The cycle has three phases: (a) a honeymoon phase, in which the batterer treats the partner lovingly; (b) a tension build-up phase, in which the batterer begins to display irritability and anger toward the partner; and (c) the violence phase, in which battering occurs. The phases are then proposed to recycle. As a battering relationship persists over time, the honeymoon phases shorten, and the tension-building and violence phases lengthen. Also called **cycle of abuse**. [proposed in 1979 by U.S. clinical and forensic psychologist Lenore E. Walker (1942– )]

**cyclic** *adj.* characterized by alternating phases. For example, an individual with **BIPOLAR DISORDER** involving alter-

nating depressive and manic episodes may be said to have a **cyclic illness**. Also called **cyclical**.

**cyclic adenosine monophosphate** see CYCLIC AMP.

**cyclical vomiting syndrome** recurrent, severe episodes of vomiting that may last for hours or days but are separated by intervals of completely normal health. Stress may be an important precipitant of cyclical vomiting, which occurs frequently in children.

**cyclic AMP (cAMP; cyclic adenosine monophosphate)** a SECOND MESSENGER that is involved in the activities of DOPAMINE, NOREPINEPHRINE, and SEROTONIN in transmitting signals at nerve synapses. Also called **adenosine 3',5'-monophosphate**.

**cyclic data** a set of information, especially a TIME SERIES, in which a recurring distinct pattern is identifiable. For example, a psychologist may note that patients tend to require more visits during regular time periods around holidays or the anniversary of the death of a loved one.

**cyclic GMP (cGMP; cyclic guanosine monophosphate)** a SECOND MESSENGER that is common in POSTSYNAPTIC neurons.

**cyclic nucleotide** a substance, such as CYCLIC AMP or CYCLIC GMP, that functions as a SECOND MESSENGER in cells to transduce an incoming signal, such as a hormone or neurotransmitter, into specific activity within the cell.

**cyclobenzaprine** *n.* a drug used for the treatment of acute skeletal muscle spasm (see MUSCLE RELAXANT). Structurally related to the tricyclic antidepressants, it has many features in common with them, including sedation and significant ANTICHOLINERGIC EFFECTS. Low doses are moderately effective in treating fibromyalgia. Because of its resemblance to the tricyclic drugs, cyclobenzaprine should not be taken concurrently with MONOAMINE OXIDASE INHIBITORS. U.S. trade name: **Flexeril**.

**cycloid psychosis** an atypical and controversial psychiatric disorder with several forms (e.g., CONFUSIONAL PSYCHOSIS). Symptoms, which resemble those of a SCHIZOAFFECTIVE DISORDER, follow a phasically recurring course and may change rapidly. [as modified in 1957 by German psychiatrist Karl Leonhard (1904–1988) from the original 1924 conceptualization of German neuropsychiatrist Karl Kleist (1879–1960)]

**cyclopean eye** a theoretical eye, located on the midline between the real eyes, that has access to the functions of both eyes and is used in descriptions of space perception and eye movements.

**cyclophoria** *n.* an imbalance of the extrinsic eye muscles in which one eye deviates when not focused on an object.

**cyclopia** *n.* a congenital disorder characterized by the merging of the two eye orbits into a single cavity that contains one eye. Cyclopia is associated with TRISOMY 13.

**cyclosporine (cyclosporin)** *n.* an immunosuppressive agent used primarily to prevent rejection of organ transplants but also used in the treatment of some autoimmune disorders, such as inflammatory bowel disease and severe atopic dermatitis. It is extensively metabolized by the CYTOCHROME P450 3A4 enzyme, and accordingly has numerous potential interactions with psychotropic drugs metabolized via the same enzyme (e.g., clonidine, nefazodone, St. John's wort). Depression, anxiety, and other psychological disturbances are rare side effects. U.S. trade name (among others): **Sandimmune**.

**cyclothymic disorder** a mood disorder characterized by periods of hypomanic symptoms and periods of depressive symptoms that occur over the course of at least 2 years. The number, duration, and severity of these symptoms do not meet the full criteria for a MAJOR DEPRESSIVE EPISODE or a HYPOMANIC EPISODE. It often is considered to be a mild BIPOLAR DISORDER. Also called **cyclothymia**.

**cyclotopia** *n.* see STRABISMUS.

**Cylert** *n.* a former trade name for PEMOLINE.

**CYP** abbreviation for CYTOCHROME P450.

**cyproheptadine** *n.* a drug that acts as an ANTIHISTAMINE and SEROTONIN ANTAGONIST and is used for the treatment of allergic symptoms (e.g., runny nose and watery eyes), loss of appetite, migraine headaches, and SEROTONIN SYNDROME. U.S. trade name (among others): **Periactin**.

**cystathionine synthetase deficiency** see HOMOCYSTINURIA.

**cystathioninuria** *n.* an inherited disorder of amino acid metabolism marked by deficiency of the enzyme cystathionase. The effects include vascular, skeletal, and ocular abnormalities. Intellectual disability occurs in less than 50% of cases, but is often accompanied by behavioral disorders. Also called **gamma-cystathionase deficiency**.

**cyto-** combining form cells.

**cytoarchitecture** *n.* the arrangement of cells in organs and tissues, particularly those in the NEOCORTEX. The different types of cortical cells are organized in CORTICAL LAYERS and zones. The number of layers varies in different brain areas, but a typical section of neocortex shows six distinct layers. Differences in cytoarchitecture have been used to divide the neocortex into 50 or more regions, many of which differ in function. The scientific study of the cytoarchitecture of an organ is called **cytoarchitectonics**. Also called **architectonic structure**. See also BRODMANN'S AREA. —**cytoarchitectural** *adj.*

**cytochrome oxidase** an enzyme that occurs in the inner membrane of MITOCHONDRIA and is important in aerobic respiration. "Blobs" of cytochrome oxidase activity have been demonstrated in the visual cortex.

**cytochrome oxidase blob (CO blob)** a small patch of neurons in the STRIATE CORTEX with greater than background levels of CYTOCHROME OXIDASE activity. Neurons in the CO blobs are sensitive to the wavelength of a visual stimulus. Also called **blob**.

**cytochrome P450 (CYP)** a group of proteins located in the smooth ENDOPLASMIC RETICULUM of liver and other cells that, in combination with other oxidative enzymes, is responsible for the metabolism of various chemicals, including many psychotropic drugs. Approximately 50 cytochrome P450 enzymes (so named because their reduced forms show a spectroscopic absorption peak at 450 nm) are currently identified as being active in humans, of which cytochromes belonging to the CYP2D6 subclass, CYP2C variants, and CYP3A4/5 subclass predominate. Cytochromes are mainly active in Phase I DRUG METABOLISM; by donating an atom of oxygen, they tend to make parent drugs more water soluble and therefore more easily excreted. Because numerous drugs are metabolized via the same cytochrome, these enzymes are important in DRUG INTERACTIONS. Numerous functional genetic polymorphisms of cytochrome P450 can now be genotyped clinically.

**cytogenetic map** a type of chromosome map that depicts and enumerates the pattern of differentially staining bands produced when the chromosomes are treated with certain cytological stains. These bands are correlated with the physical location of particular genes.

**cytokine** *n.* any of a variety of small proteins or peptides that are released by cells as signals to those or other cells. Each type stimulates a target cell that has a specific receptor for that cytokine. Cytokines mediate many IMMUNE RESPONSES, including proliferation and differentiation of lymphocytes, inflammation, allergies, and fever.

**cytology** *n.* the branch of biology that deals with the development, structure, and function of cells. —**cytological** *adj.* —**cytologist** *n.*

**cytomegalovirus** *n.* a virus of the herpes group. Infection usually causes no symptoms and no long-term health implications, but if acquired during pregnancy it may have

serious consequences for the fetus, such as MICROCEPHALY, jaundice, liver and spleen infection, pneumonia, deafness, PSYCHOMOTOR RETARDATION, and intellectual disability.

**Cytomel** *n.* a trade name for LIOTHYRONINE.

**cytoplasm** *n.* the contents of a cell excluding the NUCLEUS. —**cytoplasmic** *adj.*

**cytosine** (symbol: C) *n.* a pyrimidine compound present in the nucleotides of living organisms. It is one of the four bases in DNA and RNA constituting the GENETIC CODE, the others being adenine, guanine, and thymine or uracil.

**cytoskeleton** *n.* an internal framework or “scaffolding” present in all CELLS. Composed of a network of filaments and MICROTUBULES, it maintains the cell shape and plays an important role in cell movement, growth, division, and differentiation, as well as in intracellular transport (e.g., the movement of VESICLES).

# Dd

**d 1.** see COHEN'S D. **2.** see GLASS'S D.

**D 1.** symbol for DIFFERENCE SCORE. **2.** see COOK'S D.

**d'** symbol for D PRIME.

**DA 1.** abbreviation for DEVELOPMENTAL AGE. **2.** abbreviation for DOPAMINE.

**DABS** abbreviation for DIAGNOSTIC ADAPTIVE BEHAVIOR SCALE.

**dACC** abbreviation for dorsal ANTERIOR CINGULATE CORTEX.

**Da Costa's syndrome** an anxiety state identified in soldiers during the American Civil War (1861–1865) in which heart palpitations were the most prominent symptom. It is now recognized as a form of PANIC DISORDER observed in soldiers during the stress of combat and marked by fatigue, heart palpitations, chest pain, and breathing difficulty. See also COMBAT STRESS REACTION; EFFORT SYNDROME. [Jacob Méndes **Da Costa** (1833–1900), U.S. surgeon]

**D'Acosta's syndrome** see ALTITUDE SICKNESS. [José de **Acosta** (1539–1600), Spanish geographer]

**dactylology** *n.* the communication of ideas by means of signs formed with the fingers. See FINGERSPELLING; SIGN LANGUAGE.

**DAF** abbreviation for DELAYED AUDITORY FEEDBACK.

**DAH Test** abbreviation for Machover Draw-a-House Test. See MACHOVER DRAW-A-PERSON TEST.

**DAI** abbreviation for DIFFUSE AXONAL INJURY.

**daily-living aid** see ASSISTIVE TECHNOLOGY.

**daily stressor** any normative, day-to-day event (e.g., demanding work, financial pressure, family conflict) that can influence physical and mental health and pose a risk to well-being.

**DAISY** acronym for Digital Accessible Information SYstem. See TALKING BOOK.

**Dale's law** the concept, now known to be incorrect for many neurons, that each terminal button (see AXON) of a neuron contains only one kind of neurotransmitter. Also called **Dale's principle**. [Henry Hallet **Dale** (1875–1968), British neurophysiologist]

**Dallenbach stimulator** a device for providing controlled thermal stimulation to the skin. [Karl M. DALLENBACH]

**Dalmane** *n.* a trade name for FLURAZEPAM.

**DALYs** acronym for DISABILITY ADJUSTED LIFE YEARS.

**damage-risk criteria (DRC)** the levels and durations of sound exposures that are likely to cause permanent hearing loss. For example, according to the Occupational Safety and Health Administration (OSHA) standards, a continuous 8-hour noise exposure of less than 85 dB is acceptable, as is a continuous half-hour exposure of less than 110 dB. See SOUND-LEVEL METER.

**damped regression** see RIDGE REGRESSION.

**damping** *n.* a diminution of the amplitude of vibrations, often as a result of absorption of energy (e.g., electricity, sound) by the surrounding medium. In speech and singing, it refers to the tension and elongation of the vocal cords beyond the normal maximal level in an attempt to reach still higher tones on the ascending scale.

**dance therapy** the use of various forms of rhythmic movement—classical, modern, folk, or ballroom dancing; exercises to music; and the like—as a therapeutic technique to help individuals achieve greater body awareness and social interaction and enhance their psychological and physical functioning. See also MOVEMENT THERAPY. [pioneered in 1942 by U.S. dance professional Marian Chace (1896–1970)]

**dancing language** see BEE COMMUNICATION.

**dancing madness** see CHOREOMANIA.

**dancing mania** see CHOREOMANIA.

**dancing mouse** a strain of mice displaying behavior that resembles dancing. Mice of this strain have a genetic defect that causes degeneration of the HAIR CELLS of the inner ear. This degeneration produces deafness and impaired functioning of the VESTIBULAR SYSTEM of the ear, which is thought to cause the dancelike behavior.

**Dandy–Walker syndrome** a congenital anomaly involving a large cyst in the posterior region of the fetal brain. The syndrome is characterized by (a) blockage of the fourth ventricle, resulting in increased volume of brain fluid (see HYDROCEPHALUS), and (b) complete or partial agenesis (failure to develop) of the middle portion of the cerebellum (the vermis) because of its displacement by the cyst. [Walter **Dandy** (1886–1946), U.S. neurosurgeon; Arthur Earl **Walker** (1907–1995), U.S. neurologist]

**dangerousness** *n.* the state in which individuals become likely to do harm either to themselves or to others, representing a threat to their own or other people's safety. —**dangerous** *adj.*

**dantrolene** *n.* a MUSCLE RELAXANT whose primary action is directly on skeletal muscles; it also indirectly affects the central nervous system as a secondary action. Dantrolene is used in the treatment of muscular spasms associated with spinal cord injury, stroke, cerebral palsy, and multiple sclerosis, as well as with NEUROLEPTIC MALIGNANT SYNDROME. U.S. trade name: **Dantrium**.

**Daoism** *n.* see TAOISM.

**DAP Test** abbreviation for MACHOVER DRAW-A-PERSON TEST.

**D.A.R.E.** acronym for Drug Abuse Resistance Education: a program through which police officers teach kindergarten through 12th grade students how to say no to drugs, including how to defend against peer pressure to use drugs.

**dark adaptation** the ability of the eye to adjust to conditions of low illumination by means of an increased sensitivity to light. The bulk of the process takes 30 minutes and

involves expansion of the pupils and retinal alterations, specifically the regeneration of RHODOPSIN and IODOPSIN. See also ROD–CONE BREAK. Compare LIGHT ADAPTATION.

**dark-adaptation curve** a graph of light sensitivity over time for an individual asked to detect dim flashes in total darkness. See also ROD–CONE BREAK.

**dark cell** see TYPE I CELL.

**dark light** see RETINAL LIGHT.

**darkness fear** see FEAR OF DARKNESS.

**Darvocet** *n.* a former trade name for the analgesic combination PROPOXYPHENE and ACETAMINOPHEN.

**Darvon** *n.* a former trade name for PROPOXYPHENE.

**Darwinian algorithm** in EVOLUTIONARY PSYCHOLOGY, an innate domain-specific cognitive program that evolved to accomplish specific adaptive functions. An example is the cognitive mechanism for face recognition. [Charles DARWIN]

**Darwinian fitness** the relative success of a particular organism or genotype in producing viable offspring, which is determined by NATURAL SELECTION. [Charles DARWIN]

**Darwinian reflex** a grasping response shown by newborn infants. See GRASP REFLEX. [Charles DARWIN]

**Darwinism** *n.* the theory of evolution by NATURAL SELECTION, as originally proposed by British naturalists Charles DARWIN and Alfred Russel Wallace (1823–1913). In the 20th century, it was modified, as **neo-Darwinism**, to account for genetic mechanisms of heredity, particularly the sources of genetic variation upon which natural selection works. See also SURVIVAL OF THE FITTEST.

**DAS** **1.** abbreviation for DEVELOPMENTAL APRAXIA OF SPEECH. **2.** abbreviation for DIFFERENTIAL ABILITY SCALES.

**Dasein** *n.* in the thought of German philosopher Martin Heidegger (1889–1976), the particular kind of being manifest in humans. It is their being as *Dasein* that allows humans access to the larger question of being in general, since access to the world is always through what their own being makes possible. The term is commonly used in EXISTENTIAL PSYCHOLOGY and related therapeutic approaches. See BEING-IN-THE-WORLD. [German, literally: “being there”]

**Dasein analysis** a method of EXISTENTIAL PSYCHOTHERAPY emphasizing the need to recognize not only one’s BEING-IN-THE-WORLD but also what one can become (see DASEIN). Through examination of such concepts as intentionality and intuition, *Dasein* analysis attempts to help clients to accept themselves and realize their potential rather than adapt themselves to others’ expectations. [developed by Swiss psychiatrist Medard Boss (1903–1990)]

**DAST** abbreviation for DRUG ABUSE SCREENING TEST.

**DAT** **1.** abbreviation for DEMENTIA OF THE ALZHEIMER’S TYPE. **2.** abbreviation for DIFFERENTIAL ABILITY TESTS.

**data** *pl. n. (sing. datum)* observations or measurements, usually quantified and obtained in the course of research. For example, a researcher may be interested in collecting data on health-related behaviors such as frequency and amount of exercise, number of calories consumed per day, number of cigarettes smoked per day, number of alcoholic drinks per day, and so forth.

**data analysis** the process of applying graphical, statistical, or quantitative techniques to a set of observations or

measurements in order to summarize it or to find general patterns. For example, a very basic data analysis would involve calculating DESCRIPTIVE STATISTICS (e.g., MEAN, MEDIAN, MODE, STANDARD DEVIATION) and possibly graphing the observations with a HISTOGRAM or BAR GRAPH.

**database** *n.* a large, structured collection of information stored in retrievable form, usually electronically. For example, the information that researchers collect from their studies is usually kept in a computer database to allow for easy access, manipulation, and analysis in testing relevant HYPOTHESES. In addition to their use as a research tool, databases are used in various sectors (e.g., health care) for record-keeping purposes (see PROBLEM-ORIENTED RECORD).

**data collection** a systematic gathering of information for research or practical purposes. Examples include mail surveys, interviews, laboratory experiments, and psychological testing.

**data dredging** the inappropriate practice of searching through large files of information to try to confirm a preconceived HYPOTHESIS or belief without an adequate design that controls for possible CONFOUNDS or alternate hypotheses. Data dredging may involve selecting which parts of a large data set to retain to get specific, desired results. An extreme example would be if a marketing researcher found that 91 out of 100 people surveyed were opposed to a certain product and then chose to focus only on the last 10 people in order to state that 9 out of 10 people prefer this product, when in fact only 9 out of 100 preferred it. See DATA SNOOPING.

**data-driven processing** see BOTTOM-UP PROCESSING.

**data mining** the automated (computerized) examination of a large set of observations or measurements, particularly as collected in a complex database, in order to discover patterns, correlations, and other regularities that can be used for predictive purposes. Although a relatively new discipline, data mining has become a widely utilized technique within commercial and scientific research. For example, retailers often use data mining to predict the future buying trends of customers or to design targeted marketing strategies, whereas clinicians may use it to determine variables predicting hospitalization for psychological disorders. Data mining incorporates methods from statistics, logic, and artificial intelligence.

**data point** a specific piece of information derived from a larger set of data. A data point is often formed by the intersection of two other pieces of information, as in the intersection of a person’s score on one variable with his or her score on a second variable in a SCATTERPLOT. For example, 10 people could be asked their average number of hours of sleep per night and the number of colds they tend to have in a year. Then, the number of sleep hours could be recorded along the horizontal *x*-axis and the number of colds per year recorded along the vertical *y*-axis, resulting in 10 separate data points.

**data pooling** combining the information from two or more studies or substudies, for example, by averaging STANDARD DEVIATIONS or VARIANCES across groups to form a single value for use in a T TEST or ANALYSIS OF VARIANCE. Although it can be helpful to synthesize information in this way, data pooling can sometimes lead to misleading conclusions, as in SIMPSON’S PARADOX.

**data reduction** the process of reducing a set of measurements or variables into a smaller, more manageable, more reliable, or better theoretically justified set or form.

For example, a researcher may conduct a **FACTOR ANALYSIS** on a set of 50 items on well-being and satisfaction to determine whether the information could be summarized more efficiently on underlying dimensions of relationship satisfaction, degree of meaning in life, job satisfaction, and general health.

**data screening** a procedure in which one subjects a large set of information to preliminary review for any of a variety of reasons: to check for accuracy, to identify unusual patterns (e.g., **OUTLIERS** that are very different from the information from most participants) or any missing information, to determine whether the information would meet a statistical **ASSUMPTION** (e.g., of normality), to reduce the data to more manageable dimensions, and so forth.

**data set** a collection of individual but related observations or measurements considered as a single entity. For example, the entire range of scores obtained from a class of students taking a particular test would constitute a data set.

**data snooping** **1.** looking for unpredicted, post hoc effects in a body of data. **2.** examining data before an experiment has been completed, which can sometimes result in erroneous or misleading conclusions. See also **DATA DREDGING**.

**data types** in the application of **FACTOR ANALYSIS** to personality, various types of information collected on individuals and classified according to the information source. For example, **Q DATA** are collected on individuals from self-report questionnaires and inventories, and **T DATA** are acquired about individuals from the results of a formal scientific measurement or objective test. Other types include **L DATA**, or information gathered from individual life histories, and **O DATA**, or information gathered about individuals from other people (e.g., family members). [first specified by Raymond B. CATTELL]

**date rape** sexual assault by an acquaintance, date, or other person known to the victim, often involving alcohol or **DATE-RAPE DRUGS** that may hinder the victim's ability to withhold consent. Also called **acquaintance rape**.

**date-rape drug** a common colloquial term for a drug that is surreptitiously administered to impair consciousness or memory for the purpose of sexual exploitation of the victim. Such drugs are typically introduced into alcoholic beverages in social settings. Date-rape drugs include barbiturates, high-potency benzodiazepines (**FLUNITRAZEPAM**, **TRIAZOLAM**), **KETAMINE**, and the illicit substance **GHB** (gamma-hydroxybutyrate). The most common slang for these drugs is **roofies**, from Rohypnol, the trade name for flunitrazepam. The U.S. Congress passed the Drug-Induced Rape Prevention and Punishment Act in 1996, making it a federal crime to give an unaware person a controlled substance with the intent of committing violence against him or her.

**dative** *n.* a **CASE** of nouns, pronouns, and noun phrases that identifies the indirect **OBJECT** of a verb. In modern English, unlike more inflected languages, the dative case affects only a few personal pronouns, when it is indistinguishable from the **ACCUSATIVE**. Compare **GENITIVE**; **NOMINATIVE**.

**Daubert test** a test used in U.S. federal courts, in place of the earlier **FRYE TEST**, to determine if expert scientific testimony is admissible under Rule 702 of the Federal Rules of Evidence. Established as a standard by the U.S. Supreme Court in the 1993 case *Daubert v. Merrell Dow Pharmaceuti-*

*cals Inc.*, the Daubert test generally takes place before a trial begins, during a **Daubert hearing** at which judges evaluate whether the research presented in the testimony is both relevant and reliable, considering such factors as its testability, error rate, evidence of peer review, and general acceptance within the scientific community.

**Dauerschlaf** *n.* a type of therapy in which prolonged sleep is induced with drugs (e.g., barbiturates). *Dauerschlaf* (German, "perpetual sleep") has been used in the treatment of substance dependence, status epilepticus, and acute psychotic episodes. Its efficacy and use have been the subject of extreme controversy, and it is now rarely encountered clinically.

**day blindness** see **HEMERALOPIA**.

**day camp** a facility that provides recreational, educational, or therapeutic services to children on a short-term, day-by-day basis as opposed to long-term camps that require overnight accommodation.

**day care center** **1.** see **CHILD CARE FACILITIES**. **2.** a non-residential facility that provides health and social services in a community setting for adults who are unable to perform many ordinary tasks without supervision or assistance. See **ADULT DAY CARE**.

**daydream** *n.* a waking fantasy, or reverie, in which wishes, expectations, and other potentialities are played out in imagination. Part of the stream of thoughts and images that occupy most of a person's waking hours, daydreams may be unbidden and apparently purposeless or simply fanciful thoughts, whether spontaneous or intentional. Researchers have identified at least three ways in which individuals' daydreaming styles differ: positive-constructive daydreaming, guilty and fearful daydreaming, and poor attentional control. These styles are posited to reflect the daydreamer's overall emotion and personality tendencies. Among the important positive functions that daydreams may serve are the release of strong affect, the gaining of self-insight when reviewing past experiences or rehearsing for future situations, the generation of creative solutions, and the production of greater empathy for others.

**day habilitation** a **HOME AND COMMUNITY-BASED SERVICE** provided for a person with an intellectual or developmental disability. This service provides productive daily schedules of activity based on individualized support planning, including clinical services, companion services, socialization, recreation, vocational development, and lifestyle enrichment. In practice, these services may be delivered on a person-by-person basis or in small groups in any location during daytime hours.

**day hospital** a nonresidential facility where individuals with mental disorders receive treatment and support services during the day and return to their homes at night. Specific service offerings vary across facilities but generally include psychological evaluation, individual and group psychotherapy, social and occupational rehabilitation, and **SOMATIC THERAPY**. Staff members are multidisciplinary, comprising psychiatrists, psychologists, social workers, vocational counselors, and others.

**daylight vision** see **PHOTOPIC VISION**.

**daymare** *n.* an attack of acute anxiety, distress, or terror that is similar to a **NIGHTMARE** but occurs in a period of wakefulness and is precipitated by waking-state fantasies.

**day treatment** a program of coordinated interdisciplinary



nary assessment, treatment, and rehabilitation services provided by professionals and paraprofessionals for people with disabilities, mental or physical disorders, or substance abuse problems, usually at a single location for 6 or more hours during the day. Services also address skill and vocational development and may include adjustment programs or SHELTERED WORKSHOPS.

**dB** symbol for DECIBEL.

**DBI** abbreviation for DIAZEPAM-BINDING INHIBITOR.

**DBS** abbreviation for DEEP BRAIN STIMULATION.

**DBT** abbreviation for DIALECTICAL BEHAVIOR THERAPY.

**dc (d/c)** in pharmacology, abbreviation for discontinue.

**DC amplifier** a direct-current device used to amplify the POTENTIAL difference across a neural membrane so that the cortical current can be recorded and studied.

**D-cognition** *n.* see BEING COGNITION.

**DDAVP** *n.* a trade name for DESMOPRESSIN.

**DDE** abbreviation for doctrine of double effect. See PRINCIPLE OF DOUBLE EFFECT.

**DEA** abbreviation for U.S. DRUG ENFORCEMENT ADMINISTRATION.

**deadly catatonia** see LETHAL CATATONIA.

**deadly nightshade** see BELLADONNA ALKALOID.

**deaf-blind** *adj.* lacking or having severely compromised vision and hearing concomitantly. People with deaf-blind impairment encounter significant—sometimes lifelong—challenges in communication, development, and education. Solutions involving tactile devices are often appropriate (e.g., BRAILLE). There are numerous known causes, including meningitis, congenital rubella syndrome, and Usher syndrome. —**deaf-blindness** *n.*

**deafferentation** *n.* the cutting or removal of sensory neurons or axons that convey information toward a particular nervous system structure (e.g., the olfactory bulb).

**deaf hearing** the capacity of some people with total deafness to detect and localize sounds without any conscious awareness of doing so. Studies suggest that this capacity is involuntary and is not accompanied by any ability to identify or interpret sounds. It has been proposed that such individuals may have a heightened sense of feeling that enables them to respond to the vibrations in sound waves. See also BLINDSIGHT; NUMBSENSE.

**deaf-mute** *n.* an obsolescent and pejorative name for an individual who cannot speak, or chooses not to speak, because of congenital or early-acquired profound deafness.

**deaf mutism–retinal degeneration syndrome** see DIALLINAS–AMALRIC SYNDROME.

**deafness** *n.* the partial or complete absence or loss of the sense of hearing. The condition may be hereditary or acquired by injury or disease at any stage of life, including in utero. The major kinds are CONDUCTION DEAFNESS, due to a disruption in sound vibrations before they reach the nerve endings of the inner ear, and SENSORINEURAL DEAFNESS, caused by a failure of the nerves or brain centers associated with the sense of hearing to transmit or interpret properly the impulses from the inner ear. Some individuals experience both conduction and sensorineural deafness, a form called **mixed deafness**. See also ADVENTI-

TIUS DEAFNESS; CENTRAL DEAFNESS; CONGENITAL DEAFNESS; CORTICAL DEAFNESS; EXPOSURE DEAFNESS; PERCEPTION DEAFNESS. —**deaf** *adj.*

**death** *n.* **1.** the permanent cessation of physical and mental processes in an organism. In the United States in the early 1980s, the American Medical Association and the American Bar Association drafted and approved the Uniform Determination of Death Act, in which death is defined as either the irreversible cessation of core physiological functioning (i.e., spontaneous circulatory and respiratory functions) or the irreversible loss of cerebral functioning (i.e., BRAIN DEATH). Given the emergence of sophisticated technologies for cardiopulmonary support, brain death is more often considered the essential determining factor, particularly within the legal profession. See also ASSISTED DEATH; DYING PROCESS; THANATOLOGY. **2.** the degeneration or disintegration of a biological cell. See NECROSIS; NEURONAL CELL DEATH; PROGRAMMED CELL DEATH.

**death anxiety** emotional distress and insecurity aroused by reminders of mortality, including one's own memories and thoughts of death (see also ONTOLOGICAL CONFRONTATION). Classical psychoanalytic theory asserted that the unconscious cannot believe in its own death, therefore THANATOPHOBIA was a disguise for some deeper fear. Existentialists later proposed that death anxiety is at the root of all fears, though often disguised. A mass of research using self-report scales (see DEATH-ANXIETY SCALES) suggests that most people have a low to moderate level of death anxiety. See also EDGE THEORY; TERROR MANAGEMENT THEORY.

**death-anxiety scales** questionnaires that yield scores for the level of self-reported concern about death. Some scales distinguish between several types of concern, such as fear of pain or fear of nonbeing. See also THANATOPHOBIA.

**deathbed escorts and visions** auditory or visual hallucinations (or both) experienced near the end of life in which the “visitors” make themselves known only to the dying person. Sometimes the person describes the interaction or can be heard speaking with the apparitions; sometimes the event can only be inferred from observing the person's nonverbal behavior. The visitors, when known, are usually deceased family members or spiritual beings in the ancient tradition of psychopomps (deathbed escorts to accompany the soul on its journey). See also NEAR-DEATH EXPERIENCE.

**death concepts** cognitive constructions of linear time, finality, certainty, irreversibility, universality, and personal vulnerability, which cohere with other elements to form a general understanding of mortality. The infant's fear of separation is seen as an early precursor of these abstract and differentiated ideas, which usually do not develop until early adolescence. Even then, fantasy often continues to contend with reality in the acceptance of the finality and inevitability of death.

**death education** learning activities or programs designed to educate people about death, dying, coping with grief, and bereavement. Death education is typically provided by certified thanatologists from a wide array of mental and medical health personnel, educators, clergy, and volunteers. Individual or group sessions provide information, discussion, guided experiences, and exploration of attitudes and feelings.

**death feigning** the act of becoming immobile, or “playing dead,” when threatened. Also called **playing possum**;

**tonic immobility.** See ANIMAL DEFENSIVE BEHAVIOR; IMMOBILITY.

**death gene** a gene that is expressed only when a cell becomes committed to PROGRAMMED CELL DEATH.

**death instinct** in psychoanalytic theory, a drive whose aim is the reduction of psychical tension to the lowest possible point, that is, death. It is first directed inward as a self-destructive tendency and is later turned outward in the form of the AGGRESSIVE INSTINCT. In the DUAL INSTINCT THEORY of Sigmund FREUD, the death instinct, or THANATOS, stands opposed to the LIFE INSTINCT, or EROS, and is believed to be the drive underlying such behaviors as aggressiveness, sadism, and masochism. See also NIRVANA PRINCIPLE.

**death phobia** see THANATOPHOBIA.

**death-qualified jury** a jury in a criminal case whose members have been questioned under oath by either judges or attorneys and deemed to be capable of imposing the death penalty. See also WAINWRIGHT V. WITT; WITHERSPOON EXCLUDABLES.

**death rite** a culture-bound ceremony, ritual, or other religious or customary practice associated with dying and the dead, such as a funeral rite. See RITE OF PASSAGE.

**death system** the dynamic patterns through which a society mediates its relationship with mortality in order to remain viable as a culture and meet the needs of the individual. All cultures have a death system whose primary functions are warning and prediction, prevention, care for the dying, disposing of the dead, social consolidation after death, killing, and making sense of death. How these functions are performed is significantly influenced by a number of factors, including economic priorities, religious values, traditions of discrimination and enmity, and level of technological development. [first described in 1977 by Robert J. KASTENBAUM]

**death taboo (death tabu)** the belief that death is so dangerous and disturbing a subject that one should not only avoid contact with the dead, the dying, and the recently bereaved but also refrain from talking or even thinking about it. In 1959, U.S. psychologist Herman Feifel (1915–2003) proposed that the United States had such a denying and avoiding attitude toward death that it could be compared with the rigid and extreme patterns observed by anthropologists in many band-and-village societies.

**death wish** **1.** an unconscious desire for one's own death, as manifested in self-destructive or dangerous behaviors. **2.** in psychoanalytic theory, a conscious or unconscious wish that another person, particularly a parent, will die. According to Sigmund FREUD, such wishes are a major source of guilt, desire for self-punishment, and depression. See also DEATH INSTINCT.

**deautomatization hypothesis** the idea that mystical experience results from focused attention, as through meditation and similar techniques, that brings about the conscious, voluntary undoing of automatic or habitual processes associated with organizing, limiting, selecting, and interpreting perceptual stimuli. See AUTOMATICITY. [proposed in 1966 by U.S. psychiatrist Arthur J. Deikman (1929–2013)]

**debilitative anxiety** a level of anxiety that an individual (e.g., an actor, an athlete) perceives as interfering with performance. Examples include being psyched out (see PSYCHING OUT) or “out of the zone.”

**Debré–Sémélaigne syndrome** see KOCHER–DEBRÉ–SÉMÉLAIGNE SYNDROME.

**debriefing** *n.* the process of giving participants in a completed research project a fuller explanation of the study in which they participated than was possible before or during the research.

**debt counseling** counseling specifically aimed at helping individuals with financial problems, providing assistance with or advice about budgeting, credit-card usage, debt consolidation, and money management. Debt counseling may be provided by counselors or therapists as part of a larger process of addressing various problems in an individual's life, or it may be carried out by financial planners and accountants as a discrete effort.

**decadence** *n.* **1.** a presumed deterioration of a culture, society, or civilization because of a general collapse of moral character and traditional values. **2.** generally, a loss or diminution of excellence or some other quality. **3.** (typically capitalized) loosely, an artistic movement of the mid- and late 19th century, particularly in literature and the visual arts, that valued extreme aesthetic refinement, the superiority of artifice (i.e., human invention) over nature, and innovative and atypical experiential perspectives and modes of being. Also called **Decadent movement**.

**Decadron** *n.* a trade name for DEXAMETHASONE.

**décalage** *n.* in PIAGETIAN THEORY, the invariant order in which cognitive accomplishments develop. See HORIZONTAL DÉCALAGE; VERTICAL DÉCALAGE. [French, “interval,” “shift”]

**decarboxylase** *n.* an enzyme that catalyzes the removal of a carboxyl group (–COOH) from a compound.

**decarceration** *n.* **1.** the process of removing offenders from correctional facilities, often to community facilities. **2.** see DEINSTITUTIONALIZATION.

**decatastrophizing** *n.* a technique, used in treating people with irrational or exaggerated fears, that explores the reality of a feared stimulus as a way of diminishing its imagined or anticipated danger.

**decathexis** *n.* in psychoanalytic theory, the withdrawal of LIBIDO from objects (i.e., other people) in the external world. Compare CATHEXIS.

**decay theory** the theory that learned material leaves in the brain a trace or impression that autonomously recedes and disappears unless the material is practiced and used. Decay theory is a theory of forgetting. Also called **trace-decay theory**.

**deceiver's distrust** the tendency of people who engage in acts of deception to perceive the recipients of those lies as untrustworthy and dishonest. Deceiver's distrust presumably reflects the assumption that interaction partners are similar to oneself; thus, one's own deceitfulness leads to the inference that the other is, has been, or will be similarly deceitful. By assuming that others are also untruthful, deceivers can feel less guilt about having lied to them.

**deceleration** *n.* a decrease in speed of movement or rate of change. For example, a medical researcher may be interested in the deceleration of an illness or symptom as evidence that a treatment is working effectively. Compare ACCELERATION.

**decentering** *n.* **1.** any of a variety of techniques aimed at changing one's centered thinking (i.e., focus on only one salient feature at a time, to the total exclusion of other im-

portant characteristics) to openminded thinking. **2.** dissolution of unity between self and identity. **3.** see DECENTRATION. —**decenter** *vb.*

**decentralization** *n.* the trend to relocate patients with chronic mental illness from long-term institutionalization, usually at government hospitals, to outpatient care in community-based residential facilities. —**decentralize** *vb.*

**decentralized organization** an ORGANIZATIONAL STRUCTURE in which decision-making authority is spread throughout the organization rather than being reserved for those at the top of the hierarchy. Compare CENTRALIZED ORGANIZATION.

**decentration** *n.* in PIAGETIAN THEORY, the gradual progression of a child away from egocentrism toward a reality shared with others. Occurring during the CONCRETE OPERATIONAL STAGE, decentration includes understanding how others perceive the world, knowing in what ways one's own perceptions differ, and recognizing that people have motivations and feelings different from one's own. It can also be extended to the ability to consider many aspects of a situation, problem, or object, as reflected, for example, in the child's grasp of the concept of CONSERVATION. Also called **decentering**. Compare CENTRATION. —**decenter** *vb.*

**deception** *n.* **1.** any distortion of or withholding of fact with the purpose of misleading others. For example, a researcher who has not disclosed the true purpose of an experiment to a participant has engaged in deception. **2.** in nonhuman animal behavior, the provision of false information that results in the individual obtaining increased resources at the expense of others. Some animals give false alarm calls that disperse competitors and thus gain more food (see DISHONEST SIGNAL). Another form of deception is exhibited when certain animals engage in aggressive displays that make them appear larger than they really are. —**deceive** *vb.* —**deceptive** *adj.*

**deception clue** a behavioral indication that an individual is not telling the truth. Deception clues include inconsistencies between voluntary and involuntary behavior and unusual or exaggerated physiological or expressive responses to knowledge that only a guilty person possesses.

**deception research** any study in which participants are deliberately misled or not informed about the purpose of the investigation in order to avoid the possibility that their responses may be given to meet the perceived expectations of researchers. For example, a social psychologist may use a **deception experiment** in which participants are randomly assigned to either of two scenarios that each describe job applicants in identical terms except that one is misleadingly said to be a male and the other a female. The researcher may then assess any gender bias in the participants by asking how likely the applicant is to be hired, instead of directly asking participants about their attitudes toward gender. See ACTIVE DECEPTION; DOUBLE DECEPTION; PASSIVE DECEPTION.

**deceptive advertising** advertising that leads to incorrect inferences on the part of consumers, for example, that taking a particular food supplement will help individuals lose weight.

**decerebrate rigidity** rigidity of the body that occurs when the brainstem is functionally separated from the cerebral cortex, typically as a result of a brain lesion or vascular disorder. It is marked by bilateral rigid extension,

adduction, and hyperpronation of the legs and arms. Also called **decerebrate posturing**; **extensor posturing**.

**decerebration** *n.* loss of the ability to discriminate, learn, and control movements as a result of transection of the brainstem, surgical removal of the cerebrum, or cutting off of the cerebral blood supply. **Decerebrate** (*adj.*) describes a human or nonhuman animal that has experienced decerebration; such an individual is also known as a **decerebrate** (*n.*).

**decibel** (symbol: dB) *n.* a logarithmic unit used to express the ratio of acoustic or electric power (intensity). An increase of 1 bel is a 10-fold increase in intensity; a decibel is one tenth of a bel and is the more commonly used unit, partly because a 1 dB change in intensity is just detectable (approximately and under laboratory conditions). The SOUND INTENSITY (the numerator of the intensity ratio) or **sound level** is usually specified in **decibels sound-pressure level** (dB SPL). The reference intensity (the denominator of the intensity ratio) for dB SPL is  $10^{-12} \text{W/m}^2$  and corresponds to a SOUND PRESSURE of 20  $\mu\text{Pa}$  (micropascal). A sound presented at the reference intensity has a level of 0 dB SPL and is close to the absolute threshold for a 1 kHz tone. Often SPL is omitted but is implied from the context: A "60 dB sound" usually means 60 dB SPL. The decibel, because it is a logarithmic measure, has caused much confusion. For example, decibels do not add: Two unrelated 60 dB SPL sounds when sounded simultaneously produce a 63 dB SPL sound, not a 120 dB SPL sound.

**decile** *n.* one of a series of values that divide a statistical distribution into 10 equal-sized parts. Thus, the first decile is the value below which lie 10% of cases, the second decile is the value below which lie 20% of cases, and so forth.

**decisional balance** a method of assessing the positive and negative consequences, for oneself and others, of selecting a new behavior. Decisional balance is frequently used in weighing the consequences of exercise behavior. For example, by beginning a regular early-morning exercise program, an individual would lose weight (a positive consequence), would not be available for early-morning meetings at work (a negative consequence), would gain greater respect from others (e.g., family, friends) for getting in shape (a positive consequence), and would incur costs in terms of gym fees and workout clothes (a negative consequence).

**decisional competence** the ability of a defendant to make the decisions normally faced in a criminal defense (e.g., deciding among various plea agreements). See also COMPETENCY EVALUATION; COMPETENCY TO STAND TRIAL; DUSKY STANDARD.

**decision making** the cognitive process of choosing between two or more alternatives, ranging from the relatively clear cut (e.g., ordering a meal at a restaurant) to the complex (e.g., selecting a mate). Psychologists have adopted two converging strategies to understand decision making: (a) statistical analysis of multiple decisions involving complex tasks and (b) experimental manipulation of simple decisions, looking at the elements that recur within these decisions.

**decision-making model of counseling** an approach that envisions counseling as a process with three stages: the problem definition phase, the work phase, and the action phase. The problem definition phase considers alternative definitions of the client's presenting problem and encourages him or her to commit to one of these. Dur-

ing the work phase, the counselor helps the client to look at the problem from different perspectives and to consider solutions to it. In the action phase, the client chooses a solution and tests it in the home environment.

**decision–rededecision method** a technique used in TRANSACTIONAL ANALYSIS that allows clients to reexperience “decision moments” from their childhood (e.g., internalized parental injunctions such as “Don’t be you,” “Don’t feel”) and to reconsider them with the goal of developing more positive self-assessments.

**decision rule** in HYPOTHESIS TESTING, a formal statement of the set of values of the test statistic that will lead to rejection of the NULL HYPOTHESIS that there is no significant effect in the study being examined. For example, a common decision rule is to reject the null hypothesis when the value of a Z TEST statistic exceeds 1.96.

**decision theory** a broad class of presumptions in the quantitative, social, and behavioral sciences that aim to explain a process and identify optimal ways of arriving at conclusions so that prespecified criteria are met.

**decisive moment** in psychotherapy, that moment at which a client makes a significant decision, such as revealing a secret or deciding to make a major life change. See also AHA EXPERIENCE.

**declarative** *adj.* denoting a sentence or clause that takes the form of a straightforward statement rather than a question, request, or command. See INDICATIVE.

**declarative memory** the ability to retain information about facts or events over a significant period of time and to consciously recall such **declarative knowledge**, typically in response to a specific request to remember. It is one of two major divisions in memory proposed in 1980 by U.S. neuroscientist and biological psychologist Larry R. Squire (1941– ), and it generally is divided into two subtypes defined by Endel TULVING: EPISODIC MEMORY and SEMANTIC MEMORY. Declarative memory depends on the integrity of a set of highly interconnected structures in the medial temporal lobe and adjacent cortical areas—specifically, the HIPPOCAMPUS, DENTATE GYRUS, SUBICULUM, PERIRHINAL CORTEX, ENTORHINAL CORTEX, and the PARAHIPPOCAMPAL GYRUS. Both emotion and sleep are known to facilitate declarative memory, and abundant evidence indicates that exposure to acute stress enhances declarative memory consolidation. This form of memory is selectively impaired in AMNESIA and is known as EXPLICIT MEMORY in other theoretical classifications. Compare NONDECLARATIVE MEMORY.

**de Clérambault’s syndrome** see CLÉRAMBAULT’S SYNDROME.

**decline effect** in parapsychology experiments using ZENER CARDS or similar targets, the situation in which the accuracy of the participant’s “calls,” or guesses, begins at above-chance levels but progressively drops to chance levels as further trials are carried out. See REGRESSION TOWARD THE MEAN. See also DIFFERENTIAL EFFECT; FOCUSING EFFECT; PREFERENTIAL EFFECT; SHEEP–GOAT EFFECT.

**decoding** *n.* the process of translating coded information back into its source terms or symbols. Decoding is used in information processing, communication, and computer science. —**decode** *vb.*

**decompensation** *n.* a breakdown in an individual’s DEFENSE MECHANISMS, resulting in progressive loss of normal functioning or worsening of psychiatric symptoms.

**decomposition** *n.* **1.** a process in which a complex item is separated into its simpler constituent elements. For example, in problem solving, it is a strategy in which a problem is transformed into two or more simpler problems. **2.** in statistics, the breaking down of total effects or parameters into their different aspects. For example, in an ANALYSIS OF VARIANCE, one may break down the total variance into the portion that concerns how the means vary between groups and the portion that concerns how much random variance there is within each group. If the between-group variance is significantly larger than the within-group variance, there is some evidence for a difference in means across groups.

**decomposition of movement** difficulty of movement in which gestures are broken up into individual segments instead of being executed smoothly. It is a symptom of cerebellar lesions.

**decompression sickness** an adverse effect of rapid movement of a body from an environment of high pressure to one of lower pressure, resulting in the formation of nitrogen bubbles in the body tissues. The circulatory system is particularly sensitive to the effect. Neurological consequences may include loss of consciousness, convulsions, paresthesias, and damage to the brain and spinal cord. A form of decompression sickness that affects the cardiopulmonary system and may lead to circulatory collapse is called the **chokes**; it is characterized by discomfort underneath the sternum and coughing on deep inspiration. When decompression sickness affects mainly the bones and joints, it is called the **bends**.

**deconditioning** *n.* a technique in BEHAVIOR THERAPY in which learned responses, such as phobias, are “unlearned” (deconditioned). For example, a person with a phobic reaction to flying might be deconditioned initially by practicing going to the airport and using breathing techniques to control anxiety. See also DESENSITIZATION.

**deconstruction** *n.* a form of critical analysis of literary texts and philosophical positions that is based on the twin assumptions that there can be no firm REFERENTS for language and no adequate grounding for truth claims. Although deconstruction challenges the fundamental grounds of the Western philosophical tradition, it recognizes that both the tools and the motivation for doing so arise from that very tradition. A deconstructive reading of a text will generally use traditional analytical methods to expose the innumerable ways in which the text subverts its own claims to meaning and coherence. In much general usage, the term is now taken to be synonymous with the destruction of an idea or a truth claim. See also POSTSTRUCTURALISM. [introduced by French philosopher Jacques Derrida (1930–2004)] —**deconstruct** *vb.* —**deconstructive** *adj.*

**decontextualization** *n.* **1.** the process of isolating a constituent from its normal or expected context. It may occur deliberately, as when visual artists isolate a familiar object from its everyday context by turning it upside down or vastly expanding its size to reveal a new perspective about it, or nonconsciously, as when one’s memory of a traumatic event becomes dissociated from the context in which the trauma occurred and acquires a quality of unreality. **2.** in the study of perception, the process of making implicit stimulus features explicit and testable, as in the AMES ROOM and many other perceptual demonstrations. —**decontextualize** *vb.*

**deconversion** *n.* **1.** loss of one's faith in a religion, as in a Catholic of many years who becomes an atheist or agnostic. Research has shown that the bond between religious leaders and their followers is particularly significant in determining the strength of religious affiliation; thus, the severing of that bond is the most common cause of deconversion. Compare CONVERSION. **2.** less commonly, regression from a more complex belief system to a simpler one.

**decortication** *n.* surgical removal of the outer layer (cortex) of an anatomical structure, especially the outer layer of the cerebrum of the brain (i.e., the CEREBRAL CORTEX).

**decremental conduction** the exponential decay in the size of a membrane potential with distance from the site of stimulation when a subthreshold stimulus is applied to an axon. Compare NONDECREMENTAL CONDUCTION. See also CABLE PROPERTIES.

**decreolization** *n.* a stage of linguistic evolution that sometimes follows the formation of a CREOLE, in which its structure is further elaborated through the influence of the standard language and other languages in contact. The complex linguistic situation that arises in such cases is often referred to as a **postcreolization continuum**.

**decriminalization** *n.* the reduction of legal ramifications for acts that were previously subject to criminal prosecution. It typically involves milder penalties for possession of small amounts of certain drugs, ranging, for example, from reduced or no jail time to paying a small fine.

**decubitus ulcer** see PRESSURE ULCER.

**deculturation** *n.* the processes, intentional or unintentional, by which traditional cultural beliefs or practices are suppressed or otherwise eliminated as a result of contact with a different, dominant culture. Compare ACCULTURATION. —**deculturate** *vb.*

**decussation** *n.* a crossing or intersection in the form of a letter X, as in the decussation of the PYRAMIDS of the medulla oblongata and of the fibers of the left and right optic nerves in the OPTIC CHIASM.

**dedifferentiation** *n.* loss of specialization or of advanced organizational and functional abilities. This may occur, for example, when mature cells within an organism regress to a more general, simplified state, as is sometimes seen in the progression of certain cancers, or as a form of thought disorganization seen in schizophrenia.

**deduction** *n.* **1.** a conclusion derived from formal premises by a valid process of DEDUCTIVE REASONING. **2.** the process of inferential reasoning itself. Compare INDUCTION. —**deductive** *adj.*

**deductive-nomological model** an influential model of SCIENTIFIC EXPLANATION in which laws describing regularities in nature (see NATURAL LAW) are used as initial premises or axioms to deduce working explanations of phenomena, which are then used to deduce specific testable predictions. See HYPOTHETICO-DEDUCTIVE METHOD; NOMOLOGY. See also COVERING-LAW MODEL. [identified by German philosopher of science Carl Gustav Hempel (1905–1997)]

**deductive reasoning** the form of logical reasoning in which a conclusion is shown to follow necessarily from a sequence of premises, the first of which stands for a self-evident truth (see AXIOM) or agreed-upon data. In the empirical sciences, deductive reasoning underlies the process of

deriving predictions from general laws or theories. Compare INDUCTIVE REASONING. See also LOGIC.

**deep body temperature** the temperature of the body's internal organs. Also called **core temperature**.

**deep brain stimulation (DBS)** a neurosurgical procedure used most commonly to treat the disabling neurological symptoms of Parkinson's disease (e.g., tremor, rigidity, stiffness, DYSKINESIA), particularly when such symptoms cannot be adequately controlled with medications. An electrode is inserted through a small opening in the patient's skull and implanted in the brain, and an insulated wire passed under the skin of the head, neck, and shoulder connects the electrode to a neurostimulator, which (similar to a heart pacemaker) is usually implanted under the skin near the collarbone. Electrical signals from the neurostimulator trigger the electrode to begin emitting small impulses of electricity to areas in the brain that control movement, blocking abnormal nerve signals that cause tremor and other neurological symptoms. DBS is also used for people with highly treatment-resistant major depression if multiple medications, psychotherapy, and electroconvulsive therapy have failed. The procedure does not damage healthy brain tissue by destroying nerve cells, and it is reversible. Potential side effects of DBS include a slight decline in memory and executive functioning.

**deep cerebellar nucleus** any of the nuclei at the base of the CEREBELLUM, such as the interpositus nucleus.

**deep depression** a severe MAJOR DEPRESSIVE EPISODE characterized by PSYCHOMOTOR RETARDATION, guilt, SUICIDAL IDEATION, and psychotic features. RUMINATION is frequent, and risk of suicide is high.

**deep dyslexia** a form of acquired DYSLEXIA characterized by semantic errors (e.g., reading *parrot* as *canary*), difficulties in reading abstract words (e.g., *idea*, *usual*) and function words (e.g., *the*, *and*), and an inability to read pronounceable nonwords. See also PHONOLOGICAL DYSLEXIA; SURFACE DYSLEXIA. [first described in 1973 by British neuropsychologists John C. Marshall (1939–2007) and Freda Newcombe (1925–2001)]

**deep-pockets effect** the theory that juries assessing COMPENSATORY DAMAGES are more likely to find in favor of the plaintiff and to make larger awards when the defendant is wealthy.

**deep-pressure sensitivity** see BATHYESTHESIA.

**deep processing** cognitive processing of a stimulus that focuses on its meaningful properties rather than its perceptual characteristics. It is considered that processing at this semantic level, which usually involves a degree of ELABORATION, produces stronger, longer-lasting memories than SHALLOW PROCESSING. See LEVELS-OF-PROCESSING MODEL OF MEMORY. See also SEMANTIC ENCODING; TOP-DOWN PROCESSING. [proposed in 1972 by Canadian psychologists Fergus I. M. Craik (1935– ) and Robert S. Lockhart]

**deep reflex** see TENDON REFLEX.

**deep sensibility** see BATHYESTHESIA.

**deep sleep** the stage of the sleep cycle in which arousal thresholds are highest and consciousness is taken to be least likely. In electroencephalography, deep sleep is commonly defined by a predominance of slow, high-amplitude waveforms. See DELTA WAVE; SLOW-WAVE SLEEP.

**deep structure** **1.** in anatomy, any organ or tissue that is located beneath the surface layers of the body, such as

the heart, liver, or kidney. **2.** in TRANSFORMATIONAL GENERATIVE GRAMMAR, an abstract base form of a sentence in which the logical and grammatical relations between the constituents are made explicit. The deep structure generates the SURFACE STRUCTURE of a sentence through transformations, such as changes in word order or the addition or deletion of elements. Also called **base structure**.

**deep trance** in hypnosis and shamanistic practices, a state in which participants are minimally responsive to environmental cues.

**deep vein thrombosis (DVT)** the presence of a thrombus (clot) in a vein, most often in the leg or thigh, which may result from prolonged immobility and can lead to a PULMONARY EMBOLISM.

**Deese–Roediger–McDermott paradigm** a laboratory memory task used to study false recall. It is based on a report in 1959 that, after presentation of a list of related words (e.g., *snore, rest, dream, awake*), participants mistakenly recalled an unpresented but strongly associated item (e.g., *sleep*). Called the **Deese paradigm** after its original investigator, U.S. psychologist James **Deese** (1921–1999), it has since been renamed to reflect renewed research into the technique by U.S. cognitive psychologists Henry L. **Roediger III** (1947– ) and Kathleen B. **McDermott** (1968– ).

**default-mode network (DMN)** a specific, anatomically defined brain system preferentially active when individuals are not focused on the external environment. It comprises the MEDIAL PREFRONTAL CORTEX, POSTERIOR CINGULATE CORTEX, ANGULAR GYRUS, PRECUNEUS, and middle FRONTAL GYRUS, among other regions. The DMN activates when individuals are engaged in internally focused tasks (i.e., those of a self-referential introspective nature), including autobiographical memory retrieval, envisioning the future, and conceiving the perspectives of others (see SOCIAL PERCEPTION). However, the network also maintains high levels of metabolic activity at rest, in the absence of any task demands. Some researchers thus have suggested that ongoing unconstrained self-reflective thought might be the natural (default) state of the mind when individuals are not otherwise engaged.

**defecation reflex** emptying of the rectum and lower portion of the colon in response to movement or pressure of fecal material. As the rectum fills, receptors send impulses to the spinal cord. Motor nerve impulses are transmitted through sacral fibers of the PARASYMPATHETIC NERVOUS SYSTEM, causing relaxation of the inner anal sphincter and contraction of muscles of the abdominal wall. In order for the act to be completed, the external sphincter muscle, which is controlled by voluntary, skeletal muscle nerves, must also be relaxed. The voluntary nervous system can override the reflex and, under normal conditions, prevent automatic defecation. Also called **rectal reflex**. See also ANAL STAGE; TOILET TRAINING.

**defectology** *n.* in Russian psychology, the field concerned with the education of children with sensory, physical, cognitive, or neurological impairment. It is roughly equivalent to special education and school psychology in the United States. It is based on the view that the primary problem of a disability is not the organic impairment itself but its social implications. [originally defined by Lev VYGOTSKY]

**defect orientation 1.** in service-planning processes, an emphasis that focuses on the impairments, limitations, def-

icits, or defects in functioning of individuals with disabilities but that excludes a corresponding assessment of and emphasis on their skills, abilities, and strengths. **2.** see DEFECT THEORY. Compare DEVELOPMENTAL ORIENTATION.

**defect theory** the proposition that the cognitive processes and behavioral development of people with intellectual disabilities are qualitatively different from those of their peers without intellectual disabilities. Also called **defect orientation**; **difference hypothesis**. Compare DEVELOPMENTAL THEORY.

**defender strategy** a business strategy in which an organization attempts to compete in the marketplace by focusing on a narrow range of products and services and then protecting this niche by offering higher quality, superior service, and lower prices.

**defense** *n.* physical features or behavior that reduce the likelihood of an individual being harmed by another. In nonhuman animals, for example, defensive physical features include hard body parts (e.g., a turtle's shell) and toxic or noxious substances (e.g., odor from a skunk, poison from snakes and spiders); DEFENSIVE BEHAVIOR includes SUBMISSIVE SIGNALS, defensive aggression, immobility, and flight. —**defensive** *adj.*

**defense interpretation** in psychoanalysis, an interpretation of the ways in which the patient protects himself or herself from anxiety. Such an interpretation aims to make the patient aware of his or her defenses and to uncover the source of the anxiety in intrapsychic conflict.

**defense mechanism** in classical psychoanalytic theory, an unconscious reaction pattern employed by the EGO to protect itself from the anxiety that arises from psychic conflict. Such mechanisms range from mature to immature, depending on how much they distort reality: DENIAL is very immature because it negates reality, whereas SUBLIMATION is one of the most mature forms of defense because it allows indirect satisfaction of a true wish. In more recent psychological theories, defense mechanisms are seen as normal means of coping with everyday problems and external threats, but excessive use of any one, or the use of immature defenses (e.g., DISPLACEMENT or REPRESSION), is still considered pathological. Also called **escape mechanism**. See also AVOIDANCE; PROJECTION; RATIONALIZATION; REGRESSION; SUBSTITUTION. [proposed in 1894 by Sigmund FREUD]

**defense reflex** a sudden response elicited by a painful or unexpected stimulus. The term is applied to a variety of responses, ranging from an acceleration in heart rate in reaction to a startling auditory stimulus; through flight, fight, or freezing elicited by perceived threat; to complex psychological responses. Also called **defense response**.

**defensible space** a set of principles and guidelines for the design and planning of settings to reduce crime. Among the critical elements of defensible space are the creation of shared territories in which people have collective control, good surveillance, and markers and other symbols of ownership and primary territory. See TERRITORIALITY.

**defensive aggression** see ANIMAL DEFENSIVE BEHAVIOR.

**defensive attribution** a bias or error in attributing cause for some event such that a perceived threat to oneself is minimized. For example, people might blame an automobile accident on the other driver's mistake because

this attribution lessens their perception that they themselves are responsible for the accident.

**defensive behavior** **1.** aggressive or submissive behavior in response to real or imagined threats of harm. A cat, for example, may exhibit defensive aggression by spitting and hissing, arching its back, and raising the hair along the back of the neck in anticipation of a physical threat (see ANIMAL DEFENSIVE BEHAVIOR). A human might fend off criticism by putting forth self-justifying excuses or by expressing an emotional reaction (e.g., crying) to limit another's disapproval or anger. **2.** in psychoanalytic theory, behavior characterized by the use or overuse of DEFENSE MECHANISMS operating at an unconscious level.

**defensive conditioning** a form of CLASSICAL CONDITIONING in which the UNCONDITIONED STIMULUS is noxious.

**defensive identification** **1.** the process by which a victim of abuse psychologically identifies with the perpetrator of abuse, or with the group with which the perpetrator is identified, as a defensive strategy against continuing feelings of vulnerability to further victimization. **2.** in the classical psychoanalytic theory of Sigmund FREUD, part of the IDENTIFICATION process in which a child identifies with a parent (particularly the father) who is perceived to be powerful, threatening, and punitive. Freud proposed that this form of identification develops as the child's defense against punishment by the parent. Compare ANACLETIC IDENTIFICATION. See also IDENTIFICATION WITH THE AGGRESSOR.

**defensiveness** *n.* a tendency to be sensitive to criticism or comment about one's deficiencies and to counter or deny such criticisms. —**defensive** *adj.*

**defensive processing** the seeking out, attending to, encoding, interpreting, or elaborating of attitude-relevant information to support or confirm one's initial attitude. For example, defensive processing can involve avoiding attitude-inconsistent information and seeking out attitude-consistent information. Similarly, it can involve elaborating attitude-inconsistent information in a highly critical fashion in order to refute it. See also BIASED ELABORATION; COUNTERARGUMENT; SELECTIVE INFORMATION PROCESSING.

**deferred imitation** imitation of an act minutes, hours, or days after viewing the behavior. Research indicates that deferred imitation of simple tasks can be initially observed in infants late in their 1st year. See also SYMBOLIC FUNCTION.

**deferred prosecution** see DIVERSION PROGRAM.

**deficiency** *n.* a lack or shortage of something. A deficiency may, for example, be a relative or absolute lack of a skill, of a biological substrate or process, or of resources that enable specific functions or actions to be performed.

**deficiency cognition (D-cognition)** see BEING COGNITION.

**deficiency love (D-love)** in Abraham MASLOW's humanistic psychology, a type of love that is fulfillment oriented (e.g., based on a need for belonging, self-esteem, security, or power) and characterized by dependency, possessiveness, lack of mutuality, and little concern for the other's true welfare. Compare BEING LOVE.

**deficiency motivation** in Abraham MASLOW's humanistic psychology, the type of motivation operating on the lower four levels of his hierarchy of needs (see MASLOW'S MOTIVATIONAL HIERARCHY). Deficiency motivation is char-

acterized by the striving to correct a deficit that may be physiological or psychological in nature. Compare METAMOTIVATION.

**deficiency motive** any motive driven by the need to counter a deficiency, for example, eating simply to alleviate hunger.

**deficiency need** any need created by lack of a substance required for survival (e.g., food, water) or of a state required for well-being (e.g., security, love).

**deficient processing theory** see SPACING EFFECT.

**definite article** in linguistics, an ARTICLE (e.g., *the* in English) used with a noun phrase to indicate reference to a specific entity that has been or is about to be defined, as in *The patient died last night* or *The patient who died last night*. Compare INDEFINITE ARTICLE.

**definition** *n.* in optics, the clarity of an image reproduced by photography or an optical system. Compare RESOLUTION.

**definitional formula** the formal verbal definition of a statistical concept. For example, the definitional formula of VARIANCE states that it is the mean squared difference between a score and the mean of all of the scores. This contrasts with the COMPUTATIONAL FORMULA, which is the equation used to calculate values for the concept. Also called **conceptual formula**; **definition formula**.

**definitional validity** the extent to which the methods or approaches used by a researcher are consistent with the significance claimed (explicitly or implicitly) for the research. See also EXTERNAL VALIDITY; INTERNAL VALIDITY; EMPIRICAL VALIDITY; FACE VALIDITY.

**deformity** *n.* distortion or malformation of any part of the body. See DISFIGUREMENT.

**degeneracy** *n.* **1.** a state in which a person has declined or reverted to an earlier or simpler state of development in physical, mental, or moral qualities. **2.** the state of possessing few if any of the moral standards considered normal in one's society. Degeneracy is often popularly used with special reference to sexual offenses. —**degenerate** *adj.*

**degenerating axon** the remnant of an injured or dead AXON. Degenerating axons leave a residue that absorbs particular dyes. Thus, a degenerating myelinated nerve fiber releases MYELIN, which absorbs osmium, producing a black trail where the healthy fiber had been.

**degeneration** *n.* **1.** deterioration or decline of organs or tissues, especially of neural tissues, to a less functional form. **2.** deterioration or decline of moral values. —**degenerate** *vb.*

**degenerative status** a constitutional body type marked by an accumulation of deviations from that considered normal, although a single deviant feature would have no particular pathological significance.

**deglutition** *n.* see SWALLOWING.

**degradation** *n.* **1.** in neurophysiology, the process by which NEUROTRANSMITTER molecules are broken down into inactive metabolites. **2.** more generally, the process or result of declining or reducing in value, quality, level, or status.

**degraded stimulus** a stimulus to which NOISE (visual or auditory) has been added to make it more difficult to perceive.

**degrees of freedom 1.** (symbol: *df*) the number of elements that are allowed to vary in a statistical calculation, or the number of scores minus the number of mathematical restrictions. If the MEAN of a set of scores is fixed, then the number of degrees of freedom is one less than the number of scores. For example, if four individuals have a mean IQ of 100, then there are three degrees of freedom, because knowing three of the IQs determines the fourth IQ. **2.** in motor control, the various joints that can move or the various muscles that can contract to produce a movement.

**degrees of freedom problem** the fact that, in most movement situations, the brain has access to many more DEGREES OF FREEDOM than are necessary to accomplish the task and thus selects which posture or movement TRAJECTORY to use from the large set of those that are possible.

**dehoaxing** *n.* DEBRIEFING participants who have been involved in DECEPTION RESEARCH to inform them that they were misled as part of the study. This may involve **desensitizing** participants, so that their self-image is not harmed by having participated in a deceptive study.

**dehumanization** *n.* any process or practice that is thought to reduce human beings to the level of mechanisms or nonhuman animals, especially by denying them autonomy, individuality, and a sense of dignity. —**dehumanize** *vb.*

**dehydration** *n.* lack of water in the body tissues. Dehydration may be absolute, as measured in terms of the difference from normal body water content, or relative, as considered in terms of fluid needed to maintain effective osmotic pressure. The delay before drinking sufficient liquids for complete hydration following water loss through sweating and urination is called **voluntary dehydration**. Compare HYDRATION.

**dehydration reactions** metabolic and psychological disturbances occurring when the body's water supply falls far below its needs. Early symptoms are apathy, irritability, drowsiness, inability to concentrate, and anxiety. Dehydration reactions may progress to delirium, spasticity, blindness, deafness, stupor, and death if more than 10% of body weight is lost.

**dehydrogenase** *n.* an enzyme that catalyzes the removal of hydrogen atoms in biological reactions. See LAC-TATE DEHYDROGENASE.

**deictic** *adj.* see DEIXIS.

**deification** *n.* **1.** the elevation of a living or dead person to the position of a god, as in the case of certain Roman emperors and other rulers of the ancient world. **2.** extreme adulation, or the endowment of a person or thing with godlike status. —**deify** *vb.*

**deindividuation** *n.* an experiential state characterized by loss of self-awareness, altered perceptions, and a reduction of inner restraints that results in the performance of unusual and sometimes antisocial behavior. It can be caused by a number of factors, such as a sense of anonymity or submersion in a group.

**deinstitutionalization** *n.* the joint process of moving people with developmental or psychiatric disabilities from structured institutional facilities to their home communities and developing comprehensive community-based residential, day, vocational, clinical, and supportive services to address their needs. See COMMUNITY CARE. —**deinstitutionalize** *vb.*

**deism** *n.* a type of natural religion associated chiefly with the 18th-century Enlightenment. It is based on the premise that a benevolent God will make sure that the knowledge necessary for human happiness is (a) universally available and (b) accessible to the intellectual powers natural to human beings. It follows that divine truth will conform to human reason and the evidence provided by the natural creation. Deism thus contrasts with revealed religion, which requires a divine revelation of truth beyond what is available by the light of nature. Most forms of deism hold that God created the universe and the natural laws that govern it but has since dispassionately and detachedly allowed it to run its course. Compare PANTHEISM; THEISM. —**deist** *adj., n.*

**Deiters cells** cells that support the outer hair cells in the ORGAN OF CORTI. [Otto **Deiters** (1834–1863), German anatomist]

**deixis** *n.* in linguistics, the use of a word or phrase whose meaning is dependent on the situation in which it is used. For example, the meaning of *The tree on my side of the fence* depends on who says it and where that person is standing. Some words, including the personal and demonstrative pronouns and such adverbs as *here*, *there*, and *now*, are always deictic. The psychological interest in deixis stems from the recognition of the different possible perspectives that it entails. —**deictic** *adj.*

**déjà vécu** a recurring feeling that one has lived previously (French, “already lived”); novel situations are experienced as strangely familiar, leading to a conviction that they are being recollected from a previous life. See FALSE MEMORY.

**déjà vu** the feeling that a new event has already been experienced or that the same scene has been witnessed before (French, “already seen”). The feeling of familiarity may be due to a neurological anomaly, to resemblance between the present and the past scenes, or to a similar scene having been pictured in a daydream or night dream. The feeling may occur even though the person experiencing it cannot consciously recollect the earlier event or scene. See FALSE MEMORY.

**de Lange syndrome** see CORNELIA DE LANGE SYNDROME.

**delay conditioning** in CLASSICAL CONDITIONING, a procedure in which the CONDITIONED STIMULUS is presented, and remains present, for a fixed period (the delay) before the UNCONDITIONED STIMULUS is introduced. After repeated exposure to such pairings, a conditioned response develops. If the delay is long enough, INHIBITION OF DELAY may be observed. Also called **delayed conditioning**. Compare SIMULTANEOUS CONDITIONING.

**delayed alternation task** a DELAYED RESPONSE task in which a nonhuman animal must alternate responses between trials. The most common version of this task is one in which a food reward is alternated from side to side with a delay between trials. The animal must learn that a well (cup) containing food is always on the opposite side from the previous trial. Also called **delayed response alternation**.

**delayed auditory feedback (DAF)** a technique of AUDITORY FEEDBACK in which speakers listen through headphones to their own speech, which is heard a short time after it is spoken. It is one of several techniques that may be used to induce greater fluency and clearer articulation in those with various speech and language disorders, particu-



larly in those who stutter. Paradoxically, however, the delay in DAF has also been found to cause DYSFLUENCY in normally fluent speakers.

**delayed conditioning** see DELAY CONDITIONING.

**delayed development** slower than expected developmental increases in physical, emotional, social, or cognitive abilities or capacities. A child with delayed development may hold attitudes, exhibit habits, or engage in behaviors consistent with an earlier developmental level.

**delayed effect** an effect that is not observed for some period of time after the event or factor that is held to have caused it. Usually the precipitating event exerts an indirect influence by starting a process or chain of events that ultimately has a demonstrable effect. See CAUSAL LATENCY; REMOTE CAUSE.

**delayed ejaculation** see MALE ORGASMIC DISORDER.

**delayed feedback** the delay of feedback from the senses that is used to guide or monitor specific motor movements. Delayed feedback interferes with decision making and behavior; for example, DELAYED AUDITORY FEEDBACK when speaking can substantially interfere with the speed and processing of speech.

**delayed matching to sample (DMTS)** a procedure in which the participant is shown a sample stimulus and then, after a variable time, a pair of test stimuli and is asked to select the test stimulus that matches the earlier sample stimulus. Correct selection of the matching stimulus is reinforced. In **zero-delay matching to sample**, the test stimuli are presented as soon as the sample stimulus is removed. The task becomes more difficult as the time between the two presentations increases. In **delayed non-matching to sample**, the participant must choose the stimulus that was not presented in the sample phase. See also CONDITIONAL DISCRIMINATION; MATCHING TO SAMPLE.

**delayed parenthood** the state of people who have their first child relatively late in life, usually after their 30th birthday.

**delayed posttraumatic stress disorder** a form of POSTTRAUMATIC STRESS DISORDER that is diagnosed when the symptoms first appear more than 6 months after exposure to the traumatic stressor.

**delayed recall** the ability to recollect information acquired earlier. Frequently used in laboratory studies of memory, delayed recall is also used in neuropsychological examinations to determine the rate of loss of information presented earlier, in comparison to established norms.

**delayed reflex** a reflexive response that has an abnormally long latency after stimulation.

**delayed reinforcement** reinforcement that does not occur immediately after a response has been made. The delay may be signaled or unsignaled. If it is signaled, a stimulus change occurs immediately after the response, and this stimulus remains present until the reinforcer is delivered. If the delay is unsignaled, there is no change of stimulus.

**delayed response** a response that occurs some time after its DISCRIMINATIVE STIMULUS has been removed. The most common **delayed response task** for nonhuman animals is one in which the animal is required to recall the location of a reward after a delay period has elapsed.

**delayed response alternation** see DELAYED ALTERNATION TASK.

**delayed speech** the failure of speech to develop at the expected age. It may be due to DEVELOPMENTAL DELAY, hearing loss, brain injury, intellectual disability, psychological disorder, or emotional disturbance.

**delay of gratification** forgoing immediate reward in order to obtain a larger, more desired, or more pleasurable reward in the future. Compare IMMEDIATE GRATIFICATION.

**delay of reinforcement** the time between a response and its reinforcer.

**delay-of-reward gradient** the relation between DELAY OF REINFORCEMENT and the effectiveness of reinforcement. The effectiveness decreases as the delay increases. Also called **delay-of-reinforcement gradient**.

**Delboeuf illusion** a size CONTRAST ILLUSION in which a larger enclosing circle influences the perceived size of a smaller enclosed circle. If the two circles are of similar sizes, the perceived size of the inner circle will be increased. If the size of the enclosing circle is significantly larger, then the perceived size of the inner circle will be decreased. [Joseph-Rémi-Léopold DELBOEUF]

**delegation of authority** an approach whereby a manager or supervisor assigns tasks to subordinates, along with commensurate responsibility for completion of the tasks, but without relinquishing the ultimate responsibility for any success or failure.

**deletion** *n.* **1.** in genetics, a particular kind of MUTATION characterized by the loss of genetic material from a chromosome. Deletion of a gene or part of a gene may result in the development of a disease or abnormality. The deletion may involve the loss of one or several base pairs (point mutation) or a much larger segment of a chromosome (chromosomal mutation). **2.** in GENERATIVE GRAMMAR, the process in which a constituent of the DEEP STRUCTURE of a sentence is deleted from the SURFACE STRUCTURE (i.e., the sentence as used). For example, the sentence *I am happy, my mother is too* is derived from the deep structure *I am happy, my mother is happy too*, with the second *happy* deleted. The question of whether deletion can serve as a psychological model of sentence processing has been a subject of much psycholinguistic investigation. See also ELLIPSIS.

**deliberate psychological education (DPE)** a curriculum that is designed to affect personal, ethical, aesthetic, and philosophical development in adolescents and young adults, through a balance of real and role-taking experiences and reflective inquiry. Counselors act as psychological educators or developmental instructors.

**deliberate sampling** any method of selecting individuals to participate in research on the basis of a specific plan, rather than randomly. This includes simple nonrandom techniques, such as JUDGMENT SAMPLING and CONVENIENCE SAMPLING. In more sophisticated methods, such as QUOTA SAMPLING and STRATIFIED SAMPLING, various steps are taken with the aim of creating a sample that is representative of the larger population.

**deliberate self-harm (DSH)** the intentional, direct destruction of body tissue (most commonly by CUTTING, burning, scratching, self-hitting, self-biting, and head banging) without conscious suicidal intent but resulting in injury severe enough for tissue damage to occur. Although, by definition, DSH is distinguished from suicidal behaviors involving an intent to die, it is nonetheless potentially life-

threatening. Typically associated with BORDERLINE PERSONALITY DISORDER, it has also been found to occur at high rates among nonclinical populations of adolescents. It is seen as well in individuals with intellectual and developmental disabilities, in whom it is usually known by its older synonym **self-injurious behavior**. Also called **self-injury**.

**deliberative mind-set** see MIND-SET.

**delinquency** *n.* behavior violating social rules or conventions. The term is often used to denote the misbehavior of children or adolescents. See JUVENILE DELINQUENCY. —**delinquent** *adj.*, *n.*

**délire de négation** see COTARD'S SYNDROME.

**délire du toucher** the compulsion to touch objects, which may be associated with OBSESSIVE-COMPULSIVE DISORDER or may be a complex tic in TOURETTE'S DISORDER.

**deliriant** *n.* a substance capable of inducing acute DELIRIUM, commonly associated with restlessness or agitation. An acute delirium may result from excess ingestion of anticholinergic drugs (see ANTICHOLINERGIC SYNDROME) or withdrawal from alcohol and certain other substances.

**delirium** *n.* a disturbed mental state in which attention cannot be sustained, the environment is misperceived, and the stream of thought is disordered. The individual may experience changes in cognition (which can include disorientation, memory impairment, or disturbance in language), perceptual disturbances, hallucinations, illusions, and misinterpretation of sounds or sights. The episode develops quickly and can fluctuate over a short period. Delirium may be caused by a variety of conditions, such as infections, cerebral tumors, substance intoxication and withdrawal, head trauma, and seizures.

**delirium of persecution** delirium in which the predominant symptoms include intense mistrust and hallucinations that one is being threatened.

**delirium tremens (DTs)** a potentially fatal alcohol withdrawal syndrome involving extreme agitation and anxiety, paranoia, visual and tactile hallucinations, disorientation, tremors, sweating, and increased heart rate, body temperature, and blood pressure. Onset is usually within 72 hours of cessation of heavy alcohol use, but symptoms may occur up to 10 days after the last drink. The DTs are considered a medical emergency.

**Delis-Kaplan Executive Function System (D-KEFS)** a battery of nine measures used in the evaluation of higher cognitive functions (e.g., planning, problem solving, abstract thinking) in both children and adults. The battery consists of modifications of traditional measures (e.g., TRAIL MAKING TEST, VERBAL FLUENCY TEST, DESIGN FLUENCY TEST) as well as newer measures (a sorting test, a word-context test). Each measure has multiple component scores, allowing for a PROCESS APPROACH to the assessment of executive functioning. [first published in 2001 by U.S. neuropsychologists Dean C. Delis (1951– ), Edith KAPLAN, and Joel H. Kramer]

**delivery** *n.* the second stage of childbirth, during which the infant travels through the birth canal and into the external world. See also AFTERBIRTH; LABOR.

**Delphi technique** a method of developing and improving group consensus by eliminating the effects of personal relationships and dominating personalities. Conflict is managed by circulating a questionnaire, which is edited and summarized on the basis of the last round of com-

ments and then reissued for further response by those participating in the survey. The Delphi technique is used in many situations where convergence of opinion is desirable (e.g., for defining goals, setting standards, or identifying and ranking needs and priorities).

**delta** (symbol:  $\Delta$ ) *n.* **1.** a measure of the change in a PARAMETER. For example,  $\Delta R^2$  indicates how much of the change in  $R^2$  (the COEFFICIENT OF MULTIPLE DETERMINATION) was caused or explained by a given step (e.g., adding a specific variable to an analysis). **2.** see GLASS'S D.

**delta alcoholism** see JELLINEK'S ALCOHOLISM SPECIES.

**delta movement** a form of APPARENT MOVEMENT in which a brighter stimulus appears to move toward a darker stimulus, provided that certain conditions of stimulus size, distance, and time between stimuli are met. Also called **delta motion**.

**delta opioid receptor** see OPIOID RECEPTOR.

**delta rule** the principle that the change in strength of an association during learning is a function of the difference between the maximal strength possible and the current strength of the association. The delta rule is used in associationistic learning theory (see ASSOCIATIVE LEARNING).

**delta-9-tetrahydrocannabinol** *n.* see TETRAHYDROCANNABINOL.

**delta wave** the lowest frequency BRAIN WAVE recorded in electroencephalography. Delta waves are large, regular-shaped waves that have a frequency of 1 to 3 Hz. They are associated with deep sleep (**delta-wave sleep**) and indicate a synchronization of cells of the cerebral cortex. Also called **delta rhythm**; **slow wave**. See NREM SLEEP; STAGE 3 SLEEP; STAGE 4 SLEEP.

**deltoid 1.** *n.* a muscle that covers the shoulder and is used to raise the arm to the side. **2.** *adj.* pertaining to the deltoid muscle.

**delusion** *n.* an often highly personal idea or belief system, not endorsed by one's culture or subculture, that is maintained with conviction in spite of irrationality or evidence to the contrary. Delusions may be transient and fragmentary, as in DELIRIUM, or highly systematized and elaborate, as in DELUSIONAL DISORDERS, though most of them fall between these two extremes. Common types include DELUSIONAL JEALOUSY, DELUSIONS OF BEING CONTROLLED, DELUSIONS OF GRANDEUR, DELUSIONS OF PERSECUTION, DELUSIONS OF REFERENCE, nihilistic delusions (see NIHILISM), and SOMATIC DELUSIONS. Data suggest that delusions are not primarily logical errors but are derived from emotional material. They have come to represent one of the most important factors in systems for diagnostic classification. Some researchers believe that delusions may be the most important symptom of schizophrenia. See also BIZARRE DELUSION; FRAGMENTARY DELUSION; SYSTEMATIZED DELUSION.

**delusional disorder** in DSM-IV-TR, any one of a group of psychotic disorders with the essential feature of one or more nonbizarre DELUSIONS that persist for at least 1 month but are not due to schizophrenia. The delusions are nonbizarre in that they feature situations that could conceivably occur in real life (e.g., being followed, poisoned, infected, deceived by one's government). Diagnosis also requires that the effects of substances (e.g., cocaine) or a medical condition be ruled out as causes of the delusions. Seven types of delusional disorder are specified, according to the theme of the delusion: erotomanic, grandiose, jealous, persecutory, somatic, mixed, and unspecified. Criteria

changes for delusional disorder in *DSM-5* include the following: The delusions may be either nonbizarre or bizarre (i.e., implausible), and their potential presence as a result of an ingested substance, a medical condition, or another mental disorder sometimes associated with firmly held delusional beliefs (e.g., obsessive-compulsive disorder, body dysmorphic disorder) must be ruled out. Formerly called **paranoid disorder**.

**delusional jealousy** a false belief that a spouse or partner is unfaithful. The individual is constantly on the watch for indications that this belief is justified, manufactures evidence if it is not to be found, and completely disregards facts that contravene the conviction. Also called **morbid jealousy**; **Othello syndrome** or **delusion; pathological jealousy**.

**delusional mania** a less common name for a MANIC EPISODE with PSYCHOTIC FEATURES.

**delusional misidentification syndrome** see MISIDENTIFICATION SYNDROME.

**delusional parasitosis** a rare psychiatric disorder (previously called ACAROPHOBIA) in which a person has the false and persistent belief of being infested by parasites (mites and lice), worms, insects, bacteria, or other small living organisms. It may occur in isolation or be secondary to dementia, psychosis, or various medical conditions. See also FORMICATION.

**delusional system** a more or less logically interconnected group of DELUSIONS held by the same person. Delusions that are tightly logical, but based on a false premise, are characteristic of persecutory type DELUSIONAL DISORDER. Also called **delusion system**.

**delusion of being controlled** the false belief that external forces, such as machines or other people, are controlling one's thoughts, feelings, or actions.

**delusion of grandeur** the false attribution to the self of great ability, knowledge, importance or worth, identity, prestige, power, accomplishment, or the like. Also called **grandiose delusion**. See also MEGALOMANIA.

**delusion of influence** **1.** the false supposition that other people or external agents are covertly exerting powers over oneself. **Idea of influence** is used synonymously but with the implication that the condition is less definite, of shorter duration, or less severe. **2.** the false belief that one's intentions or actions directly control external events or the thoughts and behavior of other people.

**delusion of negation** see NIHILISM.

**delusion of observation** the false belief that one is being watched by others. Also called **observation delusion**.

**delusion of persecution** the false conviction that others are threatening or conspiring against one. Also called **persecutory delusion**.

**delusion of poverty** a false belief in which the individual insists that he or she is, or will soon be, entirely destitute.

**delusion of reference** the false conviction that the actions of others and events occurring in the external world have some special meaning or significance (typically negative) in relation to oneself. See also IDEA OF REFERENCE.

**delusion of sin** a delusion in which the individual is convinced of having committed unpardonable sins, for ex-

ample, being to blame for wars, droughts, and other catastrophes. Such a delusion is frequently accompanied by intense fear of punishment.

**delusion system** see DELUSIONAL SYSTEM.

**demand** *n.* a requirement or urgent need, particularly any internal or external condition that arouses a DRIVE in an organism.

**demand characteristics** in an experiment or research project, cues that may influence or bias participants' behavior, for example, by suggesting the outcome or response that the experimenter expects or desires. Such cues can distort the findings of a study. See also EXPERIMENTER EFFECT; SENSORY LEAKAGE.

**demand feeding** see SELF-DEMAND SCHEDULE.

**demandingness** *n.* insistence upon attention, help, or advice from others. It is commonly associated with depression. See also DEPENDENCE. —**demanding** *adj.*

**demandment** *n.* any self-constructed and often self-defeating and nonconscious imperative that converts important desires and goals into absolute demands: "Because I am not performing well, as I *absolutely must*, I am a terrible person." See RATIONAL EMOTIVE BEHAVIOR THERAPY. [defined by Albert ELLIS]

**demand reduction** an approach to fighting addiction (including smoking and alcoholism) that attempts to reduce user demand for abused drugs through such tactics as antidrug education in schools, antidrug advertising (e.g., on television and billboards), and legislation requiring that health warnings be prominently placed on product packaging (e.g., cigarette packs, liquor bottles). In contrast, **supply reduction** attempts to lessen the supply of abused substances through, for example, DRUG INTERDICTION, drug-seller arrests, and the requirement that retailers limit access to substances such as INHALANTS.

**demand-withdraw pattern** a pattern of interaction in which a person criticizes or requests changes in the behavior of a relationship partner, who responds by avoiding the demand, becoming defensive, or withdrawing from the conversation. This pattern of communication is considered dysfunctional and predicts marital deterioration and divorce. The pattern occurs more often with female demands and male withdrawal than vice versa. [first identified in the 1980s by U.S. psychologist Andrew Christensen and colleagues]

**demasculinization** *n.* **1.** removal of the testes. **2.** inhibition of masculine development in the fetus by insufficiency of androgens.

**démence précoce** see DEMENTIA PRAECOX.

**dementia** *n.* **1.** a generalized, pervasive deterioration of memory and at least one other cognitive function, such as language and an EXECUTIVE FUNCTION, due to a variety of causes. The loss of intellectual abilities is severe enough to interfere with an individual's daily functioning and social and occupational activity. In *DSM-IV-TR*, dementias are categorized according to the cause, which may be Alzheimer's disease, cerebrovascular disease (see VASCULAR DEMENTIA), Lewy body dementia, Pick's disease, Parkinson's disease, Huntington's disease, HIV infection (see AIDS DEMENTIA COMPLEX), Creutzfeldt-Jakob disease, head injury, alcoholism (see ALCOHOL-INDUCED PERSISTING DEMENTIA), or substance abuse (see SUBSTANCE-INDUCED PERSISTING DEMENTIA). Brain tumor, HYPOTHYROIDISM, HEMATOMA, or

other conditions, which may be treatable, can also cause dementia. The age of onset varies with the cause but is usually late in life. When occurring after the age of 65, it is termed **senile dementia**, and when appearing before 65, it is called **presenile dementia**, although these distinctions are becoming obsolete because its manifestations are the same no matter the age of onset. Dementia should not be confused with AGE-ASSOCIATED MEMORY IMPAIRMENT or MILD COGNITIVE IMPAIRMENT, which have a much less deleterious effect on day-to-day functioning. DSM-5 has subsumed dementia and AMNESTIC DISORDER into the diagnostic category **major neurocognitive disorder**, although it still accepts the term *dementia* where commonly used. **2.** historically, loss of ability to reason due to mental illness, diseases such as neurosyphilis (see GENERAL PARESIS), or advanced age (senility). [Latin, "out of mind"]

**dementia of the Alzheimer's type (DAT)** another name for ALZHEIMER'S DISEASE.

**dementia paralytica** see GENERAL PARESIS.

**dementia praecox** a progressively deteriorating psychotic disorder marked by severe, incurable cognitive disintegration beginning in early adulthood (Latin, "premature dementia"). The term, now obsolete, was first used in 1891 by Czech psychiatrist and neuroanatomist Arnold Pick (1851–1924) and then formalized by German psychiatrist Emil KRAEPELIN as a taxonomic concept, defining it as one of two major classes of mental illness (the other being manic-depressive illness; see BIPOLAR DISORDER) and distinguishing it from the "senile dementia" of advanced age. It is said to have originated as a translation of *démence précoce*, coined in 1852 by Austrian-born French psychiatrist Bénédict A. Morel (1809–1873), but some dispute that connection, arguing that Morel's term was only a passing description of a group of young patients who suffered from "stupor," a condition unrelated to the psychotic disorder that Kraepelin described more than 40 years later. Whatever its exact origins, the more prevalent Latin term was eventually replaced after Swiss psychiatrist Eugen BLEULER reframed the Kraepelinian concept, deemphasizing its characterization as an early dementia with an irreversible disease course, and renamed it SCHIZOPHRENIA in 1908.

**dementia pugilistica** a chronic, slowly progressive dementia produced by repeated blows to the head, as may affect participants of contact sports such as boxing, football, and wrestling. Affected individuals are often described as "punch-drunk." Common symptoms include poorly articulated speech (see DYSARTHRIA), poor balance, impaired memory and concentration, and involuntary movements. The term is often applied to the more advanced cases, whereas **chronic traumatic encephalopathy** refers to all types of cases. Also called **boxer's dementia**.

**Dementia Rating Scale (DRS)** a neuropsychological assessment instrument used to measure cognitive status in adults with cognitive impairments due to brain pathologies. It comprises 36 tasks of varying difficulty (e.g., repeating a series of numbers, naming objects present in the immediate environment, copying designs from stimulus cards onto blank pieces of paper) that are presented to participants in a fixed order. The scale evaluates performance on five subscales: attention, initiation-perseveration, construction, conceptualization, and memory. Originally developed in 1973 by U.S. neuropsychologist Steven Mattis and published commercially in 1988, the DRS subsequently was revised in 2001 (**DRS-2**).

**dementia syndrome of depression** see PSEUDODEMENTIA.

**Demerol** *n.* a trade name for MEPERIDINE.

**Deming management method** an approach to management that uses a prescriptive set of 14 points as guidelines for appropriate organizational practice and that emphasizes the strategic role of senior management in meeting customer needs. The method was important in the development of TOTAL QUALITY MANAGEMENT. See also THEORY Z. [W. Edwards **Deming** (1900–1993), U.S. management expert]

**demo-** (**dem-**) *combining form* people or population.

**democracy** *n.* **1.** a form of government in which the people either participate in the political process themselves or elect others to do so on their behalf (**representative democracy**) and in which decisions are made by majority vote. **2.** more loosely, any society in which all citizens purportedly have equal rights and in which certain basic freedoms, such as freedom of speech, are upheld. See also OPEN SOCIETY. —**democrat** *n.* —**democratic** *adj.*

**democratic atmosphere** a climate of social and political equality in which group members resolve issues and make choices through the use of procedures that ensure that the final decision accurately reflects the predominant desires and intentions of the group.

**democratic leader** the type of leader who establishes and maintains an egalitarian group climate in which members themselves participate in planning activities, resolving issues, and making choices important to the group. Groups with democratic leaders tend to show greater originality, higher morale, and less anxiety, aggression, and apathy than do groups with AUTHORITARIAN LEADERS or with LAISSEZ-FAIRE LEADERS. Also called **group-centered leader**.

**democratic parenting** a parenting style, derived from the ideas of Alfred ADLER, in which the parent guides the child's development in an accepting but steady manner and fosters a climate in which cooperation, fairness, equality, and mutual respect between parent and child are assumed.

**demographic research** see POPULATION RESEARCH.

**demography** *n.* the statistical study of human populations in regard to various factors and characteristics, including geographical distribution, sex and age distribution, size, structure, and growth trends. Such analyses are used in many types of investigation, including epidemiological studies. See also BIOSTATISTICS; SOCIAL STATISTICS. —**demographer** *n.* —**demographic** *adj.*

**demonic possession** the supposed invasion of the body by an evil spirit or devil that gains control of the mind or soul, producing mental disorder, physical illness, or criminal behavior. Many forms of physical and psychological illness were formerly attributed to such possession, notably epilepsy, schizophrenia, and Tourette's disorder. The traditional remedy for possession was ritual EXORCISM.

**demonolatry** *n.* the worship of devils or demons. See also SATANISM; WITCHCRAFT. —**demonolator** *n.*

**demonology** *n.* the systematic study of belief in demons and evil spirits, frequently depicted in folklore and mythology as invading the mind, gaining possession of the soul, and producing disordered behavior. See also EXORCISM; FAMILIAR; INCUBUS; SUCCUBUS; WITCHCRAFT. —**demonological** *adj.* —**demonologist** *n.*

**demonomania** *n.* a morbid preoccupation with demons and demonic possession, including the belief that one is possessed by or under the control of an evil spirit or demon.

**demonstration experiment** a demonstration, often by a teacher in a classroom, of a well-established fact. Demonstration experiments are usually not experiments in the technical sense of comparing experimental to control conditions after randomization.

**demoralization** *n.* a sense of threat to or a breakdown of values, standards, and mores in an individual or group, such as may occur in periods of rapid social change, extended crises (e.g., war, economic depression), or personal traumas. A demoralized person may be disheartened and feel helpless, bewildered, and insecure. —**demoralize** *vb.*

**demoralization hypothesis** the idea that effective psychotherapy depends on the therapist overcoming the client's state of demoralization, which can be achieved by encouraging the client to confide, explaining his or her symptoms, and providing a therapeutic ritual through which these may be resolved. Such an approach is held to be a common factor underlying the success of various therapies. [proposed by Jerome D. FRANK]

**demotivation** *n.* NEGATIVE IMAGERY or negative SELF-TALK that emphasizes why one cannot do well in a task and thus discourages any attempt to perform it.

**demyelinating disease** any of various pathological conditions, such as multiple sclerosis, resulting from destruction of the MYELIN SHEATH covering nerve fibers in the central and peripheral nervous systems.

**demyelination** *n.* the loss of the MYELIN SHEATH that covers nerve fibers.

**demyelination plaque** see PLAQUE.

**denasality** *n.* see HYPONASALITY.

**dendrite** *n.* a branching, threadlike extension of the CELL BODY that increases the receptive surface of a neuron. The full arrangement of the dendrites of a single neuron is termed a **dendritic tree**, and the specific pattern and quality of that arrangement is termed **dendritic branching**. See also ARBORIZATION. —**dendritic** *adj.* [from Greek *dendron*, "tree"]

**dendritic pathology** abnormalities of DENDRITES associated with specific psychological disorders and neurological illnesses or injuries.

**dendritic potential** the electric potential across the membrane of a DENDRITE, usually its RESTING POTENTIAL.

**dendritic spine** a mushroom-shaped outgrowth along the DENDRITE of a neuron, which forms a SYNAPSE with the axon terminals of neighboring neurons. Research suggests that neurons develop dendritic spines as part of an organism's learning process. Also called **dendritic thorn**.

**dendritic zone** any part of the receptive surface of a neuron, including the membrane of the CELL BODY.

**dendrodendritic synapse** a SYNAPSE between DENDRITES of two neurons.

**dendrogram** *n.* a type of treelike diagram used in HIERARCHICAL CLUSTERING. It lists all of the participants at one end and then directs branches out from those participants who are similar and connects them with a node that represents a cluster. A dendrogram could be used, for example,

to cluster individuals into various categories of HIV risk, depending on their number of sexual partners, their frequency of unprotected sex, and the perceived risk of their partners. Individuals who had few sexual partners with little or no unprotected sex and who perceived little or no partner risk of HIV infection would be branched into a cluster that could be labeled low risk, whereas individuals with high values on these three variables would branch into a high-risk cluster, with other individuals presumably clustering into a medium-risk group.

**dendrophilia** *n.* a PARAPHILIA characterized by sexual attraction to trees. The person may have actual sexual contact with trees, may venerate them as phallic symbols, or both. Also called **dendrophily**.

**denervation** *n.* removal or interruption of the nerves that supply a part of the body.

**denervation sensitivity** see DISUSE SUPERSENSITIVITY.

**denial** *n.* a DEFENSE MECHANISM in which unpleasant thoughts, feelings, wishes, or events are ignored or excluded from conscious awareness. It may take such forms as refusal to acknowledge the reality of a terminal illness, a financial problem, an addiction, or a partner's infidelity. Denial is an unconscious process that functions to resolve emotional conflict or reduce anxiety. Also called **disavowal**. —**deny** *vb.*

**denial stage** the first of the five STAGES OF GRIEF described by Elisabeth KÜBLER-ROSS. It is characterized by a conscious or unconscious inability to acknowledge or accept one's own or an important other's impending or actual death or some other great loss or trauma.

**denotative meaning** the objective or literal meaning of a word or phrase as opposed to its **connotative meaning**, which includes the various ideas and emotions that it suggests within a particular culture. For example, the word *father* denotes "male parent" but may connote a range of ideas involving protection, authority, and love.

**density** *n.* **1.** the compactness of the constituent elements of something, reflecting its degree of impenetrability. **2.** a measure of the amount of physical space per individual. High density can produce crowding, the feeling of having insufficient space. Interior indices of density (e.g., people per room) are consistently related to negative psychological consequences, whereas external indices (e.g., people per square mile) are not. See also SOCIAL DENSITY; SPATIAL DENSITY. —**dense** *adj.*

**density curve** see PROBABILITY CURVE.

**density function** see PROBABILITY DENSITY FUNCTION.

**density-intensity hypothesis** an explanation of psychological reactions to overcrowding positing that high DENSITY makes unpleasant situations more unpleasant but pleasant situations more pleasant. [proposed by U.S. psychologist Jonathan M. Freedman (1952– )]

**dent-** *combining form* see DENTI-.

**dental** **1.** *adj.* of or relating to the teeth. **2.** *adj.* denoting a speech sound produced with the tongue touching the upper front teeth, as in the French [t] sound. **3.** *adj.* more loosely, denoting any ALVEOLAR, dental, or INTERDENTAL speech sound. **4.** *n.* a dental speech sound.

**dental age** a measure of dental development based on the number of permanent teeth present. Dental age may be used to calculate CHRONOLOGICAL AGE.

**dental lisp** see LISP.

**dental pattern** the species-specific arrangement of teeth by type (i.e., incisors, canines, bicuspid, and molars) in each quadrant of the mouth, from front to back.

**dental phobia** a persistent and irrational fear of dentists or of dental treatment, resulting in the avoidance of dental care or marked distress and anxiety during dental visits. It may be related to a prior negative dental experience, fear of pain, perceived lack of control, or feelings of helplessness or embarrassment.

**dentate gyrus** a strip of gray matter that is part of the HIPPOCAMPAL FORMATION, connecting the ENTORRHINAL CORTEX with the CA3 region of the HIPPOCAMPUS proper. It comprises the **granular layer**, which is densely packed with the bodies (somas) of elongated neurons called GRANULE CELLS; the **molecular layer**, which contains the dendrites of the granule cells and is divided into outer, middle, and inner sublayers; and the **polymorphic layer** (or **hilus**), which contains the axons of the granule cells (see MOSSY FIBER). At the border between the granular and polymorphic layers is the **subgranular zone**, one of only two currently known areas in the adult brain in which new neurons are formed (the other is the SUBVENTRICULAR ZONE in the lateral ventricles). This multistage creation process, called NEUROGENESIS, is modulated by many factors (e.g., age, environmental stimuli, hormones, neurotransmitters, NEUROTROPHINS, stress) and essential to several activities, notably information processing and learning, memory formation, spatial representation, and affect regulation. Structural and functional abnormalities of the dentate gyrus are associated with an increasing number of pathologies, including Alzheimer's disease, autism, epilepsy, depression and other mood disorders, schizophrenia, and substance abuse and dependence. Consequently, novel therapeutic approaches focused on enhancing the rate of neurogenesis and the successful survival of newborn neurons are being explored.

**dentate nucleus** a cluster of cell bodies in the CEREBELLUM believed to be associated with skilled and rapid movement.

**denti- (dent-)** combining form teeth.

**deoxycorticosterone** *n.* a potent MINERALOCORTICOID hormone synthesized by the adrenal glands. It is a precursor of CORTICOSTERONE.

**deoxyglucose** *n.* a compound that is related to glucose but cannot be metabolized. It is used, in various forms, to label cells for histological examination or imaging techniques; for example, radiolabeled 2-deoxyglucose is used in POSITRON EMISSION TOMOGRAPHY.

**deoxyribonucleic acid** see DNA.

**Depacon** *n.* a trade name for valproate sodium. See VALPROIC ACID.

**Depakene** *n.* a trade name for VALPROIC ACID.

**Depakote** *n.* a trade name for DIVALPROEX SODIUM.

**dependence** *n.* **1.** the state of having some reliance on or ASSOCIATION with another entity or event, as when one variable is formed from another variable in an analysis. For example, dependence would be seen if a researcher included IQ, formed from mental age over actual age, in an analysis that already has age as a variable. **2.** a state in which assistance from others is expected or actively sought for emotional or financial support, protection, security, or

daily care. The dependent person leans on others for guidance, decision making, and nurturance. Whereas some degree of dependence is natural in interpersonal relations, excessive, inappropriate, or misdirected reliance on others is often a focus of psychological treatment. Personality, social, and behavioral psychology, as well as psychoanalytic theory, all contribute different perspectives to the study and treatment of pathological dependence. **3.** see SUBSTANCE DEPENDENCE. **4.** in OPERANT CONDITIONING, a causal relation between a response and a consequence, which results in a CONTINGENCY. **5.** see STATISTICAL DEPENDENCE. Also called **dependency**. —**dependent** *adj.*

**dependency court** in the United States, a court dealing with all issues concerned with child abuse and neglect; such issues are brought to the attention of the court by a government agency (typically Child Protective Services), which intervenes on behalf of the child by filing a petition alleging abuse or neglect.

**dependency need** any personal need that must be satisfied by others, including the need for affection, love, shelter, physical care, food, warmth, protection, and security. Such needs are considered universal and normal for both sexes and at all ages, though excessive dependence can be maladaptive. See also CODEPENDENCY; MORBID DEPENDENCY.

**dependency ratio** a measure of the portion of a population that is composed of people who are not in the work force and depend on others for support versus people who are in the work force and are self-sufficient. The dependency ratio is often defined in terms of age groups, with those who either are too young to work or are retired being set against those who are in their prime earning years; it is then calculated as the number of individuals aged below 15 or above 64 divided by the number of individuals aged 15 to 64.

**dependent events** in probability theory, EVENTS that have a relationship such that the outcome of one affects the outcome of the other. For example, overeating and being overweight are dependent events, whereas shoe size and political party preference are most likely not. Compare INDEPENDENT EVENTS.

**dependent groups** see DEPENDENT SAMPLES.

**dependent model** see INTEGRATED MODEL.

**dependent-part quality** in GESTALT PSYCHOLOGY, the quality that a part of a larger whole derives by virtue of the part-whole relationship.

**dependent personality disorder** in DSM-IV-TR and DSM-5, a personality disorder manifested in a long-term pattern of passively allowing others to take responsibility for major areas of life and of subordinating personal needs to the needs of others, due to lack of self-confidence and self-dependence. It was formerly known as **passive-dependent personality**.

**dependent samples** sets of data that are related owing to their having been collected from the same group on two or more occasions (as with a pre- and posttest), or from two or more sets of individuals who are related or otherwise closely associated (e.g., parents and their children). Also called **correlated samples**; **dependent groups**; **related samples**. Compare INDEPENDENT SAMPLES.

**dependent-samples *t* test** a T TEST used to analyze data from two or more sets of associated individuals or from one set of individuals measured on different occasions (e.g., pre- and posttreatment). Also called **re-**

**lated-samples *t* test; repeated measures *t* test.** See WITHIN-SUBJECTS DESIGN. Compare INDEPENDENT-SAMPLES *T* TEST.

**dependent variable (DV)** the outcome that is observed to occur or change after the occurrence or variation of the INDEPENDENT VARIABLE in an experiment, or the effect that one wants to predict or explain in CORRELATIONAL RESEARCH. Dependent variables may or may not be related causally to the independent variable. Also called **criterion variable; effect variable; outcome variable; response variable**.

**depersonalization** *n.* a state of mind in which the self appears unreal. Individuals feel estranged from themselves and usually from the external world, and thoughts and experiences have a distant, dreamlike character. In its persistent form, depersonalization is observed in such disorders as depression, hypochondriasis, dissociative states, temporal lobe epilepsy, and early schizophrenia. It also often occurs as a result of a traumatic experience. The extreme form is called **depersonalization syndrome**.

**depersonalization disorder** a DISSOCIATIVE DISORDER characterized by one or more episodes of depersonalization severe enough to impair social and occupational functioning. Onset of depersonalization is rapid and usually manifested in a sensation of self-estrangement, a feeling that one's extremities are changed in size, a sense of being mechanical, a perception of oneself as if from a distance, and, in some cases, a feeling that the external world is unreal (DEREALIZATION).

**depersonalization syndrome** see DEPERSONALIZATION.

**depersonification** *n.* **1.** treatment of another person as something other than the unique individual that he or she really is. For example, parents may treat their child as an extension of themselves, which leads to the child having a distorted sense of self. **2.** in psychoanalytic theory, a stage in the maturation of the SUPEREGO that follows INTROJECTION of parental IMAGOS and leads to integration of parental values as abstract ideas. —**depersonify** *vb.*

**depletive treatment** a type of treatment that involves deliberately weakening the organism and thereby (it is supposed) depleting it of some substance believed to be harmful, as by bleeding, purging, blistering, or making the patient vomit. Depletive treatment originated in the time of Greek physician Hippocrates (c. 460–c. 377 BCE) and was practiced for many centuries. More recently, certain psychiatric disorders have been treated by depletive therapies, as in various shock therapies.

**Deplin** *n.* a trade name for L-METHYLFOLATE.

**deployment psychology** a branch of MILITARY PSYCHOLOGY devoted to understanding and addressing the unique mental and behavioral health needs of members of the armed forces and their families during and after members' posting to combat zones and other operational environments. Research in this area focuses on (a) the psychosocial effects on military personnel and their families of combat exposure and of injuries sustained in combat, including disfigurement, amputation, sensory loss, TRAUMATIC BRAIN INJURY, and other severe wounds; (b) barriers to accessing mental health care in the military and the efficacy of existing prevention and intervention programs; (c) the psychology of trauma and promotion of RESILIENCE among military personnel and their families; and (d) the process of readjusting to family, community,

and general civilian life for returning military personnel. Similarly, clinical services focus on (a) treating posttraumatic stress disorder, anxiety disorder, adjustment disorder, depression, substance abuse, and other mental health disorders common among returning military personnel; (b) mitigating the negative effects of these disorders on the families of those affected; (c) mitigating the stress experienced by families while military personnel are deployed; (d) teaching effective coping skills—such as anger management, conflict resolution, and communication techniques—to returning soldiers and their families to better prepare them to handle interpersonal difficulties that may arise; and (e) using STRESS-INOCULATION TRAINING and other strategies during deployment to enhance the psychological well-being of soldiers and thus prevent the subsequent development of serious problems.

**depolarization** *n.* a reduction in the electric potential across the plasma membrane of a cell, especially a neuron, such that the inner surface of the membrane becomes less negative in relation to the outer surface. Depolarization occurs when the membrane is stimulated and sodium ions (Na<sup>+</sup>) flow into the cell. If the stimulus intensity exceeds the excitatory threshold of the neuron, an ACTION POTENTIAL is created and a nerve impulse propagated. Compare HYPERPOLARIZATION.

**Depo-Provera** *n.* a trade name for medroxyprogesterone acetate, an ANTIANDROGEN used as a long-acting contraceptive for women and in the treatment of sex offenders. See CHEMICAL CASTRATION.

**deprenyl** *n.* see SELEGILINE.

**depressant** **1.** *adj.* having the quality of diminishing or retarding a function or activity of a body system or organ. **2.** *n.* any agent that has this quality, especially a CNS DEPRESSANT.

**depressed skull fracture** a skull fracture in which part of the skull is pressed in toward the brain. In some cases, skull fragments may enter the brain tissue.

**depression** *n.* **1.** a negative affective state, ranging from unhappiness and discontent to an extreme feeling of sadness, pessimism, and despondency, that interferes with daily life. Various physical, cognitive, and social changes also tend to co-occur, including altered eating or sleeping habits, lack of energy or motivation, difficulty concentrating or making decisions, and withdrawal from social activities. It is symptomatic of a number of mental health disorders. **2.** in psychiatry and psychology, any of the DEPRESSIVE DISORDERS. —**depressed** *adj.*

**depression stage** the fourth of the five STAGES OF GRIEF described by Elisabeth KÜBLER-ROSS. It is characterized by feelings of sadness, loss, regret, or uncertainty that typically represent, consciously or nonconsciously, some level of acceptance in facing one's own or another's impending or actual death or some other great loss or trauma.

**depressive anxiety** in psychoanalytic theory, anxiety provoked by fear of one's own hostile feelings toward others. It is based on the theory that depression is hostility turned inward.

**depressive disorder** in DSM-IV-TR and DSM-5, any of the mood disorders that typically have sadness as the predominant symptom. They primarily include MAJOR DEPRESSIVE DISORDER and DYSTHYMIC DISORDER.

**depressive episode** see MAJOR DEPRESSIVE EPISODE.

**depressive neurosis** a former name for DYSTHYMIC DISORDER.

**depressive personality disorder** a diagnosis in the appendix of *DSM-IV-TR* (i.e., proposed but not given official recognition in the manual) that is characterized by glumness, pessimism, a lack of joy, the inability to experience pleasure, and motor retardation. Feelings of loss, a sense of giving up, and an orientation to pain are notable. There are vegetative signs, despair regarding the future, and a disheartened outlook. Clinicians attempt to differentiate this disorder from DYSTHYMIC DISORDER. Mention of the diagnosis has been removed from *DSM-5*.

**depressive position** in the OBJECT RELATIONS THEORY of Melanie KLEIN, the stage of infant development that reaches its peak at about 6 months of age. In the depressive position, the infant begins to perceive the GOOD OBJECT and BAD OBJECT as a single whole and feels guilt for having attacked the good object during the preceding PARANOID-SCHIZOID POSITION. In this—Klein's most mature—phase of primary psychological organization, the infant fears that he or she will lose or destroy the good object and attempts to make REPARATION for earlier hostility. It is thought that maintenance of the depressive position fluctuates throughout the lifespan and that the lack of capacity for this position is tied to severe pathology.

**depressive reaction** see REACTIVE DEPRESSION.

**depressive spectrum** the range of severity and disparate symptoms that characterize DEPRESSIVE DISORDERS. The underlying concept is that depression is a continuum of related disorders, rather than a single diagnostic entity.

**depressor nerve** an afferent nerve that depresses motor or glandular activity when stimulated, for example, a nerve that causes a fall in blood pressure via a brainstem reflex.

**deprivation** *n.* 1. the removal, denial, or unavailability of something needed or desired. See CULTURAL DEPRIVATION; MATERNAL DEPRIVATION. 2. in CONDITIONING, reduction of access to or intake of a REINFORCER. —**deprive** *vb.*

**deprivation index** a measure of the degree of inadequacy in a child's intellectual environment with respect to such variables as achievement expectations, incentives to explore and understand the environment, provision for general learning, emphasis on language development, and communication and interaction with significant adult role models.

**deprogramming** *n.* the process by which people who have adopted profoundly new sets of attitudes, beliefs, and values have their original attitudes, beliefs, and values restored. Deprogramming techniques are typically used on people who have left or been removed from highly coercive social groups, such as religious cults. See also BRAINWASHING.

**depth cue** any of a variety of means used to inform the visual system about the depth of a target or its distance from the observer. **Monocular cues** require only one eye and include signals about the state of the CILIARY MUSCLES, ATMOSPHERIC PERSPECTIVE, LINEAR PERSPECTIVE, and occlusion of distant objects by near objects. **Binocular cues** require integration of information from the two eyes and include signals about the CONVERGENCE of the eyes and BINOCULAR DISPARITY.

**depth-first search** a GRAPH search strategy, equivalent to BACKTRACK SEARCH, that considers states in a graph re-

cursively. The search is often organized by a "stack" or "last in first out" data structure.

**depth from motion** a DEPTH CUE obtained from the distance that an image moves across the retina. Motion cues are particularly effective when more than one object is moving. Depth from motion can be inferred when the observer is stationary and the objects move, as in the KINETIC DEPTH EFFECT, or when the objects are stationary but the observer's head moves, inducing MOTION PARALLAX.

**depth from shading** a DEPTH CUE obtained from the pattern of light and shadow on an illuminated solid object. The shading alone, without any outline of an object, can also convey a sense of three-dimensional depth.

**depth interview** an interview designed to reveal an individual's deep-seated feelings, attitudes, opinions, and motives by encouraging him or her to express them freely without fear of disapproval or concern about the interviewer's reactions. Such interviews may be conducted, for example, in counseling and as part of qualitative market research. They tend to be relatively lengthy, unstructured, one-on-one conversations.

**depth-of-processing hypothesis** the theory that the strength of memory depends on the degree of cognitive processing the material receives. Depth has been defined variously as ELABORATION, the amount of cognitive effort expended, and the distinctiveness of the MEMORY TRACE formed. This theory evolved from an expanded empirical investigation of the LEVELS-OF-PROCESSING MODEL OF MEMORY. [expounded in 1972 by Canadian psychologist Fergus I. M. Craik (1935– ) and Robert S. Lockhart and in 1975 by Craik and Endel TULVING]

**depth-oriented brief therapy** a form of brief psychotherapy that applies principles of CONSTRUCTIVIST PSYCHOTHERAPY in a time-limited fashion.

**depth perception** awareness of three-dimensionality, solidity, and the distance between the observer and the object. Depth perception is achieved through such cues as ATMOSPHERIC PERSPECTIVE, MOTION PARALLAX, visual ACCOMMODATION, BINOCULAR DISPARITY, and CONVERGENCE. See also VISUAL CLIFF.

**depth psychology** a general approach to psychology and psychotherapy that focuses on unconscious mental processes as the source of emotional disturbance and symptoms, as well as of personality, attitudes, creativity, and lifestyle. Typical examples are CLASSICAL PSYCHOANALYSIS and PSYCHODYNAMIC PSYCHOTHERAPY, but others include Carl JUNG's ANALYTIC PSYCHOLOGY and Alfred ADLER's INDIVIDUAL PSYCHOLOGY.

**depth therapy** any form of psychotherapy, brief or extended, that involves identifying and working through unconscious conflicts and experiences that underlie and interfere with behavior and adjustment. Compare SURFACE THERAPY.

**Deracyn** *n.* a trade name for ADINAZOLAM.

**derailment** *n.* a symptom of thought disorder, often occurring in individuals with schizophrenia, marked by frequent interruptions in thought and jumping from one idea to another unrelated or indirectly related idea. It is usually manifested in speech (**speech derailment**) but can also be observed in writing. Derailment is essentially equivalent to LOOSENING OF ASSOCIATIONS. See COGNITIVE DERAILMENT; THOUGHT DERAILMENT.



**derangement** *n.* **1.** disturbance in the regular order or normal functioning of something. **2.** loosely, mental illness or mental disturbance.

**derealization** *n.* a state characterized by a diminished feeling of reality; that is, an alteration in the perception or cognitive characterization of external reality so that it seems strange or unreal ("This can't be happening"), often due to trauma or stress. It may also occur as a feature of schizophrenia or of dissociative disorders. See also DEPERSONALIZATION.

**dereflection** *n.* a common technique used to allay anxiety or stop inappropriate behavior by diverting attention to a different topic and away from the self. It is used to reduce excessive self-concern and shyness and is a central component in MORITA THERAPY.

**dereism** *n.* mental activity that is not in accord with reality, experience, or logic. It is similar to AUTISTIC THINKING. Also called **dereistic thinking**.

**derivation sample** see CROSS-VALIDATION.

**derivative** *n.* in calculus, a measure of the change in a variable that results from change in another variable. Compare INTEGRAL.

**derived ideas** ideas that have causes outside the mind and thus derive from external sources, such as particular sense impressions. René DESCARTES distinguished between derived ideas and INNATE IDEAS, which arise from processes of thought that occur naturally in the mind. According to Descartes, derived ideas are less clear and distinct, and less obviously trustworthy, than innate ideas. See CARTESIANISM; CARTESIAN SELF.

**derived need** see SECONDARY NEED.

**derived property** in GESTALT PSYCHOLOGY, a property taken on by a part of a whole by virtue of its being in a particular configuration or context. For example, if three non-collinear dots are seen as forming a triangle, each dot then has the derived property of being a vertex of the triangle.

**derma** *n.* the skin, particularly the DERMIS.

**dermal sensation** see CUTANEOUS EXPERIENCE.

**dermal sensitivity** the cutaneous sensations detected by nerve receptors in the skin.

**dermato-** (**dermo-**) *combining form* skin.

**dermatoglyphics** *n.* the study of the patterns of lines on the skin of the fingers, palms, and soles. The technique is used in the diagnosis of certain kinds of chromosomal abnormalities, based on observations that some patterns are associated with certain types of birth defects or disorders. For example, people with Down syndrome have a single crease across the palm and a single crease on the skin of the little (fifth) finger. [coined in 1926 by U.S. anatomist Harold Cummins (1894–1976)]

**dermatographism** *n.* a kind of HIVES due to physical allergy in which a pale raised welt or wheal with a red flare on each side appears when the skin is scratched with a dull instrument. Also called **autographism**; **dermographia**.

**dermatological disorder** any disorder or disease of the skin. See also PSYCHOCUTANEOUS DISORDER.

**dermatome** *n.* **1.** an area of skin that is innervated primarily by fibers from the dorsal root of a particular SPINAL NERVE. **2.** a surgical instrument for removing thin slices of skin to be used as skin grafts or for removing lesions.

**dermis** *n.* the layer of skin beneath the outermost layer (EPIDERMIS). The dermis contains blood and lymphatic vessels, nerves and nerve endings, and the hair follicles. —**dermal** *adj.*

**dermographia** *n.* see DERMATOGRAPHISM.

**dermo-optical perception (DOP)** an alleged ability to see by touch alone, often associated with identifying the color of objects. U.S. psychologist Richard P. Youtz (1910–1986) suggested that people with this ability detect colors by means of temperature differences due to reflection of hand heat or other heat from the object. Also called **cutaneous perception of color**.

**DES 1.** abbreviation for DIETHYLSTILBESTROL. **2.** abbreviation for DYSEXECUTIVE SYNDROME.

**descending pathway 1.** a NEURAL PATHWAY from a higher center that modulates sensory input, such as tracts from the cerebral cortex to the spinal cord that gate pain input (see SPINAL GATE). **2.** see DESCENDING TRACT.

**descending reticular system** part of the RETICULAR FORMATION that receives information from the hypothalamus and is involved in activity of the autonomic nervous system. It also plays a role in motor activity.

**descending tract** a bundle of nerve fibers that carries motor impulses from the brain to the spinal cord. There are three major descending tracts: the CORTICOSPINAL TRACT, VESTIBULOSPINAL TRACT, and reticulospinal tract. Also called **descending pathway**. Compare ASCENDING TRACT.

**descent group** any social group, such as a CLAN, PHRATRY, or SEPT, in which membership depends on real or supposed descent from a common ancestor. The group may be defined by UNILATERAL DESCENT (as in a PATRIARCHY or MATRIARCHY) or BILATERAL DESCENT. See also KINSHIP NETWORK.

**deschooling** *n.* an informal movement in the late 1960s and 1970s that criticized the formal educational system for emphasizing a narrow idea of academic knowledge and ignoring people's real-life experience and the wider social context in which all learning takes place. Such thinkers and polemicists as Austrian-born U.S. writer Ivan Illich (1926–2002) sought to separate education from its institutional context and to promote the idea of informal lifelong learning. —**deschool** *vb.*

**descriptive approach** see TOPOGRAPHIC MODEL.

**descriptive average** an estimate of the center point of a set of values, indicating where information "piles up," that is sometimes made on the basis of imprecise or partial data. For example, a teacher could provide a descriptive average (e.g., 75%) that indicates how most people performed on an exam.

**descriptive behaviorism** an approach to the study of behavior espoused by B. F. SKINNER, who thought that psychology should limit itself to a description of behaviors of organisms, the conditions under which they occur, and their effects on the environment. It requires that theoretical explanations in terms of underlying biological or hypothetical psychological processes be avoided. See BEHAVIORISM; RADICAL BEHAVIORISM.

**descriptive discriminant analysis** a statistical procedure that distinguishes between two or more groups of a categorical outcome on the basis of several initial explanatory or PREDICTOR VARIABLES. The focus is on a set of standardized weights that link each initial variable to the

grouping variable; high weights (in absolute value) indicate variables that tend to differ across the groups. For example, a researcher may want to study what differentiates those who survive cancer from those who do not by using a set of background variables, such as age, weight, frequency of saturated fat in the diet, and family history of cancer. The descriptive discriminant analysis may reveal negative standardized weights in the moderate to high range, suggesting that within the sample examined more family history of cancer, older age, higher weight, and more saturated fat in the diet are significantly linked with a lower chance of surviving cancer. Compare PREDICTIVE DISCRIMINANT ANALYSIS.

**descriptive grammar** see PRESCRIPTIVE GRAMMAR.

**descriptive norm** any of various consensual standards (SOCIAL NORMS) that describe how people typically act, feel, and think in a given situation. These standards delineate how most people actually do behave, whereas INJUNCTIVE NORMS prescribe how they should behave.

**descriptive operant** in experimental studies of behavior, the formal, physical requirements for reinforcement (see OPERANT). For example, the descriptive operant for pressing a lever might be as follows: Any action on the part of the organism that exerts a force on the lever of 0.2 N through a distance of 5 mm will be reinforced. Compare FUNCTIONAL OPERANT.

**descriptive research** an empirical investigation designed to test prespecified hypotheses or to provide an overview of existing conditions, and sometimes relationships, without manipulating variables or seeking to establish cause and effect. For example, a survey undertaken to ascertain the political party preferences of a group of voters would be a descriptive study because it is intended simply to identify attitudes rather than systematically infer or analyze influencing factors.

**descriptive responsibility** the judgment that a defendant has performed an illegal act, as opposed to the judgment that he or she can be ascribed CRIMINAL RESPONSIBILITY. Compare ASSCRIPTIVE RESPONSIBILITY.

**descriptive science** see NORMATIVE SCIENCE.

**descriptive statistics** procedures for depicting the main aspects of sample data, without necessarily inferring to a larger population. Descriptive statistics usually include the MEAN, MEDIAN, and MODE to indicate CENTRAL TENDENCY, as well as the RANGE and STANDARD DEVIATION that reveal how widely spread the scores are within the sample. Descriptive statistics could also include charts and graphs such as a FREQUENCY DISTRIBUTION or HISTOGRAM, among others. Compare INFERENTIAL STATISTICS.

**deseasonalization** *n.* the process of removing short-term cyclical variations in a TIME SERIES to reveal the underlying trend. For example, a marketing researcher may want to investigate whether a particular advertising strategy increased sales, after removing the fluctuations in the data that have to do with the time of year (e.g., holiday sales, summer spending). Compare DETRENDING.

**desegregation** *n.* the ending of the physical and social separation of groups in schools, neighborhoods, workplaces, and public settings, through legal mandates and social programs deliberately designed to remove barriers to intergroup contact.

**desensitization** *n.* a reduction in emotional or physical reactivity to stimuli that is achieved by such means as

DECONDITIONING techniques. See also COVERT DESENSITIZATION; IN VIVO DESENSITIZATION; SYSTEMATIC DESENSITIZATION.

**desensitizing** *n.* see DEHOAXING.

**desertion** *n.* see ABANDONMENT.

**desexualization** *n.* in psychoanalytic theory, the elimination or NEUTRALIZATION of a sexual aim. See also SUBLIMATION. —**desexualize** *vb.*

**design** *n.* the format of a research study, describing how it will be conducted and the data collected. For example, an EXPERIMENTAL DESIGN involves an INDEPENDENT VARIABLE and at least two groups, a treatment or EXPERIMENTAL GROUP and a CONTROL GROUP, to which participants are randomly assigned and then assessed on the DEPENDENT VARIABLE. A variety of other design types exist, including CORRELATIONAL RESEARCH, QUASI-EXPERIMENTAL DESIGNS, LONGITUDINAL DESIGNS, NATURAL EXPERIMENTS, and OBSERVATIONAL STUDIES, among others.

**design and behavior** see ARCHITECTURAL PSYCHOLOGY.

**designer children** see PRESELECTION.

**designer drug** a drug synthesized or manufactured to have the same or similar effects as a known illicit substance. The intention behind the creation of designer drugs is to circumvent existing legal definitions of controlled substances and thus avoid restrictions on use.

**design fluency test** any of a group of tests in which participants must generate (within a given time) a series of figures that have specific criteria. The tests were developed to provide clinical information regarding nonverbal capacity for flexibility and planning similar to VERBAL FLUENCY TESTS. For example, participants may be required to produce figures from five lines and must devise new ways to put the lines together in an organized manner to make new figures or designs. Also called **figural fluency test**.

**design for adjustable range** the practice of designing equipment so that it can be adjusted to suit the physical characteristics of a large portion of the population. Compare DESIGN FOR THE AVERAGE; UNIVERSAL DESIGN.

**design for the average** the principle that equipment for human use should be designed for average human dimensions, thereby sacrificing the extreme dimensions (e.g., below the 5th and above the 95th percentiles). Although no truly "average" person exists, this principle is used when adjustable designs cannot be developed and it is impossible or impracticable to design for the extremes. Compare DESIGN FOR ADJUSTABLE RANGE; UNIVERSAL DESIGN.

**design matrix** a grid of data whose elements denote the presence or absence of each participant (row) in a treatment (column) of an experimental study.

**design trade-off** the situation in which one attribute of a system or product is made less usable because another attribute has been given priority. An example is the child-resistant safety cap. The press-and-turn requirement may be frustrating at times, but its purpose of preventing a child's easy access to, and accidental ingestion of, harmful substances is considered to be a greater benefit.

**desipramine** *n.* a TRICYCLIC ANTIDEPRESSANT and the principal metabolic product of the demethylation of IMIPRAMINE in the liver. Desipramine is a stronger inhibitor of norepinephrine reuptake than of serotonin reuptake rela-

tive to imipramine. In general, it is less sedating and has fewer ANTICHOLINERGIC EFFECTS than imipramine and was frequently used to treat behavior disorders and insomnia in children. However, like all tricyclic antidepressants, it has fallen into relative disuse as safer medications have become available. U.S. trade name: **Norpramin**.

**deskillling** *n.* the redesign of tasks in an organization so that they require less knowledge, skill, and ability and take less time to learn. Deskillling is often a consequence of technological and organizational change; it often results in a loss of employee motivation. —**deskill** *vb.*

**desmopressin** *n.* a synthetic analog of the pituitary hormone VASOPRESSIN that, among other functions, stimulates water retention. Desmopressin is used in pill form or in the form of a nasal spray to treat nocturnal enuresis (bed-wetting) and DIABETES INSIPIDUS. It possesses more antidiuretic activity (i.e., prevents excessive water loss from the body) and less potential to raise blood pressure than vasopressin. U.S. trade name (among others): **DDAVP**.

**desocialization** *n.* gradual withdrawal from social contacts and interpersonal communication, as commonly occurs in those who have schizophrenia or other severe mental illness.

**Desoxyn** *n.* a trade name for METHAMPHETAMINE.

**despair** *n.* **1.** the emotion or feeling of hopelessness, that is, that things are profoundly wrong and will not change for the better. Despair is one of the most negative and destructive of human affects, and as such it is a primary area for psychotherapeutic intervention. **2.** in ERIKSON'S EIGHT STAGES OF PSYCHOSOCIAL DEVELOPMENT, see INTEGRITY VERSUS DESPAIR.

**despondency** *n.* a state characterized by feelings of hopelessness and despair. —**despondent** *adj.*

**destiny and growth beliefs** two contrasting sets of beliefs about the outcomes of romantic relationships. Those who endorse **destiny theories** generally believe that relationships succeed or fail because two people are either inherently compatible or not. As a result, when problems occur, destiny theorists are more likely to conclude that the relationship was "not meant to be." People who endorse **growth theories**, in contrast, believe that relationships thrive when partners overcome challenges and obstacles. Thus, when problems arise, they put additional effort into making their relationship work. [first identified by U.S. social psychologist C. Raymond Knee]

**destructiveness** *n.* a tendency toward the expression of aggressive behavior by destroying, damaging, or defacing objects. See also SELF-DESTRUCTIVENESS.

**destructive obedience** compliance with the direct or indirect orders of a social, military, or moral authority that results in negative outcomes, such as injury to innocent victims, harm to the community, or the loss of confidence in social institutions. Examples of destructive obedience include soldiers obeying orders to attack civilians, medical personnel following a doctor's orders even when they know the doctor is mistaken, and participants complying with the experimenter in Stanley MILGRAM's classic BEHAVIORAL STUDY OF OBEDIENCE. Compare CONSTRUCTIVE OBEDIENCE.

**desymbolization** *n.* the process of depriving symbols, especially words, of their accepted meanings and substituting distorted, neologistic, autistic, or concrete ideas for them.

**desynchronization** *n.* in electroencephalography, the replacement of occipital ALPHA WAVES by the fast, low-amplitude, irregular waveforms characteristic of alert wakefulness, often because of an external stimulus, usually one that requires active attention. Other brain waves can be desynchronized as well, as for example when activity of DELTA WAVES is suppressed by dreaming during sleep. See ALPHA BLOCKING.

**desynchronized sleep** see REM SLEEP.

**Desyrel** *n.* a trade name for TRAZODONE.

**DET** diethyltryptamine: a synthetic HALLUCINOGEN belonging to the indolealkylamine family, to which LSD, PSILOCIN, and DMT also belong.

**detached character** a personality characterized by extreme self-sufficiency and lack of feeling for others. Karen D. HORNEY identified the development of such a character as one of three basic NEUROTIC TRENDS used as a defense against BASIC ANXIETY. Compare AGGRESSIVE CHARACTER; COMPLIANT CHARACTER.

**detached retina** the separation of the inner layer of the RETINA (the neural retina) from the outer PIGMENT EPITHELIUM layer. The onset of symptoms, depending on the size and site of the detachment, may include flashes of light followed by a clouding of vision, the appearance of spots or visual artifacts before the eye (known as **floaters**), or a sudden complete loss of vision. Detached retina is usually treated by surgery. Also called **retinal detachment**. See also DIABETIC RETINOPATHY.

**detachment** *n.* **1.** a feeling of emotional freedom resulting from a lack of involvement in a problem or situation or with a person. **2.** objectivity: that is, the ability to consider a problem on its merits alone. Also called **intellectual detachment**. **3.** in developmental psychology, the child's desire to have new experiences and develop new skills. This occurs at about 2 years of age, as the child begins to outgrow the period of total attachment to and dependence on the parent or caregiver.

**detailed inquiry** a phase of a CLINICAL INTERVIEW during which the therapist gains an understanding of the patient by asking direct questions on diverse topics, ranging from mundane questions about everyday life to highly detailed questions, for example, about particular reactions to specific events.

**detail perspective** a DEPTH CUE related to texture. Features or details on a surface appear closer together on a distant object and farther apart on a near object.

**detection task** see SIGNAL DETECTION TASK.

**detection theory** see SIGNAL DETECTION THEORY.

**detection threshold** see ABSOLUTE THRESHOLD.

**deterioration** *n.* progressive impairment or loss of basic functions, such as emotional, judgmental, intellectual, muscular, and memory functions.

**deterioration effect** an adverse effect or negative outcome from participating in psychotherapy.

**deterioration index** a pattern of subtest scores on the WECHSLER ADULT INTELLIGENCE SCALE viewed as suggestive of declines from baseline functioning and used in measuring the degree of reduced performance that can be attributed to a variety of pathologies, including schizophrenia, multiple sclerosis, and dementia. Also called **deteriora-**

**tion quotient.** See also DON'T-HOLD FUNCTIONS; HOLD FUNCTIONS.

**deterioration of attention** inconstant and shifting attention and impaired ability to concentrate on external reality.

**deterioration quotient** see DETERIORATION INDEX.

**determinant** *n.* **1.** any internal or external condition that is the cause of an event. **2.** a value that represents the generalized variance in a MATRIX of numbers, with large values indicating that the matrix numbers are very dissimilar and thus have more varied information. A determinant can be calculated by multiplying the EIGENVALUES of a matrix by one another.

**determinant of elaboration** any factor that influences the amount of ELABORATION a person engages in when encountering attitude-relevant information. Such factors may regulate ability to elaborate (e.g., distractions in the social context) or motivation to elaborate (e.g., the personal relevance of the ATTITUDE OBJECT). See also ELABORATION-LIKELIHOOD MODEL.

**determination** *n.* **1.** a mental attitude characterized by a strong commitment to achieving a particular goal despite barriers and hardships. **2.** the process of making a decision, reaching a conclusion, or ascertaining the characteristics or exact nature of something, or the end result of such a process. **3.** the precise definition or qualification of the attributes of a concept or proposal (e.g., determination of the dependent variable in an experiment).

**determination coefficient** see COEFFICIENT OF DETERMINATION.

**determiner** *n.* in linguistics, a word that appears with a noun or pronoun and limits (determines) its reference in some way, such as *a*, *the*, *this*, *that*, *some*, *all*, *any*, *every*, and so on. Numbers (as in *three cats*) and personal pronouns (as in *her cats*) can also be determiners. See also ARTICLE; QUANTIFIER.

**determining tendency** a goal or intended result that directs mental processes. For example, when shown the numbers 6 and 4 and asked to add them, a person answers 10, but when asked to subtract them, he or she answers 2; the same stimuli lead to different thoughts as intended ends determine what the mind does with the two numbers. The term, introduced by German psychologist Narziss Ach (1871–1946) and derived from the earlier concept of AUFGABE, is essentially equivalent to the modern MENTAL SET.

**determinism** *n.* the philosophical position that all events, physical or mental, including human behavior, are the necessary results of antecedent causes or other forces. Determinism, which requires that both the past and the future are fixed, manifests itself in psychology as the position that all human behaviors result from specific, efficient causal antecedents, such as biological structures or processes, environmental conditions, or past experience. The relationships between these antecedents and the behaviors they produce can be described by generalizations much like the laws that describe regularities in nature. Determinism contrasts with belief in FREE WILL, which implies that individuals can choose to act in some ways independent of antecedent events and conditions. Those who advocate free-will positions often adopt a position of SOFT DETERMINISM, which holds that free will and responsibility are compatible with determinism. Others hold that free will is illusory, a position known as HARD DETERMINISM. Of contemporary

psychological theories, BEHAVIORISM takes most clearly a hard determinist position. See also CAUSALITY; GENETIC DETERMINISM; PHYSICAL DETERMINISM; PSYCHIC DETERMINISM; PSYCHOLOGICAL DETERMINISM. Compare INDETERMINISM. —**determinist** *adj.*, *n.* —**deterministic** *adj.*

**deterministic model** a mathematical function in which the outcome can be exactly established. In other words, the model explains all of the variance in a DEPENDENT VARIABLE and no ERROR TERM is needed. This contrasts with a STOCHASTIC MODEL, from which a range of possible values may result.

**deterministic process** see STOCHASTIC PROCESS.

**deterministic psychology** any psychology that assumes DETERMINISM, most notably BEHAVIORISM.

**deterrence** *n.* the notion that punishing an individual who has committed an undesirable act, particularly a criminal one, will deter that person, as well as others, from committing such acts in the future. —**deter** *vb.* —**deterrent** *n.*, *adj.*

**deterrent therapy** see AVERSION THERAPY.

**detour problem** in studies of problem solving, any problem or task that must be solved or performed indirectly, often because the most direct solution is ineffective or blocked. Also called **Umweg problem**.

**detoxification** *n.* a therapeutic procedure, popularly known as **detox**, that reduces or eliminates toxic substances (e.g., alcohol, opioids) in the body. The procedure may be metabolic (by converting the toxic substance to a less harmful agent that is more easily excreted), or it may require induced vomiting, gastric lavage (washing), or dialysis, depending upon the nature of the poison and other factors. In many cases, detoxification occurs in a clinic, hospital unit, or residential rehabilitation center devoted to treating individuals for the toxic effects of alcohol or drug overdose and to managing their acute withdrawal symptoms; these facilities may also provide professional- or peer-run social support during the detox process (known as **social setting detoxification**). In the absence of this type of assistance, an individual who actively tries to manage his or her own withdrawal from a substance is said to be engaged in **self-detoxification**.

**detrending** *n.* the practice of removing a specific existing pattern from data, often collected in a TIME SERIES, in order to reveal other expected patterns or sequences in the data. DESEASONALIZATION is a similar process but removes the effect of seasonal shifts in the data.

**detumescence** *n.* the reduction of a swelling, especially in the genital organs of either sex following orgasm. Compare TUMESCENCE. —**detumescent** *adj.*

**Detussin** *n.* a trade name for a combination of HYDROCODONE and PSEUDOEPHEDRINE.

**deutan color blindness** a type of color blindness in which green hues are perceived imperfectly or green is confused with red. In some cases, the condition results from an ability to perceive only two distinct hues, blue and yellow.

**deutanomaly** *n.* a form of color blindness in which the green part of the spectrum is perceived inadequately. In testing for deutanomaly, an unusual amount of green would be required in a red–green mixture to match a given yellow.

**deutanopia** *n.* red–green color blindness in which the

deficiency is due to absence of the cone PHOTOPIGMENT sensitive to green light, resulting in loss of green sensitivity and confusion between red and green (see DICHROMATISM). The condition may be unilateral (i.e., color vision may be normal in one eye). See also PROTANOPIA.

**deutero-** (**deuter-**; **deut-**) *combining form* second or secondary. See COLOR BLINDNESS.

**deutoplasm** *n.* a substance, rich in protein and fat, that is laid down within the yolk of an egg cell to serve as nourishment for the embryo. It is absent from the egg cells of mammals, whose embryos absorb nutrients from their mothers via the placenta.

**devaluation** *n.* a DEFENSE MECHANISM that involves denying the importance of something or someone, including the self. —**devalue** *vb.*

**development** *n.* the progressive series of changes in structure, function, and behavior patterns that occur over the lifespan of a human being or other organism. —**developmental** *adj.*

**developmental acceleration** an abnormal or precocious growth in one or more functions (e.g., language).

**developmental age (DA)** a measure of development expressed in an age unit or AGE EQUIVALENT. For example, a 4-year-old child may have a developmental age of 6 in verbal skills.

**developmental amblyopia** a condition affecting central vision in which the early development of neural circuits for fine-pattern discrimination is disrupted due to inadequate detail in foveal imagery. There are two forms of developmental amblyopia: **anisometropic amblyopia**, in which the two eyes have differing powers of refraction, and **strabismic amblyopia**, in which the image from one eye is favored because of imbalance in the extrinsic EYE MUSCLES.

**developmental amnesia** impaired ability to form memories of past events (i.e., impaired EPISODIC MEMORY) due to a brain injury sustained early in life. Specifically, the injury is to the hippocampus but not to surrounding medial temporal lobe structures. In this condition, memory for factual information (i.e., SEMANTIC MEMORY) appears to remain largely intact.

**developmental aphasia** see DEVELOPMENTAL DYSPHASIA.

**developmental apraxia of speech (DAS)** a motor speech disorder in which a child has trouble saying correctly and consistently what he or she wants to say. It is not due to weakness or paralysis of the speech muscles (e.g., the muscles of the face, tongue, and lips), although the specific cause or causes remain unknown. Also called **articulatory apraxia**; **childhood apraxia of speech**; **developmental verbal dyspraxia (DVD)**.

**developmental articulation disorder** see PHONOLOGICAL DISORDER.

**developmental assessment** the evaluation of a child's level of physical, cognitive, emotional, and social development, as assessed by specific DEVELOPMENTAL SCALES.

**developmental-behavioral pediatrics** see BEHAVIORAL PEDIATRICS.

**developmental cognitive neuroscience** the area of study that seeks to understand how the mind and brain jointly develop. It uses data from a variety of sources, including molecular biology, cell biology, artificial intelli-

gence, and evolutionary theory, as well as conventional studies of cognitive development.

**developmental contextual model** see DEVELOPMENTAL SYSTEMS APPROACH.

**developmental coordination disorder** in DSM-IV-TR and DSM-5, a motor skills disorder characterized by marked impairment in the development of motor coordination, with performance of motor activities (e.g., walking, handwriting) well below that expected for the child's chronological age. Significant impairment of academic performance or daily living activities is also observed. However, the difficulties are not due to intellectual disability or to a neurological disorder affecting movement (e.g., cerebral palsy). See also DEVELOPMENTAL DYSPRAXIA.

**developmental crisis** see MATURATIONAL CRISIS.

**developmental delay** delay in the age at which developmental milestones are achieved by a child or delay in the development of communication, social, and daily living skills. It most typically refers to delays that are meaningful but do not constitute substantial handicap in infants, toddlers, and preschool children. Such individuals are often eligible for early intervention or preschool services to ameliorate these delays.

**developmental disability** a developmental level or status that is attributable to a cognitive or physical impairment, or both, originating before the age of 22. Such an impairment is likely to continue indefinitely and results in substantial functional or adaptive limitations. Examples of developmental disabilities include, but are not limited to, intellectual disability, pervasive developmental disorders, learning disorders, developmental coordination disorder, communication disorders, cerebral palsy, epilepsy, blindness, deafness, mutism, and muscular dystrophy. Also called **developmental disorder**.

**developmental dysgraphia** see DISORDER OF WRITTEN EXPRESSION.

**developmental dyslexia** a form of DYSLEXIA that is apparent during an early developmental age or phase and manifested as difficulty in learning to read and spell single words.

**developmental dysphasia** language difficulty or delayed language acquisition believed to be associated with brain damage or cerebral maturation lag. It is characterized by defects in expressive language and articulation and in more severe cases by defects in comprehension of language. Also called **developmental aphasia**.

**developmental dyspraxia** DYSPRAXIA present since birth and manifested during an early developmental age or phase as difficulty in performing coordinated movements. Compare ACQUIRED DYSPRAXIA.

**developmental factors** the conditions and variables that influence emotional, intellectual, social, and physical development from conception to maturity. Examples include parental attitudes and stimulation, peer relationships, learning experiences, recreational activities, and hereditary predispositions.

**developmental function** **1.** the form that development takes over time. Different aspects of development (e.g., physical vs. cognitive) may show different patterns of change over time. **2.** the role played by an entity (e.g., a gene), activity (e.g., play), stage (e.g., adolescence), or other phenomenon in the development of an organism.

**developmental immaturity** the status of a child who exhibits a delay (usually temporary) in reaching developmental landmarks without clinical or historical evidence of damage to the central nervous system. The child may appear younger than his or her chronological age in physical development, gross and fine motor abilities, language development, social awareness, or any combination of these. See also DEVELOPMENTAL DELAY; DEVELOPMENTAL RETARDATION.

**developmental invariance** a pattern of development in which a skill reaches adult competence early in life and remains stable thereafter. For example, certain sensory and perceptual skills (e.g., vision) function at a high level early in life.

**developmental language disorder** any disorder in which the development of language skills is impaired. See EXPRESSIVE LANGUAGE DISORDER; MIXED RECEPTIVE-EXPRESSIVE LANGUAGE DISORDER; SPECIFIC LANGUAGE IMPAIRMENT.

**developmental levels** the stages into which the human lifespan is typically divided: (a) neonatal period; (b) infancy; (c) early, middle, and late childhood; (d) adolescence; and (e) early, middle, and late adulthood.

**developmental measure** any assessment used to measure an age-associated dimension, such as motor development in young children. The BAYLEY SCALES OF INFANT AND TODDLER DEVELOPMENT is an example of a developmental measure.

**developmental milestone** any aspect of physical, cognitive, social, or emotional development that is significant and predictable, such that children throughout the world develop this ability, characteristic, or behavior at about the same time. Developmental milestones include presence of first teeth and language acquisition.

**developmental norm** the typical skills and expected level of achievement associated with a particular stage of development.

**developmental orientation** 1. in service-planning processes, an emphasis on the skills, abilities, and strengths of young people with disabilities in relation to expected developmental attainments and performance of young people without disabilities. 2. see DEVELOPMENTAL THEORY. Compare DEFECT ORIENTATION.

**developmental pharmacokinetics** see PHARMACOKINETICS.

**developmental psycholinguistics** see PSYCHOLINGUISTICS.

**developmental psychology** the branch of psychology that studies the changes—physical, mental, and behavioral—that occur from conception to old age and investigates the various biological, neurobiological, genetic, psychological, social, cultural, and environmental factors that affect development throughout the lifespan. Since its emergence as a formal discipline in the late 19th century, the field has broadened its focus from one that largely emphasized infant, child, and adolescent development to one, beginning in the 1920s, that also accounted for adult development and the aging process and, more recently, prenatal development. As such the term *developmental psychology* is now often considered virtually synonymous with LIFESPAN DEVELOPMENTAL PSYCHOLOGY. Over the years, numerous currents of thought and investigation have informed or shaped the field's direction, such as the CHILD STUDY MOVE-

MENT, psychoanalytic theory, learning theory, evolutionary theory, the development of intelligence measures (e.g., STANFORD-BINET INTELLIGENCE SCALE), genetic studies, TWIN STUDIES, research using LONGITUDINAL DESIGNS and CROSS-SECTIONAL DESIGNS, professional organizations and academic journals (e.g., *Developmental Psychology*, *Psychology and Aging*) devoted to understanding various aspects of the lifespan, and the explosion of brain research in recent decades. See also GENETIC PSYCHOLOGY.

**developmental psychopathology** the scientific study of the origins and progression of psychological disorders as related to the typical processes of human growth and maturation. Central to this field is the belief that studying departures from developmental NORMS will enhance understanding of those norms, which will in turn enhance the conceptualization and treatment of mental illness.

**developmental quotient (DQ)** the DEVELOPMENTAL AGE, or a substitute measure of development, divided by the CHRONOLOGICAL AGE.

**developmental readiness** a student's state of psychological and intellectual preparedness for a given task, subject, or grade level.

**developmental reading disorder** see READING DISORDER.

**developmental retardation** abnormally slow maturation in any or all areas—intellectual, motor, perceptual, linguistic, or social. See also DEVELOPMENTAL DELAY; DEVELOPMENTAL IMMATURITY.

**developmental scale** a measurement instrument used to assess the degree to which an individual has progressed through the typical DEVELOPMENTAL MILESTONES.

**developmental schedules** normative timetables of when certain aspects of physical and behavioral development typically occur (see DEVELOPMENTAL MILESTONE).

**developmental science** the interdisciplinary study of changes in the biopsychosocial dimensions of individuals over their lifespan and into successive generations.

**developmental sequence** the order in which changes in structure or function occur during the process of development of an organism.

**developmental stage** a period of development during which specific abilities, characteristics, or behavior patterns appear.

**developmental systems approach** the view that development is the result of bidirectional interaction between all levels of biological and experiential variables, from the genetic through the cultural. Also called **developmental contextual model**. See also BIDIRECTIONALITY OF STRUCTURE AND FUNCTION; TRANSACTIONAL MODEL OF DEVELOPMENT.

**developmental task** any of the fundamental physical, social, intellectual, and emotional achievements and abilities that must be acquired at each stage of life for normal and healthy development. Because development is largely cumulative, the inability to master developmental tasks at one stage is likely to inhibit development in later stages.

**developmental teaching model** a general approach in education based on the work of Jean PIAGET and others, emphasizing logical reasoning and the enhancement of intellectual development. There is an effort to orient school

curricula toward helping students acquire OPERATIVE KNOWLEDGE.

**Developmental Test of Visual–Motor Integration (VMI)** a measure of visuomotor development that requires the participant to copy onto blank pieces of paper geometric designs increasing in difficulty from a straight line to complex figures. The VMI is used to identify problems with visual perception, motor coordination, and visual–motor integration. It is available in two versions: the Short Format, containing 15 designs and appropriate for children ages 2 to 8 years, and the Full Format, containing 24 designs and appropriate for children of all ages and adults. [originally developed in 1967 by U.S. psychologists Keith E. Beery (1932–2010) and Norman A. Buktenica (1930– )]

**developmental theory** **1.** any theory based on the continuity of human development and the importance of early experiences in shaping personality. Examples are the psychoanalytic theory of PSYCHOSEXUAL DEVELOPMENT, ERIKSON'S EIGHT STAGES OF PSYCHOSOCIAL DEVELOPMENT, learning theories that stress early conditioning, and role theories that focus on the gradual acquisition of different roles in life. **2.** the proposition that intellectual disability is due to slower than normal development of cognitive processes but that such processes are not otherwise qualitatively different from those of people without intellectual disability. Also called **developmental orientation**. Compare DEFECT THEORY.

**developmental therapy** a method of treatment for children and adolescents with emotional, social, or behavioral problems. A series of graded experiences is used, for example, to help clients improve their interactions with others or manage anger.

**developmental toxicology** the study of the effects of toxic (poisonous) substances on the normal development of infants and children: specifically, the study of the adverse effects of certain agents administered to them or to which they may have been exposed in utero.

**developmental trauma disorder (DTD)** a new diagnosis for children who have been exposed in early life to multiple adverse interpersonal events, such as sexual or physical abuse, parental substance abuse, domestic or community violence, neglect, and abandonment. These experiences, termed **complex trauma**, have a pervasive and long-range influence on children's emotional, cognitive, behavioral, and psychobiological functioning that many clinicians believe is not adequately captured by POST-TRAUMATIC STRESS DISORDER or any other existing diagnosis.

Six domains of potential impairment related to complex trauma exposure have been delineated: (a) affect regulation, including difficulty modulating anger and self-destructiveness; (b) information processing, including difficulties with attention, concentration, learning, and consciousness (e.g., amnesias and dissociation); (c) self-concept, including guilt and shame; (d) behavioral control, including aggression and substance abuse; (e) interpersonal relationships, including problems with trust and intimacy; and (f) biological processes, including SOMATIZATION and delayed sensorimotor development. This multifaceted dysregulation can disrupt typical maturation, potentially leading to wide-ranging developmental delays and to persistently altered attributions and expectancies about the self, relationships, and others.

**developmental verbal dyspraxia (DVD)** see DEVELOPMENTAL APRAXIA OF SPEECH.

**developmental visual agnosia** see CONGENITAL VISUAL AGNOSIA.

**development cycle** in ergonomics, the process of developing a product or system, beginning with a formative idea and continuing through research, design, testing, and improvement to final release.

**deviance** *n.* **1.** any behavior that differs significantly from what is considered appropriate or typical for a social group. Also called **deviancy**. **2.** in statistics, a measure of the GOODNESS OF FIT between a smaller HIERARCHICAL MODEL and a fuller model that has all of the same parameters plus more. If the deviance reveals a SIGNIFICANT DIFFERENCE, then the larger model is needed. If the deviance is not significant, then the smaller, more parsimonious model is retained as more appropriate.

**deviance information criterion (DIC)** an index that reveals the DEVIANCE between HIERARCHICAL MODELS, whereby one model has a larger number of parameters than the other. It is similar to AKAIKE'S INFORMATION CRITERION and the BAYESIAN INFORMATION CRITERION but usually easier to calculate. In all three indices or criteria, a smaller value indicates a more acceptable model.

**deviancy training** the reinforcement, by the peers of a child or adolescent, of his or her antisocial words or actions. Deviancy training is a risk factor for increased aggression and delinquent behaviors.

**deviant sexuality** see SEXUAL DEVIANCE.

**deviant verbalization** see SCHIZOPHRENIC THINKING.

**deviate** *n.* in statistics, the extent to which a score differs from a specified value, such as the MEAN. Thus, a negative deviate from the mean indicates how much lower than average the score is, whereas a positive deviate from the mean indicates how much higher than average the score is.

**deviation** *n.* a significant departure or difference. This conceptually broad term has a variety of applications in psychology and related fields but most commonly refers to behavior that is significantly different from the accepted standard or norm, or to the arithmetical difference between one of a set of values and some fixed amount, generally the MEAN of the set or the value predicted by a model. See STANDARD DEVIATION.

**deviation IQ** the absolute measure of how far an individual differs from the mean on an individually administered IQ test. This is the approach now most commonly used in standard IQ tests. A reported deviation IQ is a standard score on an IQ test that has a mean of 100 and a standard deviation specific to that of the test administered, usually 15 or 16 for intelligence tests. The test scores represent a deviation from the mean score rather than a quotient, as was typical in the early days of IQ testing.

**deviation score** the difference between an observation or value  $x$  and the MEAN value (i.e.,  $x - \text{mean}$ ) in a set of data. The sum of the deviation scores for a given data set will equal zero, as approximately half of the values will be less than the mean and half will be greater than the mean. Also called **deviation value**.

**device for automated desensitization** a computerized system for applying DESENSITIZATION therapy to the treatment of focused phobic behavior. The device adminis-

ters visual or audio instructions for muscle relaxation and visualization of feared stimuli arranged in a hierarchical order. See also COVERT DESENSITIZATION; SYSTEMATIC DESENSITIZATION.

**devil's trumpet** see JIMSONWEED.

**DEX** abbreviation for Dysexecutive Questionnaire. See DYSEXECUTIVE SYNDROME.

**dexamethasone** *n.* a synthetic analog of CORTISOL, with similar biological action. It is used to treat nausea and vomiting and as an anti-inflammatory agent. U.S. trade name (among others): **Decadron**.

**dexamethasone suppression test (DST)** a test of the ability of dexamethasone, a synthetic analogue of CORTISOL, to inhibit the secretion of CORTICOTROPIN and hence suppress levels of cortisol in the blood. In the test, dexamethasone is administered, and after a waiting period, cortisol levels are assessed. In normal individuals, cortisol levels will be suppressed by dexamethasone. If cortisol is still elevated, the individual is categorized as a nonsuppressor. The test is a common research tool, but its primary clinical use is to aid in the diagnosis of Cushing's syndrome.

**dexamphetamine** *n.* see DEXTROAMPHETAMINE.

**Dexedrine** *n.* a trade name for DEXTROAMPHETAMINE.

**dexterity test** a manual test of speed and accuracy.

**dextrality** *n.* a tendency to use the right hand, arm, or leg in motor activities. See also RIGHT-HANDEDNESS. Compare SINISTRALITY.

**dextro-** (**dextr-**) *combining form* on or toward the right.

**dextroamphetamine** *n.* a sympathomimetic agent and CNS STIMULANT that is the dextrorotated form of the amphetamine molecule. It is used in the treatment of narcolepsy and attention-deficit/hyperactivity disorder. Like all AMPHETAMINES, it is prone to abuse and dependence. Also called **dexamphetamine**. U.S. trade names (among others): **Dexedrine**; **Adderall** (in combination with AMPHETAMINE).

**dextromethorphan** *n.* a synthetic OPIOID used clinically as a cough suppressant. Its mechanism of action is unknown, but it does bind to NMDA RECEPTORS and to SIGMA RECEPTORS. Dextromethorphan is a common ingredient in over-the-counter cough and cold preparations and is increasingly a drug of abuse, particularly among adolescents. Because it is metabolized extensively by the CYTOCHROME P450 (CYP) 2D6 liver enzyme, it is used in pharmacology as a comparison when calculating the degree to which certain drugs inhibit CYP enzymes. It should not be taken by individuals who are taking MONOAMINE OXIDASE INHIBITORS, and it should be used with caution by those taking inhibitors of the CYP2D6 enzyme (i.e., fluoxetine, paroxetine) because unexpectedly high plasma concentrations of either drug may occur (see ENZYME INHIBITION). Examples of some common U.S. proprietary products that include dextromethorphan are **Coricidin**, **Ny-Quil**, **Robitussin**, **Tylenol PM**, and **Vicks 44**. Dextromethorphan is also used in combination with quinidine to treat PSEUDOBULBAR AFFECT (U.S. trade name: **Neudexta**).

**dextrosinistral** *adj.* oriented or directed from the right side of the body to the left side.

**df** symbol for DEGREES OF FREEDOM.

**dharma** *n.* 1. in Hinduism, the principle of natural law

that sustains and governs the cosmos. In a narrower sense, the term denotes the social laws and customs that must be followed to achieve the right path of spiritual advancement. 2. in Buddhism, the cosmic law underlying the world of humans and, above all, the functioning of karmic rebirth (see KARMA). The term has multiple other meanings, including the truth as set out in the teachings of the Buddha, norms of behavior and ethical rules, the manifestation of reality, and the content of human thought. [Sanskrit, literally: "carrying, holding"]

**dhat** *n.* a CULTURE-BOUND SYNDROME specific to India. Dhat involves severe anxiety and hypochondriacal concerns about the discharge of semen, whitish discoloration of the urine, and feelings of weakness and exhaustion. It is similar to SHEN-K'UEI.

**DHE 45** a trade name for DIHYDROERGOTAMINE.

**DHT** abbreviation for DIHYDROXYTRYPTAMINE.

**di-** *prefix* twice or double.

**dia-** *prefix* through, across, or apart.

**diabetes insipidus** a metabolic disorder marked by a deficiency of VASOPRESSIN (antidiuretic hormone), which promotes the reabsorption of water from the kidney tubules. The patient experiences excessive thirst and excretes large amounts of urine but without the high level of sugar found in the urine of people with diabetes mellitus. See also NEPHROGENIC DIABETES INSIPIDUS.

**diabetes mellitus** a metabolic disorder caused by ineffective production or utilization of the hormone INSULIN. Because of the insulin disruption, the patient is unable to oxidize and utilize carbohydrates in food. Glucose accumulates in the blood, causing weakness, fatigue, and the appearance of sugar in the urine. Fat metabolism is also disrupted so that end products of fat metabolism (ketones) accumulate in the blood. There are two major types of the disorder. **Type 1 diabetes**, formerly called **insulin-dependent diabetes mellitus (IDDM)**, is characterized by a complete or near complete absence of endogenous insulin secretion, requiring patients to take daily insulin injections and to carefully manage the timing and size of their daily food intake to control their blood glucose levels; because this type usually occurs during childhood or early adolescence, it was formerly also called **juvenile-onset diabetes** (or **juvenile diabetes**). **Type 2 diabetes**, formerly called **non-insulin-dependent diabetes mellitus (NIDDM)**, is characterized by reduced secretion of or resistance to insulin in the body and may be manageable through diet alone. In the past, it typically occurred in adulthood (and was formerly also called **adult-onset diabetes**); however, with the rise in childhood obesity, a significant risk factor for the disorder, Type 2 diabetes is increasingly seen in children as well as adults.

**diabetic enteropathy** a gastrointestinal complication of diabetes mellitus, marked by intermittent occurrence of nocturnal fecal incontinence. The condition is often associated with autonomic and peripheral neuropathy and is regarded as one of several manifestations of visceral neuropathy in people with diabetes. See also GASTRIC NEUROPATHY.

**diabetic gastropathy** any disorder of the stomach or related digestive organs that is due primarily to the effects of diabetes on the autonomic nervous system. See also GASTRIC NEUROPATHY.

**diabetic retinopathy** deterioration of the retina as a



complication of diabetes mellitus, marked by tiny ANEURYSMS of the retinal capillaries. These first appear as small venous dilations and red dots, observed during ophthalmological examination; they progress to retinal hemorrhages and exudates that impair vision. New, abnormal vessels may form in the vitreous cavity and may also hemorrhage. DETACHED RETINA is a complication. Treatment includes control of diabetes and hypertension, laser photocoagulation, and vitreous surgery.

**diacetylmorphine** *n.* the chemical name for HEROIN. A synthetic analog of MORPHINE (produced by substituting acetyl groups for hydroxyl groups at two positions on the morphine molecule), it is, like morphine and CODEINE, a pure opioid agonist, activating receptors for endorphins and enkephalins (see ENDOGENOUS OPIOID). Diacetylmorphine has a rapid onset of action and a duration of action similar to that of morphine; however, it is three times more potent than morphine. In Great Britain and Canada, it is used clinically in the management of severe pain—for example, in terminally ill patients—but it is not legally available in the United States due to concerns about its potential for abuse. Also called **diamorphine**. See OPIOID ANALGESIC.

**diachronic linguistics** the study of languages as they change over time, as practiced in PHILOLOGY or COMPARATIVE LINGUISTICS. This is often contrasted with **synchronic linguistics**, the study of languages or (more often) a particular language at a single point in time, with no reference to historical or developmental factors. The synchronic approach to language is the basis of linguistic STRUCTURALISM. [introduced by Swiss linguist Ferdinand de Saussure (1857–1913)]

**diachronic universal** see PSYCHOLOGICAL UNIVERSAL.

**diacritical marking system (DMS)** a unified arrangement or series of symbols used to denote phonetic sounds.

**diadochokinesis** *n.* the ability to rapidly perform repetitive muscular movements, such as finger tapping or pursing and retracting the lips. This ability is often examined during clinical assessments of motor behavior.

**diagnosis (Dx)** *n.* (*pl. diagnoses*) **1.** the process of identifying and determining the nature of a disease or disorder by its signs and symptoms, through the use of assessment techniques (e.g., tests and examinations) and other available evidence. **2.** the classification of individuals on the basis of a disease, disorder, abnormality, or set of characteristics. Psychological diagnoses have been codified for professional use, notably in the DSM–IV–TR and DSM–5. **3.** the decision or statement itself that results from this process or classification, as in “She was given a diagnosis of schizoaffective disorder.”—**diagnostic** *adj.*

**diagnosis-related groups (DRGs)** an inpatient or hospital classification used as a financing tool to reimburse health care providers. Each of the DRGs (of which there are currently over 500) has a preset price based on diagnosis, age and sex of patient, therapeutic procedure, and length of stay.

**Diagnostic Adaptive Behavior Scale (DABS)** a standardized assessment measuring the conceptual, social, and practical skills needed for daily functioning. The presence of significant limitations in these domains is necessary to establish a diagnosis of intellectual disability. This scale is used with individuals ages 4 to 21 years and includes 500 items that the administrator can draw from in

an hour-long interview with an individual's parents, teachers, or case manager. [developed by the AMERICAN ASSOCIATION ON INTELLECTUAL AND DEVELOPMENTAL DISABILITIES]

**Diagnostic and Statistical Manual of Mental Disorders** see DSM–IV–TR; DSM–5.

**diagnostic audiometry** see AUDIOMETRY.

**diagnostic baseline** the entry or pretreatment levels of symptoms, used in identifying or treating diseases or disorders. Such levels are also used to assign patients or participants in a study to correlational groups.

**diagnostic center** a facility equipped with skilled personnel and appropriate laboratory and other equipment for evaluating the condition of a patient and determining the cause of his or her physical or psychological disorder. The diagnostic center may be separate or part of a larger health care facility.

**diagnostic educational tests** tests designed to identify and measure academic deficiencies. Examples include the PEBODY PICTURE VOCABULARY TEST, the IOWA TESTS OF BASIC SKILLS, and the NELSON–DENNY READING TEST. Also called **educational tests**.

**diagnostic formulation** a comprehensive evaluation of a patient, including a summary of his or her behavioral, emotional, and psychophysiological disturbances. Diagnostic formulation includes the most significant features of the patient's total history; the results of psychological and medical examinations; a tentative explanation of the origin and development of his or her disorder; the diagnostic classification of the disorder; a therapeutic plan, including basic and adjunctive treatments; and a prognostic evaluation based on carrying out this plan.

**diagnostic interview** an interview in which a health or mental health professional explores a patient's presenting problem, current situation, and background, with the aim of formulating a diagnosis and prognosis as well as developing a treatment program.

**Diagnostic Interview Schedule (DIS)** a STRUCTURED INTERVIEW assessing an individual's current and past symptoms of psychiatric disorders, such as depression, schizophrenia, and substance dependence. Designed to be an objective diagnostic instrument requiring a minimum of clinical judgment, the DIS consists of a predetermined set of questions that are asked in a specific order. It was originally developed in the late 1970s by the NATIONAL INSTITUTE OF MENTAL HEALTH for use in the EPIDEMIOLOGIC CATCHMENT AREA SURVEY. The **Diagnostic Interview Schedule for Children (DISC)** is also available.

**diagnosticity** *n.* the informational value of an interaction, event, or feedback for someone seeking self-knowledge. Information with high diagnosticity has clear implications for the SELF-CONCEPT, whereas information with low diagnosticity may be unclear, ambiguous, or inaccurate. The desire for highly diagnostic information about the self is called the SELF-ASSESSMENT MOTIVE.

**diagnostic orphan** a person who manifests one or two symptoms of a disorder but who does not qualify for a formal diagnosis. For example, someone who exhibits only a few symptoms indicating a dependence on alcohol and who therefore would not qualify for a formal DSM–IV–TR diagnosis of ALCOHOL DEPENDENCE is a diagnostic orphan.

**diagnostic overshadowing** the failure, when assess-

ing an individual with multiple disabilities, to discern the presence of one disability because its features are attributed to another, primary disability. In particular, the term refers to the failure to recognize a mental disorder in a person with intellectual disability because characteristics of that mental disorder are erroneously attributed to the intellectual disability. See also DUAL DIAGNOSIS.

**diagnostic prescriptive education** the concept that effectiveness of classroom teaching of children with disabilities depends in large part on the teacher's understanding of the disabilities. For example, the more the teacher and educational administrators know about hydrocephalus, the more effectively they can design and individualize an appropriate educational program for students with this particular disability.

**diagnostics** *pl. n.* **1.** the practice of diagnosis. **2.** procedures for evaluating how much a model differs from expected patterns and ASSUMPTIONS. For example, diagnostics may reveal how much a set of data departs from assumptions of NORMALITY, LINEARITY, and HOMOGENEITY OF VARIANCE, possibly showing skewed, curvilinear, and unequal variances across levels of another variable, respectively. See also REGRESSION DIAGNOSTICS.

**diagnostic test** any examination or assessment measure that may help reveal the nature and source of an individual's physical, mental, or behavioral problems or anomalies. In medical research, a diagnostic test would be expected to show SENSITIVITY (i.e., correctly identifying individuals with a certain illness) and SPECIFICITY (i.e., correctly identifying those who do not have a specific illness).

**dialect** *n.* **1.** a variety of a language that is associated with a particular geographical region, social class, or ethnic group and has its own characteristic words, grammatical forms, and pronunciation. Dialects of a language are generally mutually intelligible. Compare ACCENT; REGISTER. **2.** among nonhuman animals, a variant of the standard form of communication that is specific to a population or a geographical region. For example, cardinals in different parts of North America have regional differences in song. —**dialectal** *adj.*

**dialectic** *n.* **1.** in general, any investigation of the truth of ideas through juxtaposition of opposing or contradictory opinions. **2.** the conversational mode of argument attributed to SOCRATES, in which knowledge is sought through a process of question and answer. **3.** in the work of German philosopher Georg Wilhelm Friedrich Hegel (1770–1831), the pattern of statement, contradiction, and reconciliation (THESIS, ANTITHESIS, and SYNTHESIS) that he held to govern thought processes and the progress of human history. See also DIALECTICAL MATERIALISM. —**dialectical** *adj.*

**dialectical behavior therapy** (DBT) a flexible, stage-based therapy that combines principles of BEHAVIOR THERAPY, COGNITIVE BEHAVIOR THERAPY, and MINDFULNESS. It establishes a "dialectic" between helping individuals to accept the reality of their lives and their own behaviors on the one hand and helping them learn to change their lives, including dysfunctional behaviors, on the other. Its underlying emphasis is on helping individuals learn both to regulate and to tolerate their emotions. DBT is designed for especially difficult-to-treat patients, such as those with BORDERLINE PERSONALITY DISORDER. [developed by U.S. clinical psychologist Marsha Linehan (1943– )]

**dialectical materialism** in the philosophy of Karl

MARX, the principle that accounts for the progress of history and the succession of economic and government systems. The process is one in which the clash of the prevailing system (the THESIS) with an insurgent system (the ANTITHESIS) results in a new system (the SYNTHESIS). This movement is driven by purely material factors, most notably those attending the control of the means of production. Marx's dialectical account of history thus inverts what may be referred to as the dialectical idealism of German philosopher Georg Wilhelm Friedrich Hegel (1770–1831). See also CLASS THEORY; MARXISM.

**dialectical operations** mechanisms by which development occurs as a result of interactions between the individual and the environment. Rather than emphasizing universal stages of development, theorists taking a dialectical perspective, such as Lev VYGOTSKY, argue that development takes place as individuals both react to and influence their social environment. Models of this sort are based on the theories of German philosopher Georg Wilhelm Friedrich Hegel (1770–1831).

**dialectical teaching** a method that engages students in a critical examination of their reasoning through repeated questioning of their answers, much as SOCRATES is portrayed as doing in the Platonic dialogues. Also called **dialectical method**.

**dialectology** *n.* the branch of linguistics concerned with the study of DIALECTS.

**Diallinas–Amalric syndrome** a familial condition thought to be an autosomal recessive trait in which deafness is associated with defects in central vision. Also called **Amalric's syndrome; deaf mutism–retinal degeneration syndrome**. [described in 1959 by Nicolaos Pindaros Diallinas, Greek ophthalmologist, and in 1960 by Pierre Amalric (1923–1999), French ophthalmologist]

**dialogue** (**dialog**) *n.* **1.** in general, an exchange of ideas between two or more people. **2.** in GESTALT THERAPY, a technique in which the client engages in an imaginary conversation (a) with a body part from which he or she feels alienated; (b) with a person, such as a parent, who is pictured sitting in an empty chair (see EMPTY-CHAIR TECHNIQUE); or (c) with an object associated with a dream. The technique often elicits strong feelings. Also called **dialogue technique**.

**dialysis dementia** an aluminum-induced brain disease affecting patients undergoing long-term dialysis. Major symptoms are progressive mental deterioration, personality changes, and speech impairment, with such neurological signs as seizures, DYSARTHRIA, dysnomia (difficulty in naming objects), and DYSPRAXIA.

**diamorphine** *n.* see DIACETYLMORPHINE.

**dianetics** *n.* a controversial therapeutic technique claiming to treat, according to its founder, "all inorganic mental ills and all inorganic psychosomatic ills, with assurance of complete cure." Dianetics has been largely discredited within the fields of psychology and psychiatry. [introduced in 1950 by L(afayette) Ron(ald) Hubbard (1911–1986), U.S. science-fiction writer and subsequent founder of SCIENTOLOGY]

**dianoia** *n.* in philosophy, reasoning based on sensory perception and experience, especially as contrasted with the purely intellectual operation of the NOUS. Compare NOESIS. See also UNDERSTANDING. —**dianoetic** *adj.*

**diaphragm** *n.* **1.** a muscular sheet that separates the

thoracic and abdominal cavities. **2.** a cup-shaped contraceptive device made from a layer of thick latex rubber fitted over a round or spiral spring. The diaphragm is filled with a contraceptive jelly and inserted in the vagina so that it forms a barrier between the cervix and any spermatozoa that enter the vagina during coitus. The spring holds it in place. The diaphragm has been used by women since 1882. —**diaphragmatic** *adj.*

**diary method** a technique for compiling detailed data about an individual who is being observed or studied by having the individual record his or her daily behavior and activities. Also called **diary survey**.

**diaschisis** *n.* a loss or deficiency of function in brain regions surrounding or connected to an area of localized damage.

**diastolic blood pressure** the pressure of blood flowing in a major artery while the heart rests briefly between contractions. On BLOOD PRESSURE readings, it is the smaller number, usually noted after the SYSTOLIC BLOOD PRESSURE.

**diathesis** *n.* any susceptibility to or predisposition for a disease or disorder. See also GENETIC PREDISPOSITION.

**diathesis–stress model** the theory that mental and physical disorders develop from a genetic or biological predisposition for that illness (diathesis) combined with stressful conditions that play a precipitating or facilitating role. Also called **diathesis–stress hypothesis** (or **paradigm** or **theory**). See also STRESS–VULNERABILITY MODEL.

**diatonic** *adj.* pertaining to a musical scale with an OCTAVE span and intervals of five tones and two semitones. Compare CHROMATIC.

**diazepam** *n.* a long-acting BENZODIAZEPINE that is used for the management of alcohol withdrawal and as an anti-convulsant, anxiolytic, and muscle relaxant. It is broken down in the liver to produce a number of metabolites (metabolic products) of varying HALF-LIVES, including the active compounds desmethyldiazepam (nordiazepam) and OXAZEPAM. Its complex metabolism and lengthy half-life make diazepam unsuitable for use in older adults and those with liver disease. U.S. trade name (among others): **Valium**.

**diazepam-binding inhibitor (DBI)** an endogenous NEUROPEPTIDE that binds to molecular receptors for BENZODIAZEPINES. It counters the effectiveness of these drugs, thus increasing anxiety, and may be involved in the development of drug dependence.

**dibenzodiazepine** *n.* any member of a class of chemically related compounds that include CLOZAPINE, the first atypical antipsychotic introduced into clinical medicine. This class is structurally similar to the DIBENZOXAZEPINES.

**dibenzothiazepine** *n.* any member of a class of chemically related compounds that include QUETIAPINE, an atypical antipsychotic. This class is structurally similar to the DIBENZODIAZEPINES and the DIBENZOXAZEPINES.

**dibenzoxazepine** *n.* any member of a class of chemically related compounds that include LOXAPINE, one of the older antipsychotics that does not belong to the phenothiazine class. This class is structurally similar to the DIBENZODIAZEPINES.

**DIC** abbreviation for DEVIANCE INFORMATION CRITERION.

**DICE model** dissociable interactions and conscious experience model: a cognitive model proposing that linguistic, perceptual, and other kinds of knowledge are processed by

independent memory modules, with consciousness operating as an awareness system that serves as a gateway to an executive system. Access to various types of knowledge depends on intact interactions between the consciousness awareness system and other components of the model. The model considers certain impairments (e.g., AMNESIA, ALEXIA) as examples of “disconnects” in this interactive process. See MODULARITY. [devised by U.S. psychologist Daniel L. Schacter (1952– )]

**dichoptic stimulation** the simultaneous presentation of different stimuli to each of the eyes. Dichoptic stimulation usually causes BINOCULAR RIVALRY.

**dichorhine** *adj.* relating to the presentation of different odorants in each nostril via an OLFACTOMETER.

**dichorial twins** a set of twins that had separate chorionic membranes as embryos. They include DIZYGOTIC TWINS as well as MONOZYGOTIC TWINS that separate shortly after fertilization. Compare MONOCHORIAL TWINS.

**dichotic** *adj.* affecting or relating to the left and right ears differently, as with the presentation of different sounds to each ear. Compare DIOTIC; MONOTIC.

**dichotic listening** the process of receiving different auditory messages presented simultaneously to each ear. Listeners experience two streams of sound, each localized at the ear to which it is presented, and are able to focus on the message from one ear while ignoring the message from the other ear. See also INTERAURAL RIVALRY.

**dichotomized variable** an item or score that initially had a set of continuous values (e.g., age) but was then separated into two possible values (e.g., younger and older). It may be useful to create a dichotomized variable when there are TRUNCATED DATA.

**dichotomous thinking** the tendency to think in terms of polar opposites—that is, in terms of the best and worst—without accepting the possibilities that lie between these two extremes. The term has been used to characterize the tendency of people with MAJOR DEPRESSIVE DISORDER to view mildly negative events as extremely negative, but the potential role of such thinking in other conditions (e.g., eating disorders, personality disorders) is also under investigation. Also called **polarized thinking**.

**dichotomous variable** a variable that can have only one of two values (typically, 0 or 1) to designate membership in one of two possible categories, such as female versus male or Republican versus Democrat. Also called **binary variable**. See also POLYCHOTOMOUS VARIABLE.

**dichromatism (dichromacy; dichromasy; dichromatopsia)** *n.* partial color blindness in which the eye contains only two types of cone PHOTOPIGMENT instead of the typical three: Lack of the third pigment leads to confusion between certain colors. Red–green color blindness (see DEUTERANOPIA; PROTANOPIA) is the most common, whereas the blue–green variety (see TRITANOPIA) is relatively rare. Another type, yellow–blue (see TETARTANOPIA), has been proposed, but its existence has yet to be firmly established. See also ACHROMATISM; MONOCHROMATISM; TRICHROMATISM. —**dichromatic** *adj.*

**dichromic** *adj.* distinguishing only two colors.

**DID** abbreviation for DISSOCIATIVE IDENTITY DISORDER.

**didactic group therapy** an early form of group psychotherapy based on the theory that institutionalized individuals will respond most effectively to the active guidance

of a professional leader. In one form of didactic group therapy, the group members bring up their own problems and the therapist leads the discussion, often giving his or her own interpretations. In another form, the therapist presents a short lecture based on printed material designed to stimulate the members to break through their resistances and express themselves. The didactic approach is also used in self-help groups.

**didactic teaching** **1.** a technique in which behavioral and therapeutic concepts and techniques are explained to clients, and instructions are given in both verbal and written form. Such instruction is common in many forms of therapy, with the exception of PSYCHODYNAMIC PSYCHOTHERAPY and PSYCHOANALYSIS. **2.** a component of many undergraduate and graduate psychology courses and multidisciplinary psychotherapy training.

**diencephalic amnesia** amnesia caused by lesions of the DIENCEPHALON due to infarction of the paramedian artery, trauma, diencephalic tumors, and WERNICKE–KORSAKOFF SYNDROME.

**diencephalon** *n.* the posterior part of the FOREBRAIN that includes the THALAMUS, EPITHALAMUS, and HYPOTHALAMUS. —**diencephalic** *adj.*

**diestrus** *n.* in the polyestrous mammalian female, a period of sexual inactivity between two ESTROUS CYCLES, during which the reproductive system prepares for potential conception and gestation.

**diet** *n.* **1.** food substances and liquids habitually consumed by an organism. **2.** a prescribed course of eating and drinking for a particular reason (e.g., a low-cholesterol diet). —**dietary** *adj.*

**dietary neophobia** avoidance of new foods. A non-pathological form is commonly seen in children who display a reluctance to try unfamiliar food. Acceptance of novel diets may be facilitated through observation of others eating similar foods or, in some cases, by simply observing others eating familiar foods. In some nonhuman primates, parents or other caretakers appear more likely to offer or share foods that are novel to their young than foods that are familiar to them.

**dietary selection** the ability of an organism to choose foods that maintain a good nutritional balance of calories, fats, protein, minerals, and vitamins. Many species appear to be able to self-select an appropriate diet, perhaps due to sampling of foods that reduce illness induced by lack of one nutrient or another. Most species studied, however, demonstrate a specific appetite for sodium, a critical mineral for survival.

**diethylpropion** *n.* a CNS STIMULANT used as an appetite suppressant in the treatment of obesity. See also ANALEPTIC. U.S. trade name: **Tenuate**.

**diethylstilbestrol (DES)** *n.* a synthetic, nonsteroidal compound with the activity of estrogen. It was at one time widely prescribed to pregnant women to prevent miscarriages or premature deliveries, but such use was discontinued in the early 1970s due to the health risks associated with DES, including increased risk of reproductive abnormalities and cancer in female offspring. It is still used clinically to treat selected cases of breast cancer or prostate cancer, but this is very rare. See also ENDOCRINE DISRUPTOR.

**diethyltryptamine** *n.* see DET.

**dieting** *n.* the deliberate restriction of the types or

amounts of food one eats, usually in an effort to lose weight or to improve one's health. Dieting is viewed by some medical and mental health professionals as a solution to obesity and by others as a primary pathology associated with EATING DISORDERS.

**DIF** abbreviation for DIFFERENTIAL ITEM FUNCTIONING.

**difference canon** see METHOD OF DIFFERENCE.

**difference hypothesis** see DEFECT THEORY.

**difference judgment** a judgment that two similar stimuli are not identical. The minimum difference between the stimuli necessary to make such a judgment is called the DIFFERENCE THRESHOLD.

**difference score** (symbol: *D*) an index of dissimilarity or change between observations from the same individual across time, based on the measurement of a construct or attribute on two or more separate occasions. For example, it would be helpful to calculate a difference score for a person's weight at the beginning of a diet and exercise program and the final weight 6 months later. Also called **change score**; **gain score**.

**difference threshold** the smallest difference between two stimuli that can be consistently and accurately detected on 50% of trials. Also called **difference limen (DL)**; **just noticeable difference (JND; jnd)**. See also WEBER'S LAW.

**difference tone** see COMBINATION TONE.

**Differential Ability Scales (DAS)** an individual test designed to yield a broad index of intelligence. Updated in 2007 as **DAS-II**, it now comprises 20 cognitive subtests divided into two age-based batteries: the **Early Years Cognitive Battery** and the **School-Age Cognitive Battery**. Each battery is further divided into core and diagnostic subtests. The core subtests are good measures of *g* (see GENERAL FACTOR), whereas the diagnostic subtests measure such abilities as short-term memory and processing speed. Six of the core subtests at the school-age level yield separate scores for verbal ability, nonverbal reasoning, and spatial ability. [developed in 1990 by British psychologist Colin D. Elliott (1937– )]

**differential accuracy** the ability to determine accurately in what way and to what extent a person's traits differ from a STEREOTYPE associated with his or her age group, ethnic group, professional group, or other relevant group. Compare STEREOTYPE ACCURACY.

**differential amplifier** an electrical device that amplifies the voltage difference between two input leads. In neural research, potential changes may be as small as 1  $\mu$ V, and electrical resistances and sources of interference may be greater than the voltages being studied. Thus, complex electronic equipment, such as a differential amplifier, is required.

**Differential Aptitude Tests (DAT)** a battery of tests designed for use in the educational and vocational counseling of students in grades 7 to 12 as well as adults. The battery—which measures abstract reasoning, mechanical reasoning, verbal reasoning, language usage, numerical ability, spatial relations, and perceptual speed and accuracy—pinpoints mental strengths and weaknesses and predicts success both in school and in the workplace. The DAT is in its fifth edition, published in 1990. [originally developed in 1947 by U.S. psychologists George Kettner Bennett

(1904–1975), Harold G. Seashore (1906–1965), and Alexander G. Wesman (1914–1973)]

**differential association 1.** the theory that an individual's behavior is influenced by the particular people with whom he or she associates, usually over a prolonged period. This concept was proposed to explain why people living in a neighborhood with a high crime rate were more likely to commit crimes themselves. Moreover, it was suggested that association with a particular type of criminal determined what kind of criminal one became. [proposed by U.S. criminologist Edwin H. Sutherland (1883–1950)] **2.** the different effects that individual factors—such as medicines, genes, catalysts, traits, and the like—may contribute to a phenomenon, structure, or outcome.

**differential conditioning** a CLASSICAL CONDITIONING experiment in which two or more stimuli are used, each paired with different outcomes. Most commonly, one stimulus (the positive conditioned stimulus, e.g., a light) is paired with an unconditioned stimulus (e.g., food), and another (e.g., a tone) is not paired. The usual outcome is that a CONDITIONED RESPONSE is elicited by the positive conditioned stimulus but not by the other stimulus.

**differential diagnosis 1.** the process of determining which of two or more diseases or disorders with overlapping symptoms a particular patient has. **2.** the distinction between two or more similar conditions by identifying critical symptoms present in one but not the other.

**differential effect** in parapsychology experiments using ZENER CARDS or similar targets, the finding that a participant shows an above-chance difference in performance under two contrasting conditions of testing (e.g., with two different targets). See also DECLINE EFFECT; FOCUSING EFFECT; POSITION EFFECT; PREFERENTIAL EFFECT; SHEEP–GOAT EFFECT.

**differential emotions theory** a theory proposing the existence of a large but limited set of specific emotions that appear without social learning at the age when the emotions can first play an adaptive role in the behavior of the child. [proposed by Carroll E. IZARD]

**differential extinction** the EXTINCTION of one or more responses established through conditioning while related conditioned responses remain.

**differential fertility** the fertility rate of any group (e.g., an ethnic or socioeconomic group) in relation to that of another group.

**differential growth** the growth of an organ at a rate different from that of other organs in the body.

**differential inhibition** a decreased tendency to respond to stimuli resembling the original conditioning stimulus.

**differential item functioning (DIF)** the circumstance in which two individuals of similar ability do not have the same probability of answering a question in a particular way. This often is examined to assess whether men and women or individuals of different ethnicity are likely to provide disparate answers on a test. If so, the fairness of the test can be called into question.

**differential-organization theory** see LAG EFFECT.

**differential psychology** the branch of psychology that studies the nature, magnitude, causes, and consequences of psychological differences between individuals

and groups, as well as the methods for assessing these differences. See also INDIVIDUAL DIFFERENCES.

**differential reinforcement** in conditioning, the REINFORCEMENT of only selected behavior. For example, one might reinforce lever presses that are more than 1 second in duration but not reinforce those that are less than 1 second in duration.

**differential reinforcement of alternative behavior (DRA)** the REINFORCEMENT of a particular behavior as a means of decreasing another, targeted behavior. It combines EXTINCTION of the targeted response with competition from the reinforced alternative.

**differential reinforcement of high rate (DRH)** a SCHEDULE OF REINFORCEMENT in which reinforcement depends on fast responses to stimuli. It often requires the interval between responses to be less than an allowed maximum.

**differential reinforcement of low rate (DRL)** a SCHEDULE OF REINFORCEMENT in which reinforcement is given only when the rate of response to stimuli is low. It often requires the interval between responses to be greater than an allowed minimum. Also called **differential reinforcement of long response times**.

**differential reinforcement of other behavior (DRO)** a procedure in which REINFORCEMENT is provided if a particular response does not occur for a fixed period of time. It is used to decrease the rate of the targeted response. Also called **omission training**.

**differential relaxation** a technique for exerting only the amount of muscular tension or energy required to perform an activity successfully. For example, an individual driving an automobile can practice easing and releasing contracted muscles that are not primarily involved in the act of driving (e.g., the shoulders and upper back or the neck and facial muscles) and thus permit more appropriate focus and engagement of those muscles directly involved (e.g., in the hands, arms, legs, and lower back).

**differential validity 1.** the accuracy of a battery of tests in discriminating between a person's subsequent success in two or more different criterion tasks. **2.** differences in VALIDITY COEFFICIENTS across groups. For example, the correlation between test scores and job performance may differ for males and females.

**differentiation n. 1.** sensory discrimination of differences among stimuli. For example, wines that at first taste are identical may, with experience, be readily distinguished. **2.** a conditioning process in which a limited range of behavior types is achieved through selective REINFORCEMENT of only some forms of behavior. Also called **response differentiation**. **3.** in embryology, the process whereby cells of a developing embryo undergo the changes necessary to become specialized in structure and function so that they or their successors can form tissues, such as muscle, neurons, or bone. **4.** in mathematics, the process used in calculus for obtaining the differential coefficient of a function or variable. **5.** in attitudes research, see COMPLEXITY OF AN ATTITUDE.

**differentiation–dedifferentiation hypothesis** two complementary proposals about the development of intelligence. In one, U.S. psychologist Henry E. Garrett (1894–1973) proposed in 1938 that intelligence begins as a fairly unified, general ability that then differentiates into separate, albeit related, abilities as children develop. This

proposal has come to be called the **age differentiation hypothesis**. According to the other proposal, put forth by U.S. psychologist Benjamin Balinsky in 1941, a process occurs after age 65 during which the separate abilities developed in childhood become increasingly intercorrelated as a result of decreasing fluid intelligence (see CATTELL–HORN THEORY OF INTELLIGENCE); at this time, intelligence dedifferentiates and returns to a single factor of general ability. This proposal has become known as the **age dedifferentiation hypothesis**. Both proposals have garnered much debate over the years, but the evidence for each remains limited.

**differentiation theory** the theory that perception can be understood as an incremental filtering process enabling environmental noise (i.e., dispensable, incidental information) to be screened out while one learns to distinguish the essential characteristics of sensory patterns.

**diffraction** *n.* the bending or scattering of waves as they pass through an aperture or around the edge of a barrier. Diffraction most often refers to this phenomenon in light waves, but it may occur with waves of any type, including sound waves, radio waves, water waves, and so forth.

**diffraction grating** a piece of glass or metal containing closely spaced parallel slits or transparencies, used to separate light into its component wavelengths.

**diffuse axonal injury (DAI)** widespread stretching and degradation (e.g., acute tearing or delayed biochemically mediated degeneration) of the white matter nerve fibers of the brain, caused by any incident resulting in sudden, significant acceleration or deceleration forces to the head. DAI typically is caused by motor vehicle accidents and is a frequent form of TRAUMATIC BRAIN INJURY.

**diffuse bipolar cell** a RETINAL BIPOLAR CELL that receives input from several receptors. Compare MIDGET BIPOLAR CELL.

**diffuse-status characteristic** in EXPECTATION-STATES THEORY, any of certain general personal qualities, such as age, sex, and ethnicity, that people intentionally and unintentionally consider when estimating the relative competency, ability, and social value of themselves and others. Unlike SPECIFIC-STATUS CHARACTERISTICS, diffuse-status characteristics have no particular relevance in the given setting. See STATUS GENERALIZATION.

**diffuse thalamic projection system (DTPS)** a set of thalamic nuclei that project numerous fibers to all parts of the cerebral cortex. It is the projection system for the RETICULAR FORMATION and sets the tone of the cerebral cortex. See THALAMUS.

**diffusion** *n.* **1.** the process by which knowledge, innovation, language, or cultural characteristics are spread within or between cultures or communities. **2.** in biology, see PASSIVE TRANSPORT. **3.** more generally, any process by which something becomes spread or distributed throughout something else. —**diffuse** *vb.*

**diffusion magnetic resonance imaging (dMRI)** a variant of MAGNETIC RESONANCE IMAGING (MRI) in which the molecular diffusion of water or metabolites in the body is measured, resulting in high-resolution images of tissue microstructure. dMRI allows noninvasive evaluation of diffusion in vivo without affecting the diffusion itself. It is used in the study of ischemia, the evaluation of cancer treatments, and the management of acute stroke.

**diffusion model** a model of reaction time and accuracy

proposing that an individual accumulates evidence continuously, rather than in discrete steps, until a response criterion is reached. [proposed in 1978 by U.S. psychologist Roger Ratcliff (1947– )]

**diffusion of responsibility** the diminished sense of responsibility often experienced by individuals in groups and social collectives. The diffusion has been proposed as a possible mediator of a number of group-level phenomena, including the BYSTANDER EFFECT, CHOICE SHIFTS, DEINDIVIDUATION, SOCIAL LOAFING, and reactions to SOCIAL DILEMMAS. See also CONFUSION OF RESPONSIBILITY. [first described in 1970 by U.S. social psychologists John M. Darley (1938– ) and Bibb Latané (1937– )]

**diffusion of treatments** a situation in which research participants adopt a different intervention from the one they were assigned because they believe the different intervention is more effective. When diffusion of treatments occurs, the INTERNAL VALIDITY of a study is called into question, as it would be difficult to attribute a specific outcome to a specific intervention. For example, participants in a weight-reduction program may be assigned to a low-carbohydrate intervention, a low-fat intervention, a low-calorie intervention, or a control group that only receives educational material on losing weight. If some participants in the control condition found out that those in one of the other conditions were losing more weight and they adopted that intervention, there would be diffusion of treatments.

**diffusion process** in consumer psychology, the process by which the general public comes to accept a new concept or product. The process is often compared to a stone dropped into a pond that produces waves that spread outward to cover the entire pond. The diffusion process depends on acceptance by an initial core of people, whose influence then ripples outward through the surrounding population.

**diffusion status** see IDENTITY STATUS MODEL.

**diffusion tensor imaging (DTI)** a variant of DIFFUSION MAGNETIC RESONANCE IMAGING that traces the flow of water in the brain to visualize white matter structures. It is useful in mapping connections between different areas of the brain and can provide valuable detail about these areas and connections. It is utilized in the study of language development, the aging brain, and such disorders as dyslexia, epilepsy, stroke, multiple sclerosis, and schizophrenia.

**digestion** *n.* the process by which food is broken down so that it may be absorbed and assimilated by the body, thus providing energy and nutrients.

**digestive type** a constitutional body type in which the alimentary system dominates other systems (see ROSTAN TYPES). It corresponds to the PYKNIC TYPE in KRETSCHEMER TYPOLOGY.

**digital** *adj.* **1.** relating to the representation of information in discrete or numerical (typically binary) form. Compare ANALOG. **2.** of or relating to the fingers or toes.

**Digital Accessible Information SYstem (DAISY)** see TALKING BOOK.

**digital computer** an electronic device that processes information, including making numeric calculations. It is called “digital” because the machine’s primary mechanisms include counting, comparing, and rearranging digits in its memory and processing modules. The (digital) unit for these computations is called a BIT. Compare ANALOG COMPUTER.

**digital divide** any significant gap between groups of individuals in their access to and skilled use of computers, the Internet, smartphones, and other information and communication technologies. For example, there is a digital divide between older adults and younger people: Because the former have been without computers for most of their lives, they tend to be less knowledgeable about the use of such technology than the latter, who have grown up with the technology. The digital divide is an increasing concern as more and more information is collected and disseminated electronically. A related concern is **digital acceptance**, or how information gathered through digital means is perceived. For example, some social science researchers routinely collect data via online surveys and other Internet-based methods, whereas other researchers do not consider the information obtained from such methods to be as valuable as that collected from more traditional (i.e., nonelectronic) sources.

**digital subtraction angiography** angiography to visualize blood vessels that have been injected with contrast medium in which minimization or elimination of the background and other soft tissues by computer results in a clear image.

**digitized speech** speech that has been coded in DIGITAL form, usually for storage in a computer or transmission over a COMPUTER NETWORK.

**digit span** the number of random digits from a series that a person can recall following a single auditory presentation. A span of 5 to 9 digits (see SEVEN PLUS OR MINUS TWO) is considered typical for an adult.

**Digit Span** an attentional subtest in the WECHSLER ADULT INTELLIGENCE SCALE that assesses the ability of an individual to repeat a series of digits of increasing length. **Digit Span Forward** assesses the number of digits an individual is able to repeat immediately following their presentation, in the exact order they were presented. **Digit Span Backward** assesses the number of digits an individual is able to repeat immediately following their presentation, but in reverse order. The former is regarded as a measure of IMMEDIATE MEMORY; the latter provides a measure of WORKING MEMORY.

**Digit Symbol** a performance subtest in the WECHSLER ADULT INTELLIGENCE SCALE that measures the time taken to indicate digits associated with abstract symbols using a substitution key. It is a measure of fluid abilities (see CATT-ELL-HORN THEORY OF INTELLIGENCE) and performance and is negatively correlated with adult age. Also called **Digit Symbol Substitution**.

**diglossia** *n.* the situation in which two varieties of a language coexist and have distinct social functions within a community; these are usually characterized by high (H) and low (L) uses, H being associated with formality and literacy, and L with everyday colloquial usage. See also CODE SWITCHING; MULTILINGUALISM; VERNACULAR. [first described in 1959 by U.S. linguist Charles Ferguson (1921–1998)]

**digraph** *n.* a combination of two letters or other symbols used to represent a single speech sound, for example, *ph* in *digraph* or *ea* in *head*. The corresponding term **trigraph** refers to three letters or symbols, for example, *th* in *Matthew*. See also DIPHTHONG.

**dihydrocodeine** *n.* see OPIOID ANALGESIC.

**dihydroergotamine** *n.* a semisynthetic derivative of the ergot alkaloid ERGOTAMINE, used in the treatment of

acute migraine headache. It is a potent VASOCONSTRICTOR due to its ability to antagonize ALPHA-ADRENERGIC RECEPTORS in blood-vessel walls as well as serotonin and dopamine receptors. U.S. trade names: **DHE 45; Migranal**.

**dihydromorphine** *n.* a semisynthetic OPIOID ANALGESIC used primarily in research on OPIOID RECEPTORS. It is also a metabolite (metabolic product) of dihydrocodeine.

**dihydrotestosterone** *n.* a potent androgenic hormone produced by the metabolic breakdown of TESTOSTERONE, many of whose effects it mediates in target tissues. It is important in the development of reproductive organs in the male fetus and of male secondary SEX CHARACTERISTICS. A semisynthetic form is used therapeutically (see STANOLONE).

**dihydroxyphenylacetic acid** see DOPAC.

**3,4-dihydroxyphenylalanine** *n.* see DOPA.

**dihydroxytyptamine (DHT)** *n.* a serotonergic neurotoxin often used experimentally to decrease serotonin neurotransmission and to investigate the effects of this depletion on brain activity and behavior.

**Dilantin** *n.* a trade name for PHENYTOIN.

**dilation** *n.* the process of enlargement, usually of an aperture, such as the pupil of the eye.

**dilator** *n.* **1.** a muscle or nerve that causes opening or enlargement of a bodily structure. **2.** an instrument for opening up an orifice or passage in the body. **3.** a drug or other agent that causes dilation or enlargement of an organ or opening. See VASODILATOR.

**dildo** *n.* an artificial penis, made usually of plastic or silicone but occasionally of wood or other materials. A dildo is used in autoerotic practices and other sexual activities. Also called **olisbos**. See also VIBRATOR.

**dilemma** *n.* a situation necessitating a choice between two equally desirable or undesirable alternatives. Psychologists, economists, or sociologists may invent dilemmas and present them to individuals or groups to study decision making. See ETHICAL DILEMMA; PRISONER'S DILEMMA; SOCIAL DILEMMA.

**dilution effect** **1.** the reduction in the average probability that any one individual animal will be preyed on when many animals carry out the same activity at the same time. For example, young birds may leave a nesting colony en masse, or insects may emerge synchronously; as a result, predators are able to take proportionally fewer prey. See also ANTIPREDATOR BEHAVIOR; CONFUSION EFFECT. **2.** the protection against disease transmission that may occur when the presence of **incompetent reservoirs** (i.e., organisms that do not efficiently transmit a particular pathogen) dilutes the effect of **competent reservoirs**; in this situation, a decrease in biodiversity may lead to an increase in the transmission of a pathogen. In contrast, the **amplification effect** occurs when an increase in biodiversity leads to an increase in disease transmission.

**dimenhydrinate** *n.* a nonprescription ANTIHISTAMINE at H<sub>1</sub> receptors that is commonly taken to suppress symptoms of motion sickness. U.S. trade name (among others): **Dramamine**.

**dimension** *n.* in statistics, a factor or component that is applied in measuring a set of variables. For example, some intelligence scales are considered to have two important dimensions consisting of verbal and nonverbal intelligence.

**dimensionality** *n.* the number of DIMENSIONS applied in measuring a construct. In FACTOR ANALYSIS and PRINCIPAL COMPONENTS ANALYSIS, it is important to assess the dimensionality of a set of items on a scale in order to form cohesive subscales that each describe a similar set of items.

**dimensional theory of emotion** any theory postulating that emotions have two or more fundamental dimensions. There is universal agreement among theories on two fundamental dimensions—pleasantness—unpleasantness (hedonic level) and arousal—relaxation (level of activation)—but considerable differences in labeling others.

**dimensions of consciousness** variables along which the overall quality of a person's consciousness can be assessed, including mood and feeling tone, internal or external focus of attention, changes in spatial awareness, a sense of flow or difficulty, degree of self-awareness, and degree of self-identification with groups or individuals.

**dimer** *n.* a complex in which two macromolecular subunits (e.g., of a protein) are bound together. —**dimeric** *adj.*

**dimethoxymethylamphetamine** *n.* see DOM.

**dimethyl ketone** see ACETONE.

**dimethyltryptamine** *n.* see DMT.

**diminished capacity** a legal defense in which a mental abnormality, due to either intoxication (see INTOXICATION DEFENSE) or mental defect, is claimed to have limited the defendant's ability to form the requisite criminal intent (see MENS REA) for the crime with which he or she is charged.

**diminished responsibility** a form of AFFIRMATIVE DEFENSE in which evidence of mental abnormality is presented to mitigate or reduce a defendant's accountability for an act. It is distinct from an INSANITY DEFENSE, which takes an all-or-none perspective with regard to CRIMINAL RESPONSIBILITY. Also called **limited responsibility**. See also PARTIAL INSANITY.

**diminutive visual hallucination** see LILLIPUTIAN HALLUCINATION.

**dimming effect** **1.** the effect of a bright light in a scene with fainter elements. The faint elements appear dimmer in the presence of the light source than they do when the light source is absent. **2.** the increase in brightness of an afterimage that results from dimming its background.

**dimorphism** *n.* the existence among members of the same species of two distinct forms that differ in one or more characteristics, such as size, shape, or color. Compare MONOMORPHISM. See also SEXUAL DIMORPHISM. —**dimorphic** *adj.*

**DIMS** abbreviation for DISORDERS OF INITIATING AND MAINTAINING SLEEP.

**DIN color system** a European system for representing colors by their attributes of hue, luminous intensity, and saturation (from German *D[utsche] I[n]dustrie-] N[orm]*, German Industry Standard). It is similar to the U.S. MUNSSELL COLOR SYSTEM.

**dinitrogen monoxide** see NITROUS OXIDE.

**Dionysian** *adj.* describing a state of mind that is irrational, sensuous, disordered, and even drunken or mad (from Dionysus, Greek god of wine, intoxication, and ritual madness or ecstasy). This modern use of the term was originated by Friedrich NIETZSCHE, who drew a contrast between the Dionysian and the APOLLONIAN sides of human

nature. He felt that a Dionysian attitude would counter the enervating effects of the Apollonian attitude then dominant in morality, religion, and philosophy.

**diopter** *n.* a unit of the power of a lens, equal to the reciprocal of its FOCAL LENGTH in meters. A lens of 1 diopter will focus parallel rays of light to a point 1 m behind the lens.

**dioptrics** *n.* the field of optics concerned with the refraction of light. Compare CATOPTRICS.

**diotic** *adj.* denoting or relating to the presentation of the same sound to both ears. Compare DICHOTIC; MONOTIC.

**diphenhydramine** *n.* a sedating ANTIHISTAMINE at H<sub>1</sub> receptors that also possesses activity at cholinergic and other receptor sites. It is used generally to suppress allergic responses and, in mental health, as a sedative and hypnotic or to suppress the parkinsonian symptoms induced by conventional antipsychotic drugs. U.S. trade name (among others): **Benadryl**.

**diphenylbutylpiperidine** *n.* any member of a class of chemically related compounds that include the conventional antipsychotic PIMOZIDE.

**diphenylmethane** *n.* any of a class of sedating ANTIHISTAMINES at H<sub>1</sub> receptors that are used primarily as ANXIOLYTICS. They also prevent cardiac fibrillation and have local anesthetic effects. The prototype is HYDROXYZINE.

**diphthong** *n.* a speech sound in which one vowel glides imperceptibly into another, as in the English words *boy* or *great*.

**diplacusis** *n.* a condition in which one tone is heard as two.

**diplegia** *n.* a paralysis that affects corresponding parts on both sides of the body (e.g., both arms). —**diplegic** *adj.*

**diplo-** (**dipl-**) *combining form* double or doubled.

**diploid** *adj.* denoting or possessing the normal number of chromosomes, which in humans is 46: the 22 HOMOLOGOUS pairs of AUTOSOMES plus the male or female set of XY or XX SEX CHROMOSOMES. Compare HAPLOID.

**diplomat** *n.* see BOARD CERTIFIED.

**diplopia** *n.* a visual disorder in which images from the two eyes are seen separately and simultaneously. Diplopia is usually due to weak or paralyzed eye muscles, resulting in a failure of coordination and focus. It may also be a functional symptom or result from brain injury (**cerebral diplopia**). See also DOUBLE VISION.

**dipsomania** *n.* an obsolete term for compulsive alcoholic drinking, particularly episodic binge drinking. —**dipsomaniac** *n.*

**direct aggression** aggressive behavior directed toward the source of frustration or anger. Compare DISPLACED AGGRESSION.

**direct attitude measure** any procedure for assessing attitudes that requires a person to provide a report of his or her attitude. Traditional approaches to attitude measurement, such as the LIKERT SCALE, SEMANTIC DIFFERENTIAL, and THURSTONE ATTITUDE SCALES, are examples of direct attitude measures. See also EXPLICIT ATTITUDE MEASURE; IMPLICIT ATTITUDE MEASURE. Compare INDIRECT ATTITUDE MEASURE.

**direct-contact group** see FACE-TO-FACE GROUP.

**direct coping** active, focused confrontation and man-



agement or resolution of stressful or otherwise problematic situations. See also ACTIVE COPING.

**direct correlation** see POSITIVE CORRELATION.

**direct dyslexia** a form of acquired DYSLEXIA characterized by an ability to read words aloud but an inability to understand what is being read. Some have suggested this is a parallel to developmental HYPERLEXIA.

**directed attention** see SELECTIVE ATTENTION.

**directed discussion method** dialogue between two or more people about a specific topic in which one person's role is to keep the dialogue focused on a certain path or moving in a certain direction. That person may be a teacher, group leader, or mediator. In an educational setting, for example, a professor would provide curriculum-directed focus based on experience, while the students would contribute varied perspectives and broad-ranging information from their research.

**directed forgetting** in memory trials, forgetting that happens due to an item being accompanied by a **forget cue**, that is, a stimulus that signifies that the item will not be included in the memory test. A **remember cue** signifies that an item will be included.

**directed graph** see GRAPH.

**directed masturbation** a behavioral treatment for women with ANORGASMIA or FEMALE ORGASMIC DISORDER to improve the consistency, strength, and number of orgasms experienced in intercourse. Directed masturbation also is used to alter deviant sexual preferences in individuals who engage in pedophilia, rape, and child molestation. The procedure consists of weekly therapy sessions as well as extratherapy sensuality and masturbatory exercises to be practiced by the client, including visual examination of the genitalia and whole body, focused genital exploration and touching, and increasingly intense manual stimulation supplemented with erotica and fantasy. Sexual enrichment workshops, communication skills training, sexual counseling, and KEGEL EXERCISES may also be used. Despite the clinical popularity of directed masturbation for treating orgasmic dysfunction, empirical support for its effectiveness has been plagued by methodological problems (e.g., small sample sizes, confounded treatments, lack of objective outcome measures), and the technique has yet to gain widespread acceptance as an EVIDENCE-BASED PRACTICE. [formally developed in 1972 by U.S. psychologists Joseph LoPiccolo (1943– ) and W. Charles Lobitz]

**directed movement** movement targeted toward achieving a specific goal.

**directedness** *n.* the sense of unified purpose that provides the mature individual with enduring motivation, continuity, and orientation to the future. [first described by Gordon W. ALLPORT]

**directed reverie** in individual and group therapy, a technique in which the therapist directs the client to reexperience a dream or something that happened in early life by creating and then describing a mental image of that dream or event. See also GUIDED AFFECTIVE IMAGERY.

**directed thinking** controlled, purposeful thinking that is focused on a specific goal, such as the solution to a problem, and guided by the requirements of that goal. See also CRITICAL THINKING.

**direct glare** interference with vision caused by bright light from a source in the visual field, as opposed to re-

**flected glare**, which is interference caused by light reflected from a surface.

**directional confusion** difficulty in distinguishing left from right and, in some cases, difficulty with other spatial relationships, such as that of *uptown* and *downtown*. Some directional confusion is common up to the age of 6 or 7, especially during the early stages of reading, writing, and spelling, and also in people with MIXED LATERALITY. Persistent directional confusion may indicate MINIMAL BRAIN DYSFUNCTION or a history of forced conversion from left-handedness to right-handedness.

**directional hypothesis** a scientific prediction stating (a) that an effect will occur and (b) whether that effect will specifically increase or specifically decrease, depending on changes to the INDEPENDENT VARIABLE. For example, a directional hypothesis could predict that depression scores will decrease following a 6-week intervention, or conversely that well-being will increase following a 6-week intervention. Also called **directional alternative hypothesis**; **one-tailed hypothesis**. Compare NONDIRECTIONAL HYPOTHESIS.

**directionality problem** in CORRELATIONAL RESEARCH, the situation in which it is known that two variables are related although it is not known which is the cause and which is the effect.

**directional test** a statistical test of a DIRECTIONAL HYPOTHESIS. Also called **directional alternative hypothesis test**; **directional hypothesis test**; **one-tailed test**. Compare NONDIRECTIONAL TEST.

**direction circular** see LABELING.

**direction perception** the ability to determine the location in space of a moving visual target or of an auditory stimulus.

**directions test** a type of intelligence test that measures the participant's ability to follow instructions on a series of tasks. Most directions tests only implicitly measure this ability, typically resulting in a reduced score only if their directions are misunderstood.

**directive** *n.* a command, suggestion, or order specifying the type of action that should be performed. In therapeutic contexts, a directive is a specific statement by the therapist that enjoins the client to act, feel, or think in a particular way when he or she confronts a particular problem or situation. The use of directives varies depending on therapeutic method; in some modes (e.g., psychoanalysis), directives occur rarely if at all, whereas in others (e.g., behavior therapy), they occur more frequently.

**directive counseling** an approach to counseling and psychotherapy in which the therapeutic process is directed along lines considered relevant by the counselor or therapist. Directive counseling is based on the assumption that the professional training and experience of the counselor or therapist equip him or her to manage the therapeutic process and to guide the client's behavior. Also called **directive therapy**. See also ACTIVE THERAPY.

**directive discipline** a field of study, particularly within the social sciences or humanities, that provides explicit or implicit answers to prescriptive questions regarding society and the conduct of individual lives. For example, philosophy is a directive discipline when it suggests that some ethical system is to be recommended over another. Psychology is a directive discipline to the extent that it describes a

healthy or fully functioning life and may attempt to modify behaviors that fall short of this ideal.

**directive group psychotherapy** a type of group psychotherapy designed to help members adjust to their environment through educational tasks, group guidance, group counseling, and therapeutic recreation. [developed by Russian-born U.S. psychotherapist Samuel Richard Slavson (1890–1981)]

**directive leader** a group leader who actively guides the group's planning, activities, and decision making. In therapeutic groups, for example, a directive leader is one who guides the course of the interaction, assigns various tasks to the group members, and offers verbal interpretations and recommendations. In contrast, nondirective DEMOCRATIC LEADERS refrain from providing direction or interpretation.

**directive play therapy** a controlled approach to PLAY THERAPY in which the therapist is actively involved, structuring a child's activities by providing selected play materials and encouraging the child to use them in the enactment of "pretend" situations and the expression of feelings. Compare NONDIRECTIVE PLAY THERAPY.

**directive therapy** see DIRECTIVE COUNSELING.

**direct marketing** promoting a product by means of communication strategies addressed directly to individuals, rather than via the mass media: Direct marketing strategies will usually make use of knowledge of past purchases, demographics, and other factors. Examples are direct mail campaigns, telemarketing, and targeted e-mailing.

**direct memory test** see EXPLICIT MEMORY TEST.

**direct model** a representation in which interest centers on how one or more variables specifically correlate with one or more other variables, without the inclusion of a MEDIATOR or intervening variable. For example, a researcher may hypothesize that an individual's health background relates to his or her coping style, which in turn may be related to the individual's sense of well-being. A direct model of this research would focus upon how health background relates to well-being, without considering the mediator of coping style.

**direct object** see OBJECT.

**direct observation** a method of collecting data in which a researcher simply views or listens to the subjects of the research, without asking specific questions or manipulating any variables. The method of direct observation is useful in EVALUATION RESEARCH or FIELD RESEARCH. See also NATURALISTIC OBSERVATION.

**direct odor effect** a change in the nervous system caused by direct stimulation of the OLFACTORY TRACT and related brain structures. In contrast, an **indirect odor effect** is a change in the central nervous system arising from cognitions, such as expectations, associated with the odor.

**director** *n.* in a PSYCHODRAMA, the therapist who establishes the scenario or ROLE PLAY and manages the interactions therein.

**Directory of Psychological Tests in the Sport and Exercise Sciences** a collection of psychological scales, questionnaires, and inventories related to sport and exercise. It provides the source, purpose, description, construction, reliability, validity, norms, availability, and references for each instrument.

**direct perception** the theory that the information required for perception is external to the observer; that is, one can directly perceive an object based on the properties of the DISTAL STIMULUS alone, unaided by inference, memories, the construction of representations, or the influence of other cognitive processes. See ECOLOGICAL PERCEPTION. Compare CONSTRUCTIVISM. [proposed by James J. GIBSON]

**direct realism** **1.** see NAIVE REALISM. **2.** an occasional synonym for DIRECT PERCEPTION.

**direct reflex** a reflex involving a receptor and effector on the same side of the body.

**direct relationship** **1.** an association between two variables such that they rise and fall in value together. For example, the number of hours studied and the level of test performance form a direct relationship in that as the number of study hours increases, the level of performance also increases, and vice versa. **2.** in STRUCTURAL EQUATION MODELING, a correlation or prediction between two variables that does not involve a MEDIATOR or intervening variable. Also called **positive relationship**. Compare INDIRECT RELATIONSHIP.

**direct replication** the process of repeating a study with different data under similar conditions, or of conducting several different studies with the same data. Direct replication is useful for establishing that the findings of the original study are reliable (see RELIABILITY). In contrast, SYSTEMATIC REPLICATION uses a different data set and also adjusts the conditions in specific ways.

**direct scaling** a procedure for developing numerical scales of magnitude of psychophysical factors in which the observer makes judgments of the magnitude of stimuli. This is in contrast to **indirect scaling**, in which the magnitude scales are derived from PAIRED COMPARISON judgments.

**direct selection** a form of NATURAL SELECTION in which some behavioral, physical, or physiological trait in an individual improves the likelihood that its offspring will survive to reproduce. This contrasts with KIN SELECTION, in which the behavior of an organism may not help survival of its direct descendants but may benefit its relatives instead.

**direct suggestibility** see PRIMARY SUGGESTIBILITY.

**direct suggestion** **1.** a technique in SUPPORTIVE PSYCHOTHERAPY in which attempts are made to alleviate emotional distress and disturbance in an individual through reassurance, encouragement, and direct instructions. **2.** a technique in HYPNOTHERAPY in which a client under hypnosis is directed to follow instructions of the therapist either in the session or in his or her daily life.

**dirhinic** *adj.* relating to the presentation of the same ODORANT in each nostril via an OLFACTOMETER.

**dirt phobia** a persistent and irrational fear of dirt, often accompanied by a fear of contamination and a hand-washing compulsion. Fear of dirt is a common obsession associated with OBSESSIVE-COMPULSIVE DISORDER.

**DIS** abbreviation for DIAGNOSTIC INTERVIEW SCHEDULE.

**disability** *n.* a lasting physical or mental impairment that significantly interferes with an individual's ability to function in one or more central life activities, such as self-care, ambulation, communication, social interaction, sexual expression, or employment. For example, an individual

who cannot see has a visual disability. See also HANDICAP. —**disabled** *adj.*

**disability adjusted life years (DALYs)** a measure of the influence of disease or injury on the length and quality of a person's life. It takes into account the potential loss of years due to premature mortality and the value of years lived with disability. One DALY represents one lost year of "healthy" life.

**disability evaluation** an evaluation of the effect of an impairment (i.e., a loss of function) on an individual's capabilities, particularly in terms of his or her capacity for gainful employment.

**disability laws** legislation relating to the treatment of people with mental or physical disabilities. An example in the United States is the 1990 AMERICANS WITH DISABILITIES ACT.

**Disability Rating Scale (DRS)** a rating scale, used primarily in rehabilitation facilities to monitor the rehabilitative progress of individuals with moderate to severe brain damage, that measures arousal and awareness, cognitive ability, dependence on others, and psychosocial adaptability. Each of the eight items on the scale (eye opening, communication ability, motor response, feeding, toileting, grooming, level of functioning in self-care, and employability) is assigned a value from 0 to 3, 4, or 5. These values are then added together to obtain a total score, which may range from 0 (*no disability*) to 29 (*extreme vegetative state*). [originally developed in 1982 by psychiatrist Maurice Rapoport (1926–2008) and colleagues]

**disadvantaged** *adj.* denoting individuals, families, or communities deprived of equal access to society's resources, especially the necessities of life or the advantages of education and employment.

**disaggregation** *n.* the process of breaking down data into smaller units or sets of observations. For example, faculty salary data initially may show a significant difference between male and female earnings. After disaggregating the data into separate levels (e.g., assistant, associate, full professor), however, one may find that there are no significant differences in salary among men and women at the assistant professor level but there are differences at the full professor level. Thus, disaggregating the data reveals a finer pattern. Compare AGGREGATION.

**disarranged-sentence test** a test or test item whose objective is to put a scrambled sentence in proper order. For example, the individual being tested could be required to reorder "Boy town the to went bustling the" to read "The boy went to the bustling town."

**disaster** *n.* a collectively experienced sudden catastrophic event caused by nature (e.g., hurricane, earthquake, tsunami, tornado), technology (e.g., airplane crash, nuclear plant explosion, mining accident), or human aggression (e.g., acts of terrorism). The effect is often measured in terms of loss of lives, injuries, and property damage and typically overwhelms the community's resources and ability to respond without outside assistance.

**disaster counseling** counseling offered to victims and their families, emergency workers, and witnesses during or immediately following a catastrophic event. Individual therapists and counselors and mental health teams are specially trained (e.g., by the American Red Cross) to respond in disaster situations. Their approach may include

defusing, debriefing, and other counseling techniques to help traumatized people cope with stress. One aim of the counseling might be to reduce the potential for posttraumatic stress disorder, which may develop after the event.

**disaster psychology** the specialized domain of training, research, and service provision applied to individuals, communities, and nations exposed to a disaster. A key goal is to reduce initial distress and foster short- and long-term adaptive functioning following a disaster. Within this domain, **disaster mental health** is the term most widely used in the United States to describe the psychological component in overall disaster response. PSYCHOSOCIAL SUPPORT is the term adopted by the international community and the World Health Organization to refer to the development and implementation of culturally appropriate mental health training and services for communities devastated by a disaster. Disaster mental health specialists may serve as consultants, researchers, and educators in the field. See also CRISIS INTERVENTION; DISASTER COUNSELING.

**disavowal** *n.* see DENIAL.

**discharge** *n.* **1.** in neurophysiology, the firing or activity of a neuron or group of neurons, resulting in an ACTION POTENTIAL. **2.** in hospitals and other health facilities, the release of a patient from treatment or other services. **3.** the dismissal of an employee. **4.** the abrupt reduction in psychic tension that occurs in symptomatic acts, dreams, or fantasies.

**discharge of affect** the reduction of an emotion by giving it active expression, for example, by crying. [described by Sigmund FREUD]

**discharge planning** a structured plan to facilitate an individual's safe and successful transition from an inpatient treatment setting (e.g., hospital, psychiatric unit, drug or alcohol residential treatment center) back into the community. It is part of the continuum of care and may begin development at the time of admission. The process systematically addresses, with the patient's participation, his or her physical and mental health needs (e.g., prescribed medications, follow-up therapy), but it may also address social services needs (e.g., food, housing, employment, education).

**discharge procedure** the process of releasing a patient from an inpatient setting back into the community. Common steps in the process include a final clinical interview and evaluation, instructions regarding prescribed medication (if relevant), and discussion of follow-up treatment and services. See DISCHARGE PLANNING.

**discharge rate** the ratio of the number of patients discharged from a hospital or other institution in a given period to the number admitted. Also called **improvement rate**; **recovery ratio**.

**dischronation** *n.* an aspect of DISORIENTATION in which there is confusion about time. See also CHRONOTAXIS.

**disciple** *n.* **1.** a student under a teacher's direction, a supporter of a cause, or a follower. **2.** one who spreads the doctrine of another.

**discipline** *n.* **1.** training that is designed to establish desired habits of mind and behavior. **2.** control of conduct, usually a child's, by means of punishment or reward. **3.** a field of study.

**discomfort anxiety** tension and consequent low frustration tolerance that arise from irrational beliefs about

perceived threats to well-being. [proposed in 1979 by Albert ELLIS]

**disconfirmability** *n.* see FALSIFIABILITY.

**disconnection syndrome** any neurological disorder resulting from a separation or isolation of cortical areas that usually work together. Several neurobehavioral symptoms, including some apraxias and agnosias, are thought to be attributable to disconnection syndrome. [defined by U.S. neurologist Norman Geschwind (1926–1984)]

**discontinuity effect** the markedly greater competitiveness of intergroup interactions relative to the competitiveness of interpersonal interactions. DIFFUSION OF RESPONSIBILITY and INGROUP BIAS have been proposed as contributing factors to this effect.

**discontinuity hypothesis** in GESTALT PSYCHOLOGY, the viewpoint that emphasizes the role of sudden insight and perceptual reorganization in successful DISCRIMINATION LEARNING and problem solving. According to this view, a correct answer is only recognized when its relation to the issue as a whole is discovered. Also called **discontinuity theory**. Compare CONTINUITY HYPOTHESIS. See also AHA EXPERIENCE; ALL-OR-NONE LEARNING; EUREKA TASK.

**discontinuous** *adj.* intermittent or disconnected. For example, a sequence of ORDINAL numbers is discontinuous because it does not have a smooth flow from one value to the next. See also DISCRETE. Compare CONTINUOUS.

**discontinuous variable** a variable that has distinct, DISCRETE values but no precise numerical flow. For example, gender can be thought of as a discontinuous variable with two possible values, male or female. In contrast, a CONTINUOUS VARIABLE involves numerically precise information, such as height, weight, and miles per hour. Also called **discrete variable**.

**discordance** *n.* **1.** the state or condition of being at variance. **Affective discordance** may be observed, for example, when a person relates a particularly disturbing experience without any facial or vocal indication of distress. **2.** in TWIN STUDIES, dissimilarity between a pair of twins with respect to a particular trait or disease. Compare CONCORDANCE. —**discordant** *adj.*

**discounting principle** see ATTRIBUTION THEORY.

**discourse** *n.* the areas of written, spoken, and signed communication, whether formal (debate) or informal (conversation). The term is most often used in LINGUISTICS, where **discourse analysts** focus on both the study of language (sentences, speech acts, and lexicons) as well as the rhetoric, meanings, and strategies that underlie social interactions.

**discourse analysis** in linguistics, the study of structures that extend beyond the single sentence, such as conversations, narratives, or written arguments. Discourse analysis is particularly concerned with the ways in which a sequence of two or more sentences can produce meanings that are different from or additional to any found in the sentences considered separately. An important source of such meanings is the “frame” or format of the discourse (news item, fairytale, joke, etc.) and a recognition of the various norms that this implies. The norms and expectations that govern conversation are a major concern of discourse analysis, as is the structure of conversational language generally. Particular areas of interest here include the distinction between background and foreground information (see FOREGROUNDING; GIVEN–NEW DISTINCTION)

and the relations between explicit and inferred meanings (see CONVERSATIONAL INFERENCE; IMPLICATURE; PRESUPPOSITION).

**discourse routine** a highly structured and ritualized conversational act in which the participants have set expectations about turn taking and participation. Discourse routine is important in institutional contexts, such as classroom instruction.

**discovery** *n.* in a legal dispute, a motion usually put forward by the defense that the prosecution make available for copy all documents relevant to its case. These include both paper documents and any information stored on computer or video.

**discovery learning** learning that occurs through solving problems, by formulating and testing hypotheses, and via actual experience and manipulation in attempting solutions.

**discovery method** teaching that seeks to provide students with experience of the processes of science or other disciplines through inductive reasoning and active experimentation, with minimal teacher supervision. Students are encouraged to organize data, develop and test hypotheses, and formulate conclusions or general principles. The discovery method is associated with the cognitivist school of Jean PIAGET, Jerome Seymour BRUNER, and others.

**discovery of new means through active experimentation** see TERTIARY CIRCULAR REACTION.

**discrepancy evaluation** in evaluation research, the search for differences between two or more elements or variables of a program that should be in agreement. Reconciling these differences may then become a major objective in the program’s development.

**discrepancy principle** see NOVELTY PREFERENCE TASK.

**discrepant stimulus** a stimulus that varies moderately from a known stimulus or schematic image. For example, a stranger’s face represents a discrepant stimulus for an infant.

**discrete** *adj.* separate or distinct; often referring to CATEGORICAL or ORDINAL data that have names or ranks as values. In contrast, CONTINUOUS data have a potentially infinite flow of precise numerical information. See also DISCONTINUOUS.

**discrete control** see CONTINUOUS CONTROL.

**discrete distribution** a delineation of separate, distinct values. For example, the number of children in a family can be displayed in a discrete distribution with values of 0, 1, 2, 3, and 4. Compare CONTINUOUS DISTRIBUTION.

**discrete measure** a measure of a DISCONTINUOUS value, for example, the grade level of a student.

**discrete movement task** a purposeful movement that has a recognizable beginning and end. Examples include grasping an object, kicking a ball, and shifting the gears of a car. Compare CONTINUOUS MOVEMENT TASK.

**discrete trial** a defined, limited occasion to engage in some behavior. For example, each trip through a maze by a rat can be considered a discrete trial. Such trials may be contrasted with those in which the behavior in question can occur at any time (see FREE OPERANT).

**discrete variable** see DISCONTINUOUS VARIABLE.

**discretionary task** a relatively unstructured group

task that can be completed using a variety of procedures. See ADDITIVE TASK; COMPENSATORY TASK; CONJUNCTIVE TASK; DISJUNCTIVE TASK.

**discriminal dispersion** in an experiment involving the differentiation of stimuli, the distribution of responses around a given MEAN.

**discriminanda** *pl. n. (sing. discriminandum)* stimuli that can be distinguished from one another.

**discriminant analysis** a MULTIVARIATE method of data analysis that uses a linear combination of values from a set of quantitative variables to predict differences among a set of predefined categories or groups of another variable. For example, a researcher might use a discriminant analysis to determine whether several measures of personality can differentiate those who pursue different majors in college. If there are more than two outcome categories, MULTIPLE DISCRIMINANT ANALYSIS is used. See also DESCRIPTIVE DISCRIMINANT ANALYSIS; PREDICTIVE DISCRIMINANT ANALYSIS.

**discriminant function** 1. any of a range of statistical techniques used to situate an item that could belong to any of two or more variables in the correct set, with minimal probability of error. 2. in DISCRIMINANT ANALYSIS more specifically, a linear combination of predictor variables that is used to categorize items into distinct groups. The first discriminant function denotes the linear combination that best distinguishes among the discrete groups, the second discriminant function is the linear combination that is the next best in distinguishing among the groups, and so forth.

**discriminant loading** a correlation between a variable and an underlying dimension found when trying to predict a categorical outcome from a set of predictor variables. It may range from  $-1$  to  $+1$ , where values near either extreme indicate a variable that is able to clearly differentiate among the categories of the outcome.

**discriminant validity** the degree to which a test or measure diverges from (i.e., does not correlate with) another measure whose underlying construct is conceptually unrelated to it. This is one of two aspects of CONSTRUCT VALIDITY, the other being CONVERGENT VALIDITY. Also called **divergent validity**.

**discriminated avoidance** an approach to AVOIDANCE CONDITIONING in which a conditioned stimulus signals the onset of an aversive unconditioned stimulus. By responding to the first stimulus, the organism can prevent the occurrence of the second. By contrast, in **nondiscriminated avoidance**, there is no warning conditioned stimulus. Also called **signaled avoidance**.

**discriminated operant** a conditioned OPERANT that is under stimulus control, that is, a response that is more likely to occur when its DISCRIMINATIVE STIMULUS is present than when it is not present.

**discriminating power** 1. a measure of the ability of a test to distinguish between two or more groups being assessed. 2. in DISCRIMINANT ANALYSIS, the degree of accuracy with which a set of predictor variables differentiates outcomes into categories.

**discrimination** *n.* 1. the ability to distinguish between stimuli or objects that differ quantitatively or qualitatively from one another. 2. the ability to respond in different ways in the presence of different stimuli. In conditioning, this is usually established in experiments by DIFFERENTIAL REINFORCEMENT or DIFFERENTIAL CONDITIONING techniques. See DISCRIMINATION LEARNING; DISCRIMINATION TRAINING.

3. differential treatment of the members of different ethnic, religious, national, or other groups. Discrimination is usually the behavioral manifestation of PREJUDICE and therefore involves negative, hostile, and injurious treatment of the members of rejected groups. By contrast, REVERSE DISCRIMINATION is the favorable treatment of the oppressed group rather than the typically favored group. See also RACIAL DISCRIMINATION; SEX DISCRIMINATION; SOCIAL DISCRIMINATION. —**discriminate** *vb.*

**discrimination index** see INDEX OF DISCRIMINATION.

**discrimination learning** a conditioning or learning experience in which an individual must learn to make choices between alternative stimuli, some of which may be highly similar. To facilitate the learning, typically one of the stimuli is associated with a reinforcer or goal object and the other is not. For example, a cat may have to learn to find food under a white cup on the left side of an area in which there are white and black cups on both sides. Also called **discriminative learning**.

**discrimination of cues** the ability to distinguish between two or more stimuli. Operant or classical DISCRIMINATION TRAINING procedures are often used to allow behavior to reflect this ability.

**discrimination reaction time** the time it takes a participant in a task to distinguish different stimuli, as in a CHOICE REACTION TIME task. See also SIMPLE REACTION TIME.

**discrimination training** 1. a procedure in which an OPERANT RESPONSE is reinforced in the presence of a particular stimulus but not in the absence of that stimulus. For example, a rat's lever-press response might be reinforced when a stimulus light is on but not when the light is off. The rat will eventually learn to press the lever only when the light is on. See DISCRIMINATION OF CUES. 2. in sport, the training of the ability to identify task-relevant cues and their meaning.

**discriminative learning** see DISCRIMINATION LEARNING.

**discriminative response** following DISCRIMINATION LEARNING, the choice of a particular stimulus among different stimuli to obtain a particular reward.

**discriminative stimulus** (symbol:  $S^D$ ) in OPERANT CONDITIONING, a stimulus that increases the probability of a response because of a previous history of DIFFERENTIAL REINFORCEMENT in the presence of that stimulus. For example, if a pigeon's key pecks are reinforced when the key is illuminated red but not when the key is green, the red stimulus will come to serve as an  $S^D$  and the pigeon will learn to peck only when the key is red. Compare NEGATIVE DISCRIMINATIVE STIMULUS.

**discursive psychology** the study of social interactions and interpersonal relationships with a particular focus on understanding the ways in which individuals construct events via written, spoken, or symbolic communication.

**discussion group** any group set up to explore problems and questions in a variety of vocational, educational, guidance, therapeutic, and community settings. In schools, a discussion group is usually an instructional technique; in counseling and other therapeutic settings, the focus is emotional and interpersonal; in vocational, guidance, and community settings, the objective may be to stimulate decision-making processes and to channel recommendations to a study or action group.

**discussion method** a teaching method in which both teacher and students actively contribute to the instructional process through classroom dialogue.

**disease** *n.* a definite pathological process with organic origins, marked by a characteristic set of symptoms that may affect the entire body or a part of the body and that impairs functioning.

**disease course** the progress of a pathological condition or process from inception, manifestation, and diagnosis through treatment and resolution.

**disease management** an integrated treatment approach for patients with chronic health conditions that seeks to minimize the effects of their condition through illness-specific management, education, and patient support.

**disease model** **1.** any of several theories concerning the causes and course of a pathological condition or process. **2.** see MEDICAL MODEL.

**disease of adaptation** any of a group of illnesses, including high blood pressure and heart attacks, that are associated with or partly caused by long-term defective physiological or psychological reactions to stress. [named and defined by Hungarian-born Canadian endocrinologist Hans Selye (1907–1982)]

**disease phobia** a persistent and irrational fear of disease in general or of a particular disease. Fear of disease may be a SPECIFIC PHOBIA or a feature of HYPOCHONDRIASIS or OBSSSSIVE-COMPULSIVE DISORDER.

**disenfranchised grief** grief that society (or some element of it) limits, does not expect, or may not allow a person to express. Examples include the grief of parents for stillborn babies, of teachers for the death of students, and of nurses for the death of patients. People who have lost an animal companion are often expected to keep their sorrow to themselves. Disenfranchised grief may isolate the bereaved individual from others and thus impede recovery. Also called **hidden grief**. See also GRIEF COUNSELING; GRIEF WORK; MOURNING.

**disengaged family** a family whose members are mutually withdrawn from each other psychologically and emotionally.

**disengagement** *n.* the act of withdrawing from an attachment or relationship or, more generally, from an unpleasant situation. —**disengaged** *adj.*

**disengagement theory** a theory proposing that old age involves a gradual withdrawal of the individual from society and of society from the individual. According to this theory, those happiest in old age have turned their attention inward toward the self and away from involvement in the outside world. Empirical research has shown, however, that this mutual withdrawal is not an inevitable component of old age. Compare ACTIVITY THEORY; CONTINUITY THEORY. [developed by 20th-century U.S. psychologists Elaine Cumming and William E. Henry]

**disequilibrium** *n.* **1.** a loss of physical balance, as in PARKINSON'S DISEASE and ATAXIAS due to cerebellar disorder or injury. **2.** emotional imbalance, as in individuals with extreme mood swings (LABILE AFFECT). **3.** in developmental psychology, a state of tension between cognitive processes competing against each other. In contrast to Jean PIAGET, some theorists believe that disequilibrium is the optimal state for significant cognitive advances to occur. See also EQUILIBRATION.

**disesthesia** *n.* see DYSESTHESIA.

**disfigurement** *n.* a blemish or deformity that mars the appearance of the face or body. Disfigurement can result from severe burn scars; mutilations due to wounds, accidents, or radical surgery; and a wide variety of congenital anomalies, some of which are at least partially reparable. The psychological effects of disfigurement are often devastating; they include damage to self-image, loss of self-esteem, feelings of inferiority, self-consciousness, shame, resentment, hypersensitivity, withdrawal, antisocial behavior, and paranoid reactions. These effects often result from the negative and sometimes humiliating reactions of others in a society that places a high value on physical attractiveness. See also FACIAL DISFIGUREMENT.

**disgust** *n.* a strong aversion, for example, to the taste, smell, or touch of something deemed revolting, or toward a person or behavior deemed morally repugnant. —**disgust-ing** *adj.*

**dishabituation** *n.* the reappearance or enhancement of a habituated response (i.e., one that has been weakened following repeated exposure to the evoking stimulus) due to the presentation of a new stimulus. Dishabituation can be interpreted as a signal that a given stimulus can be discriminated from another habituated stimulus and is a useful method for investigating perception in nonverbal individuals or nonhuman animals. Compare HABITUATION.

**dishonest signal** among nonhuman animals, a signal that provides misleading information about the size, quality, or intention of an individual. Dishonest signals include ALARM CALLS that scare away other group members, with the result that the animal gains better access to food, and a misleading impression of great vigor that attracts mates. Some have argued that dishonest signals are more compatible with the competitive process of NATURAL SELECTION than are HONEST SIGNALS. See DECEPTION.

**disidentification** *n.* **1.** a protective mechanism whereby one removes a potentially harmful characteristic or experience (e.g., one that causes STEREOTYPE THREAT) from one's self-identity as insulation from anxiety or failure. **2.** in meditation, a benign separation from one's sense of self in order to gain self-knowledge. It is a stepping away from self-identity to attempt to observe oneself objectively.

**disincentive** *n.* a deterrent. Specifically, in industrial and organizational psychology, it is any factor that tends to discourage effort or productivity and to lower motivation, such as unpleasant working conditions. See also HYGIENE FACTORS.

**disinformation** *n.* PROPAGANDA or false information publicly announced or planted in the news media for the purpose of deception.

**disinhibited feedback theory** see SYNETHESIA.

**disinhibited social engagement disorder** see REACTIVE ATTACHMENT DISORDER.

**disinhibition** *n.* **1.** diminution or loss of the normal control exerted by the cerebral cortex, resulting in poorly controlled or poorly restrained emotions or actions. Disinhibition may be due to the effects of alcohol, drugs, or brain injury, particularly to the frontal lobes. **2.** in conditioning experiments, the reappearance of responding, which has stopped occurring as a result of exposure to EXTINCTION, when a new stimulus is presented.

**disintegration** *n.* a breakup or severe disorganization of

some structure or system of functioning, for example, of psychic and behavioral functions.

**disjoint sets** in SET THEORY, two sets that have no elements in common. The intersection of the groups is empty, and they are mutually exclusive. An example of disjoint sets would be the set of all males and the set of all females.

**disjunctive concept** a concept that is based on possession of any one of a set of attributes. For example, the concept *people with black hair or brown hair* is a disjunctive concept. Compare CONJUNCTIVE CONCEPT. See also FAMILY RESEMBLANCE.

**disjunctive motivation** striving for substitute or temporary (rather than true and lasting) satisfaction. Compare CONJUNCTIVE MOTIVATION. [defined by Harry Stack SULLIVAN]

**disjunctive task** a group task or project, such as solving a complex problem, that is completed when a single solution, decision, or group member's recommendation is adopted by the group. This means that the group's performance tends to be determined by the most skilled member. Compare ADDITIVE TASK; COMPENSATORY TASK; CONJUNCTIVE TASK.

**dismissive attachment** an adult attachment style that combines a positive INTERNAL WORKING MODEL OF ATTACHMENT of oneself, characterized by a view of oneself as competent and worthy of love, and a negative internal working model of attachment of others, characterized by one's view that others are untrustworthy or undependable. Individuals with dismissive attachment are presumed to discount the importance of close relationships and to maintain rigid self-sufficiency. Compare FEARFUL ATTACHMENT; PREOCCUPIED ATTACHMENT; SECURE ATTACHMENT.

**disorder** *n.* a group of symptoms involving abnormal behaviors or physiological conditions, persistent or intense distress, or a disruption of physiological functioning. See also MENTAL DISORDER.

**disorder of written expression** in *DSM-IV-TR*, a LEARNING DISORDER in which writing skills are substantially below those expected for a person's chronological age, education, and measured intelligence. The writing difficulties—which may involve errors in grammar, punctuation, and paragraph organization, often combined with extremely poor handwriting and spelling errors—significantly interfere with academic achievement and activities of daily living that require writing skills. In *DSM-5*, the disorder has been subsumed within a category labeled **specific learning disorder** and is no longer considered a distinct diagnosis. Also called **developmental dysgraphia**.

**disorders of excessive somnolence (DOES)** one of four basic types of SLEEP DISORDERS, differentiated from the other types by the presence of excessive sleepiness for at least 1 month. The equivalent classification in *DSM-IV-TR* is PRIMARY HYPERSOMNIA (or in *DSM-5*, **hypersomnolence disorder**). Diagnosis can involve observation in a SLEEP LABORATORY, in which such criteria as nocturnal awakenings, sleep time, sleep continuity, SLEEP LATENCY, percentage of time in STAGE 2 SLEEP, and percentage of time in STAGE 3 SLEEP and STAGE 4 SLEEP are measured.

**disorders of initiating and maintaining sleep (DIMS)** one of four basic types of SLEEP DISORDERS, differentiated from the other types by the presence of INSOMNIA, that is, persistent inability to fall asleep or stay asleep. The equivalent classification in *DSM-IV-TR* is PRIMARY INSOM-

NIA (or in *DSM-5*, **insomnia disorder**). Diagnosis can involve observation in a SLEEP LABORATORY, in which such criteria as nocturnal awakenings, sleep time, sleep efficiency, breathing patterns, percentage of time in STAGE 2 SLEEP, percentage of time in STAGE 3 SLEEP and STAGE 4 SLEEP, minutes of REM SLEEP, and SLEEP LATENCY are measured.

**disorders of the self** in SELF PSYCHOLOGY, narcissistic problems resulting from insufficient response by others (such as parents) to one's needs. According to this view, an individual's self-cohesion, self-esteem, and vitality derive from and are maintained by the empathic responsiveness of others; lack of this response can lead to deficiencies or inabilities in loving other people and to a focus on oneself. [defined by Austrian-born U.S. psychoanalyst Heinz Kohut (1913–1981)]

**disorders of the sleep–wake cycle schedule** one of four basic types of SLEEP DISORDERS, differentiated from the other types in that it results from a mismatch between one's internal CIRCADIAN RHYTHM and one's actual sleep schedule. The equivalent classification in *DSM-IV-TR* is CIRCADIAN RHYTHM SLEEP DISORDER (or in *DSM-5*, **circadian rhythm sleep–wake disorder**). Rotating work-shift schedules and JET LAG are two common causes of this disorder. Diagnosis can involve observation in a SLEEP LABORATORY, in which such criteria as nocturnal awakening, sleep time, sleep efficiency, breathing patterns, body temperature, minutes of REM SLEEP, and SLEEP LATENCY are measured.

**disorganization** *n.* loss or disruption of orderly or systematic structure or functioning. For example, thought disorganization is an inability to integrate thought processes; behavior disorganization manifests as self-contradictory or inconsistent behavior.

**disorganized attachment** in the STRANGE SITUATION, a form of INSECURE ATTACHMENT in which infants show no coherent or consistent behavior during separation from and reunion with their parents. Also called **disoriented attachment**.

**disorganized behavior** behavior that is self-contradictory or inconsistent. It may include childlike silliness, purposeless behavior, unpredictable agitation, or extreme emotional reaction (e.g., laughing after a catastrophe). A typical example is dressing in clothing inappropriate for the weather (e.g., wearing several layers on a warm summer day). Disorganized behavior is commonly seen in individuals with schizophrenia.

**disorganized development** disruption in the normal course of ATTACHMENT in which a child does not learn how to deal with separation from or reunion with a parent and reacts inconsistently to the parent. See DISORGANIZED ATTACHMENT).

**disorganized offender** the type of offender who approaches his or her crimes in a frenzied and impulsive manner, is typically of low to moderate intelligence and socially withdrawn, and has a poor work history. Compare ORGANIZED OFFENDER.

**disorganized schizophrenia** in *DSM-IV-TR*, a subtype of schizophrenia characterized primarily by random and fragmented speech and behavior and by flat or inappropriate affect, frequently associated with grimaces, odd or unusual mannerisms, laughter, and extreme social withdrawal. It tends to be the most severe of the schizophrenia subtypes and is often associated with poor premorbid personality and early and insidious onset. This subtype

has been eliminated from *DSM-5*. Historically, and in other classifications, it is known as **hebephrenia** or **hebephrenic schizophrenia**.

**disorganized speech** incoherent speech. This may be speech in which ideas shift from one subject to another seemingly unrelated subject, sometimes described as *LOOS-ENING OF ASSOCIATIONS*. Other types of disorganized speech include responding to questions in an irrelevant way, reaching illogical conclusions, and making up words. See *NEOLOGISM*; *PARALOGIA*.

**disorientation** *n.* impaired ability to identify oneself or to locate oneself in relation to time, place, or other aspects of one's surroundings. Long-term disorientation can be characteristic of neurological and psychological disorders; temporary disorientation can be caused by alcohol or drugs or can occur in situations of acute stress, such as fires or earthquakes. See also *CONFUSION*; *TOPOGRAPHICAL DISORIENTATION*. —**disoriented** *adj.*

**disoriented attachment** see *DISORGANIZED ATTACHMENT*.

**disparate impact** see *ADVERSE IMPACT*.

**disparate sensations** **1.** different sensory or cognitive responses arising from a single object or idea. **2.** the bases for thought and perception, which are integrated by the brain into wholes.

**dispersal** *n.* the departure of nonhuman animals from their natal group to join a different group or find mates elsewhere. Dispersal is thought to be important in reducing inbreeding and avoiding competition with older individuals of the same sex. Species vary in terms of whether dispersal is male biased or female biased or whether both sexes disperse. It is a costly behavior, because the dispersing individual is more subject to predation as well as to aggression from other members of the same species. See also *PHILOPATRY*.

**dispersion** *n.* the degree to which a set of scores deviate from the mean. Also called **spread**. See also *RANGE*; *STANDARD DEVIATION*; *VARIANCE*.

**dispersion matrix** see *COVARIANCE MATRIX*.

**dispersion measure** an index of variability, or how dispersed a set of values is for a given variable. Common measures of dispersion include the *RANGE*, which is the highest minus the lowest score, and the *STANDARD DEVIATION*, which is the average distance of scores from the *MEAN*. The larger the dispersion measure, the more spread out the scores.

**dispersion parameter** an index of the *SKEWNESS* (lopsidedness) or *KURTOSIS* (peakedness) of a distribution. The *NORMAL DISTRIBUTION* thus does not need a dispersion parameter as skewness and kurtosis are not present (i.e., equal zero) in such a distribution. Also called **scale parameter**.

**displaced aggression** the direction of hostility away from the source of frustration or anger and toward either the self or a different entity. Displaced aggression may occur, for example, when circumstances preclude direct confrontation with the responsible entity because it is perceived as too powerful to attack without fear of reprisal. Compare *DIRECT AGGRESSION*.

**displacement** *n.* the transfer of feelings or behavior from their original object to another person or thing. In

psychoanalytic theory, displacement is considered to be a *DEFENSE MECHANISM* in which the individual discharges tensions associated with, for example, hostility and fear by taking them out on a less threatening target. Thus, an angry child might break a toy or yell at a sibling instead of attacking the father; a frustrated employee might criticize his or her spouse instead of the boss; or a person who fears his or her own hostile impulses might transfer that fear to knives, guns, or other objects that might be used as a weapon. See also *DISPLACED AGGRESSION*; *DRIVE DISPLACEMENT*; *SCAPEGOATING*. —**displace** *vb.*

**displacement behavior** a behavior in which an individual substitutes one type of action for another when the first action is unsuccessful or when two competing motivations are present that lead to incompatible actions. A gull at a territory boundary may direct attacklike actions toward the ground rather than its rival due to simultaneous aggressive and fearful responses to the opponent. A laboratory animal that is frustrated by servings of food that are small and delivered slowly may express displacement behavior by drinking instead of eating. Also called **displacement activity**.

**displacement of affect** see *TRANSPPOSITION OF AFFECT*.

**display** *n.* **1.** the presentation of stimuli to any of the senses. **2.** more or less stereotyped actions (i.e., actions repeated with little variation) that bring about a response in another individual: an integral part especially of *ANIMAL COMMUNICATION*. Display behavior may be a physical or vocal signal, usually involving stimulation of the visual or auditory senses. It may include body language that would convey a message of courtship to a member of the opposite sex (e.g., a show of plumage or color) or a suggestion that would be interpreted by an opponent as threatening (e.g., bared teeth or hissing noises). Because of their stereotyped nature, displays are thought to have evolved from physiological or behavioral responses to previously direct interactions that have now become symbolic. For example, a human being may be flushed when aggressive or pale when fearful due to vasodilation or vasoconstriction associated with attack or avoidance. These vascular changes have now become predictive of the behavior likely to follow and serve as communication signals. See also *DISPLAY RULE*.

**display-control compatibility** in ergonomics, a design principle stating that controls and their corresponding displays should be compatible on such dimensions as direction of movement, color, and location or alignment. See also *CONTROL FUNCTION LOGIC*; *PROXIMITY COMPATIBILITY*.

**display design** in ergonomics, the design of displays for effective transmission of information in different situations. Displays may be static devices (such as signs, labels, and diagrams) or dynamic devices (such as speedometers, clocks, and temperature gauges). The information conveyed may include directions and instructions, safety messages and alerts, and fluctuating information about the state of a particular system (e.g., speed, volume, or temperature). See *BAR DISPLAY*; *OBJECT DISPLAY*; *INTEGRATED DISPLAY*; *SEPARATED DISPLAY*. See also *DISPLAY-CONTROL COMPATIBILITY*.

**display rule** a socially learned standard that regulates the expression of emotion. Display rules vary by culture; for example, the expression of anger may be considered appropriate in some cultures but not in others. [coined in 1972 by U.S. psychologist Paul Ekman (1934– )]

**disposition** *n.* a recurrent behavioral, cognitive, or affec-



tive tendency that distinguishes an individual from others. See also PERSONAL DISPOSITION.

**dispositional attribution** the ascription of one's own or another's actions, an event, or an outcome to internal or psychological causes specific to the person concerned, such as traits, moods, attitudes, decisions and judgments, abilities, or effort. Also called **internal attribution**; **personal attribution**. Compare SITUATIONAL ATTRIBUTION.

**dispositional hearing** a proceeding held in juvenile court cases after the court finds that an offense has been committed. It is similar to the sentencing hearing or penalty phase in an adult criminal court.

**disruptive behavior** behavior that chronically threatens and intimidates others or violates social norms. The term is typically applied to the behavior of children, but it can also be used to describe adult behavior.

**disruptive behavior disorder** a set of disorders in which the primary symptom (e.g., violation of social rules and rights of others, defiance, hostile behavior) is severe enough to produce significant impairment in social or occupational functioning. In *DSM-IV-TR*, disruptive behavior disorders include CONDUCT DISORDER, OPPOSITIONAL DEFIANT DISORDER, and **disruptive behavior disorder not otherwise specified** (i.e., a pattern of behavior, such as aggression or defiance, that results in clinically significant impairment but does not conform to the full diagnostic criteria of the other disorders in this category). *DSM-5* uses the rubric **disruptive, impulse-control, and conduct disorders** to encompass conditions characterized by problems with behavioral and emotional self-control, including not only conduct and oppositional defiant disorders but also INTERMITTENT EXPLOSIVE DISORDER, PYROMANIA, and KLEPTOMANIA, among others. It also includes in this category ANTISOCIAL PERSONALITY DISORDER, cross-listing it under the category for personality disorders.

**disruptive mood dysregulation disorder** in *DSM-5*, a new diagnosis in children 18 years or younger with persistent irritability and an average of at least three episodes per week of extreme behavioral dyscontrol (e.g., severe rages). It has been established as an alternative to the diagnosis of BIPOLAR DISORDER in children.

**disrupt-then-reframe technique** a persuasion technique for enhancing COMPLIANCE in which one uses an odd request to surprise or confuse another person before following up with a new framing of the same request. In the original investigations of this technique, sellers offered potential buyers a set of note cards for 300 pennies (the odd request) and then broke in on the buyers' confusion about the price in pennies with a reframed pitch ("that's \$3. It's a bargain"). The studies reported that nearly twice as many people bought the cards after experiencing the disrupt-and-reframe approach as did those who received only a standard pitch in which the cards were offered for \$3. [introduced by U.S. psychologists Barbara Price Davis and Eric S. Knowles (1941– )]

**dissent** *n.* 1. disagreement with majority opinion or established social norms. 2. disagreement with government policies, especially as expressed through organized protests or social ACTIVISM. See also CIVIL DISOBEDIENCE; PASSIVE RESISTANCE. —**dissenter** *n.*

**dissimilarity coefficient** an index of difference or distance between two objects, variables, or samples. It may be based on CORRELATION, with lower values indicating more difference or distance, or VARIANCE, with higher values in-

dicating greater difference or distance. A dissimilarity coefficient often is used in multivariate procedures such as CLUSTER ANALYSIS, MULTIDIMENSIONAL SCALING, and PRINCIPAL COMPONENTS ANALYSIS. Also called **distance measure**. Compare SIMILARITY COEFFICIENT.

**dissociated learning** see STATE-DEPENDENT LEARNING.

**dissociated state** a reaction to a traumatic event in which the individual splits the components of the event into those that can be faced in the present and those that are too harmful to process. See also DISSOCIATIVE DISORDERS.

**dissociation** *n.* 1. a DEFENSE MECHANISM in which conflicting impulses are kept apart or threatening ideas and feelings are separated from the rest of the psyche. See COMPARTMENTALIZATION. 2. in research, a method used to differentiate processes, components, or variables. For instance, it might involve discovering a variable that influences short-term memory but not long-term memory. See DOUBLE DISSOCIATION.

**dissociative amnesia** in *DSM-IV-TR* and *DSM-5*, a DISSOCIATIVE DISORDER characterized by failure to recall important information about one's personal experiences, usually of a traumatic or stressful nature, that is too extensive to be explained by normal forgetfulness. Recovery of memory often occurs spontaneously within a few hours and is usually connected with removal from the traumatic circumstances with which the amnesia was associated. Formerly called **psychogenic amnesia**. See also FUNCTIONAL AMNESIA.

**dissociative anesthetic** an agent capable of producing amnesia, analgesia, and sedation without inducing loss of consciousness. PCP and KETAMINE were formerly used as dissociative anesthetics.

**dissociative barriers** the psychological mechanisms that prevent individuals from fully remembering a traumatic event. The trauma is presumed to be implicated in the development of a dissociative disorder, and the barriers are theorized to serve a protective function, allowing the traumatized person to avoid knowledge of horrific life events.

**dissociative disorders** any of a group of disorders characterized by a sudden or gradual disruption in the normal integrative functions of consciousness, memory, or perception of the environment. Such disruption may last for minutes or years, depending on the type of disorder. Some of the disorders typically included in this category are DISSOCIATIVE AMNESIA, DISSOCIATIVE FUGUE, DISSOCIATIVE IDENTITY DISORDER, and DEPERSONALIZATION DISORDER.

**dissociative fugue** in *DSM-IV-TR*, a DISSOCIATIVE DISORDER in which the individual suddenly and unexpectedly travels away from home or a customary place of daily activities and is unable to recall some or all of his or her past. Symptoms also include either confusion about personal identity or assumption of a new identity. No other signs of mental disorder are present, and the fugue state can last from hours to months. Travel can be brief or extended in duration, and there may be no memory of travel once the individual is brought back to the pre-fugue state. *DSM-5* subsumes dissociative fugue as a feature that may or may not occur with DISSOCIATIVE AMNESIA rather than as a separate diagnosis.

**dissociative group** a group with which one wishes not to be associated. Compare ASPIRATIONAL GROUP.

**dissociative hysteria** a former name for a DISSOCIATIVE DISORDER.

**dissociative identity disorder (DID)** a DISSOCIATIVE DISORDER characterized by the presence in one individual of two or more distinct identities or personality states that each recurrently take control of the individual's behavior. It is believed to be associated with severe physical and sexual abuse, especially during childhood. Despite an increase in reported cases in the United States since the 1970s, DID remains the subject of considerable controversy, with many disputing its validity as a diagnosis and citing the incidences of childhood abuse reported by diagnosed individuals or their therapists as cases of FALSE MEMORY. DID is still commonly known as **multiple personality disorder**, a coinage usually attributed to U.S. physician Morton Prince (1854–1929), whose case history of his patient “Miss Beauchamp” (with personalities called Christine, Sally, and “the Idiot,” among other names) was one of the first in-depth examinations of the phenomenon, published in *The Dissociation of Personality* in 1906. Subsequent case histories, especially the books *The Three Faces of Eve* (1957) and *Sybil* (1973) and their film adaptations, contributed to popularizing—some say sensationalizing—the phenomenon during the late 20th century. See also SPLIT PERSONALITY.

**dissociative pattern** a pattern of behavior consistent with DISSOCIATIVE DISORDERS, as evidenced by disruption in the normal integrative functions of consciousness, memory, or perception of the environment.

**dissociative psychosis** see HYSTERICAL PSYCHOSIS.

**dissociative stupor** a profound decrease in or absence of voluntary movement and responsiveness to external stimuli, apparently resulting from acute stress.

**dissociative trance disorder** a DISSOCIATIVE DISORDER characterized by involuntary alterations in consciousness, identity, awareness or memory, and motor functioning that result in significant distress or impairment. The two subtypes of the disorder are distinguished by the individual's identity state. In **possession trance**, the individual's usual identity is replaced by a new identity perceived to be an external force, such as a ghost, another person, or a divine being, and there is loss of memory for the episode of trance. In **trance disorder**, individuals retain their usual identity but have an altered perception of their milieu. These types of dissociative experiences are common in various cultures and may be part of customary religious practice; they should not be regarded as pathological unless considered abnormal within the context of that cultural or religious group. Also called **possession trance disorder**; **trance and possession disorder (TPD)**.

**dissonance** *n.* see COGNITIVE DISSONANCE.

**dissonance reduction** the process by which a person reduces the uncomfortable psychological state that results from inconsistency among elements of a cognitive system (see COGNITIVE DISSONANCE). Dissonance can be reduced by making one or more inconsistent elements consistent with other elements in the system, by decreasing the perceived importance of an inconsistent element, or by adding new consistent elements to the system. Finally, SELF-AFFIRMATION THEORY postulates that merely affirming some valued aspect of the self, even if it is not directly relevant to the inconsistency, can reduce dissonance. See also BOLSTERING OF AN ATTITUDE; FORCED COMPLIANCE EFFECT.

**distal** *adj.* **1.** situated or directed toward the periphery of

the body or toward the end of a limb. **2.** remote from or mostly distantly related to the point of reference or origin. Compare PROXIMAL.

**distal effect** any influence that particular responses of an organism may have on the environment.

**distal 18q-** see CHROMOSOME 18, DELETION OF LONG ARM.

**distal response** a response of an organism that produces an effect in the environment. Compare PROXIMAL RESPONSE.

**distal stimulus** in perception, the actual object in the environment that stimulates or acts on a sense organ. Compare PROXIMAL STIMULUS.

**distance** *n.* the disparity between two values or entities. In statistics, the term often refers to the difference or DEVIATION between a RAW SCORE and a mean score.

**distance cue** any of the auditory or visual cues that enable an individual to judge the distance of the source of a stimulus. Auditory distance cues include intensity of familiar sounds (e.g., voices), intensity differences between the ears, and changes in spectral content. In vision, distance cues include the size of familiar objects and ACCOMMODATION. See also DEPTH CUE.

**distance learning** the process of acquiring knowledge in a location remote from the teaching source. Distance learning may occur via correspondence coursework, coursework presented over radio or television, computerized software programmed learning, coursework programmed and accessible on the Internet, live Internet hook-up to an instructor, direct live remote television, and live group videoconferencing. Also called **distance education**.

**distance measure** see DISSIMILARITY COEFFICIENT.

**distance paradox** see SIZE-DISTANCE PARADOX.

**distance perception** the ability of a viewer to judge the distance between him- or herself and a visual target. See also DEPTH CUE.

**distance therapy** any type of psychotherapy in which sessions are not conducted face to face because of problems of mobility, geographical isolation, or other limiting factors. Distance therapy includes interventions by telephone, audioconference, or videoconference (known collectively as **telepsychotherapy**) and the Internet (see E-THERAPY).

**distance vision** vision that permits discrimination of objects more than 6 m (20 ft) from the observer.

**distance zone** the area of physical distance commonly adopted between interacting individuals. Interpersonal distances can be influenced by culture and tend to be relatively small when people are familiar with each other and larger in formal or impersonal interactions. See INTIMATE ZONE; PERSONAL DISTANCE ZONE; PUBLIC DISTANCE ZONE; SOCIAL ZONE. See also PROXEMICS.

**distinctiveness effect** the finding that people tend to have superior memory for odd or unusual information. The most cited example is the **von Restorff effect**, originally proposed in 1933 by German psychologist Hedwig von Restorff (1906–1962). Also called the **isolation effect** or **Restorff phenomenon**, it refers specifically to superior memory for isolated items. For instance, if most of the words in a list are printed in blue ink, one word printed in red will be better remembered than the blue words; the isolated item is odd only with respect to its immediate con-

text—that is, it is the only member of a category (because it is printed in a different color than the other items in the list). By contrast, other types of distinctiveness effects occur when an item is distinct with respect to general knowledge. They include, among others, the **bizarreness effect** (superior memory for offbeat images or sentences as compared to common images or sentences) and the **orthographic distinctiveness effect** (superior memory for words with unusual letter combinations, as in *subpoena*, compared to words with more typical letter combinations, as in *bookcase*).

**distinctness** *n.* **1.** the quality of being perceived clearly and as separate from other stimuli that is characteristic of an object upon which attention is focused. **2.** in tasks requiring SELECTIVE ATTENTION, the extent to which the target is different from DISTRACTOR stimuli. Performance on selective attention tasks is better when the target is distinct from the distractors.

**distorted speech test** a test used to evaluate auditory and perceptual processing problems. In such tests, certain elements of the acoustic signal are removed. Examples are FILTERED SPEECH and TIME-COMPRESSED SPEECH.

**distorting-photograph procedure** a procedure for assessing body-size perception that asks individuals to indicate their size by adjusting a photographic self-image so that it appears within a range of 20% over or under their actual size. Discrepancy between the body size in the selected image and that in an accurate image is used as an index of perceptual distortion of body size.

**distortion** *n.* **1.** any inaccuracy of perception, cognition, memory, and so forth. **2.** either the unconscious process of altering emotions and thoughts that are unacceptable in the individual's psyche or the conscious misrepresentation of facts, which often serves the same underlying purpose of disguising that which is unacceptable to or in the self. **3.** in psychoanalytic theory, the outcome of the DREAM-WORK that modifies forbidden thoughts and wishes to make them more acceptable to the EGO. Such distortion of the dream WISH through the use of substitutes and symbols means that only an act of INTERPRETATION can uncover the true meaning of the dream.

**distractibility** *n.* difficulty in maintaining attention or a tendency to be easily diverted from the matter at hand. Excessive distractibility is frequently found in children with learning disorders or attention-deficit/hyperactivity disorder and in people experiencing manic or hypomanic episodes.

**distractible speech** a speech pattern in which the individual shifts rapidly from topic to topic in response to external or internal stimuli. It is a common symptom in mania. See also FLIGHT OF IDEAS.

**distraction** *n.* **1.** the process of interrupting attention. **2.** a stimulus or task that draws attention away from the task of primary interest.

**distractor** *n.* a stimulus or an aspect of a stimulus that is irrelevant to the task or activity being performed. In memory studies, an item or task may be used as a distractor before the participant attempts to recall the study material to be remembered; the distractor minimizes the participant's rehearsal of the material and ensures that it is not currently stored in WORKING MEMORY. For instance, the participant might be given some arithmetic problems to solve as

a distractor task between the study and recall phases of an experiment. See also VISUAL ATTENTION.

**distractor task** see BROWN–PETERSON DISTRACTOR TECHNIQUE; DISTRACTOR.

**distress** *n.* **1.** the negative stress response, often involving negative affect and physiological reactivity: a type of stress that results from being overwhelmed by demands, losses, or perceived threats. It has a detrimental effect by generating physical and psychological maladaptation and posing serious health risks for individuals. This generally is the intended meaning of the word STRESS. Compare EUSTRESS. **2.** a negative emotional state in which the specific quality of the emotion is unspecified or unidentifiable. For example, STRANGER ANXIETY in infants is more properly designated **stranger distress** because the infant's negative behavior, typically crying, allows no more specific identification of the emotion. —**distressing** *adj.*

**distress tolerance** the level of either (a) one's unwillingness to experience emotional distress as part of pursuing desired goals or (b) one's inability to engage in goal-directed behaviors when experiencing distress. Low distress tolerance is related to a range of disorders, including borderline personality disorder, substance abuse, and eating disorders; some treatments (e.g., DIALECTICAL BEHAVIOR THERAPY) are designed in part to raise an individual's level of distress tolerance by habituating him or her to the experience of adapting to distress and other negative emotions.

**distributed actions theory** a model of leadership that assumes that group effectiveness and member satisfaction increase when certain key functions of a leader, such as decision making, task orientation, INITIATING STRUCTURE, and the improvement of intermember relations, are not the sole responsibility of the leader but are instead distributed throughout the group. See also LEADERSHIP THEORIES; PARTICIPATIVE LEADERSHIP.

**distributed attention** see SPATIAL ATTENTION.

**distributed cognition** a model for intelligent problem solving in which either the input information comes from separated and independent sources or the processing of this input information takes place across autonomous computational devices. Agent-based problem solving is sometimes described as distributed cognition.

**distributed knowledge** see DISTRIBUTED REPRESENTATION.

**distributed practice** a learning procedure in which practice periods for a particular task are separated by lengthy rest periods or lengthy periods of practicing different activities or studying other material, rather than occurring close together in time. In many learning situations, distributed practice is found to be more effective than MASSED PRACTICE. Also called **spaced learning**; **spaced practice**. See also SPACING EFFECT.

**distributed-practice effect** see SPACING EFFECT.

**distributed processing** information processing in which computations are made across a series of processors or units, rather than being handled in a single, dedicated CENTRAL PROCESSOR. See also PARALLEL DISTRIBUTED PROCESSING; PARALLEL PROCESSING.

**distributed representation** in information processing, a system of representation in which information pertaining to a given unit of knowledge is carried by many

separate components of the system, rather than being stored together as a single entity.

**distribution** *n.* the relation between the values that a variable may take and the relative number of cases taking on each value. A distribution may be simply an empirical description of that relationship or a mathematical (probabilistic) specification of the relationship. For example, it would be helpful in examining the distribution of scores for a college exam to view the frequency of students who achieved various percentages correct on the exam. In a **NORMAL DISTRIBUTION**, most of the scores would fall in the middle (i.e., about 70% correct or a score of C), with fewer students achieving a D (i.e., 60%–69% correct) or a B (i.e., 80%–89% correct) and even fewer earning 59% or less (i.e., an F) or 90% to 100% (e.g., an A). See also **FREQUENCY DISTRIBUTION**; **PROBABILITY DISTRIBUTION**.

**distributional redundancy** in psychological aesthetics, the development of uncertainty in an artistic pattern by making some elements occur more frequently than others. Distributional redundancy is one of two kinds of internal restraint in pattern variation, the other being **correlational redundancy**, in which certain combinations of elements are made to occur more frequently than others.

**distribution-free test** see **NONPARAMETRIC TEST**.

**distribution function** see **CUMULATIVE DISTRIBUTION FUNCTION**.

**distributive analysis and synthesis** an approach to psychotherapy that developed within **PSYCHOBIOLOGY**. In the first stage, a systematic analysis is made from information gained from the client about past and present experience and distributed into such categories as symptoms and complaints, assets and liabilities, and pathological or immature reactions. In the second stage, this study is used as a prelude to a constructive synthesis built on the client's own strengths, goals, and abilities. [developed by Adolf MEYER]

**distributive bargaining** a form of bargaining seen in adversarial situations in which the parties involved must allocate finite resources, such that one party's gain necessarily entails the other's loss. The parties make demands of each other by indicating their preferred outcomes, using such contentious tactics as threats and arguments, and insist that they remain committed to their positions. Also called **competitive bargaining**. Compare **INTEGRATIVE BARGAINING**.

**distributive justice** **1.** the belief that rules can be changed and punishments and rewards distributed according to relative standards, specifically according to equality and equity. In the **equality stage** (ages 8 to 10), children demand that everyone be treated in the same way. In the **equity stage** (ages 11 and older), children make allowances for subjective considerations, personal circumstances, and motive. Compare **IMMANENT JUSTICE**. [postulated by Jean PI-AGET] **2.** see **ORGANIZATIONAL JUSTICE**.

**disturbance of association** interruption of a logical chain of culturally accepted thought, leading to apparently confused and haphazard thinking that is difficult for others to comprehend. It is one of the **FUNDAMENTAL SYMPTOMS** of schizophrenia described by Eugen BLEULER. See also **SCHIZOPHRENIC THINKING**; **THOUGHT DISORDER**.

**disturbance term** see **ERROR TERM**.

**disulfiram** *n.* a drug used as an aversive agent in manag-

ing alcohol abuse or dependence. Disulfiram inhibits the activity of acetaldehyde dehydrogenase, an enzyme responsible for the metabolism of alcohol (ethanol) in the liver. Consumption of alcohol following administration of disulfiram results in accumulation of acetaldehyde, a toxic metabolic product of ethanol, with such unpleasant effects as nausea, vomiting, sweating, headache, a fast heart rate, and palpitations. Because of the serious nature of some of these effects (which can include damage to the liver and heart), **INFORMED CONSENT** is required before use of disulfiram. Disulfiram by itself is rarely effective in managing alcoholism and should be administered only in concert with a carefully designed behavioral regimen. U.S. trade name: **Antabuse**.

**disuse supersensitivity** a condition in which target cells, on losing neural input through either denervation or chronic application of an **ANTAGONIST** drug, produce more than the normal number of **RECEPTOR** molecules, resulting in an exaggerated response when a neurotransmitter is applied. When this condition results from denervation, it is also called **denervation sensitivity**.

**disuse theory of aging** the theory that some decline in psychological abilities with aging may be due to the lack of use of those abilities. According to this theory, as adults grow older, they engage their minds less and less with the types of tasks that are found on most psychological tests, particularly tests assessing cognitive functioning.

**disynaptic arc** a **NEURAL ARC** in which there is an **INTERNEURON** between a sensory neuron and a motor neuron, requiring a neural signal to cross two synapses to complete the arc. See also **REFLEX ARC**.

**diuretic** *n.* a substance that increases the flow of urine. Diuretics may be endogenous agents (e.g., dopamine) or prescription or nonprescription drugs (e.g., **THIAZIDE DIURETICS**). Many diuretics (including thiazides) work by inhibiting or blocking the reabsorption of sodium and potassium ions from the kidney filtrate, so that less water is reabsorbed across the kidney tubules. Others, called osmotic diuretics, increase the osmolality of the filtrate. Both mechanisms result in increased urine volume. Some diuretics may produce adverse effects with psychological implications, for example, lassitude, weakness, vertigo, sexual impotence, headaches, polydipsia (intense thirst), irritability, or excitability.

**diurnal** *adj.* **1.** daily; that is, recurring every 24 hours. See **BIOLOGICAL CLOCK**; **CIRCADIAN RHYTHM**. **2.** occurring or active during daylight hours. Compare **NOCTURNAL**. —**diurnality** *n.*

**diurnal enuresis** see **ENURESIS**.

**diurnal mood variation** a feature of some bipolar disorders and depressive disorders in which daily, predictable emotional fluctuations occur. Typically, this pattern consists of an elevation of mood during the daytime and evening hours and a depression of mood during the overnight and morning hours. See also **SEASONAL AFFECTIVE DISORDER**.

**diurnal rhythm** see **CIRCADIAN RHYTHM**.

**divagation** *n.* rambling, digressive speech, writing, or thought. See also **DISORGANIZED SPEECH**.

**divalproex sodium** an **ANTICONVULSANT** drug, derived from **VALPROIC ACID**, originally used in the treatment of absence seizures and now used primarily for the stabilization of mania and for prophylaxis in individuals with bipolar

disorder. It has also been used in the treatment of various other conditions, including autism, migrainous neuralgia and other forms of head pain, other chronic pain syndromes, and mood symptoms associated with borderline personality disorder. Liver damage and reduction in blood platelets (thrombocytopenia) may occur with use of the drug, so blood count and liver function should be monitored, particularly in the early course of treatment and particularly in children, as most fatalities due to liver failure have occurred in children. Because of its possible association with NEURAL TUBE defects, divalproex sodium should not be prescribed during pregnancy. The drug has significant interactions with antidepressants, antipsychotics, anxiolytics, and numerous other classes of medication. U.S. trade name: **Depakote**.

**divergence** *n.* the rotation of the two eyes outward when shifting fixation from a nearby target object to one that is far away. A permanent divergence of one eye is termed EXOTROPIA. See also VERGENCE. —**divergent** *adj.*

**divergent evolution** the process by which populations become increasingly different from each other through different SELECTION PRESSURES acting in different habitats. Divergent evolution is a major way in which new species are formed. It contrasts with CONVERGENT EVOLUTION, in which different species become more similar to each other through adaptation to similar habitats.

**divergent production** the capacity to produce novel solutions to a problem. It is one of the abilities recognized in the STRUCTURE OF INTELLECT MODEL. Compare CONVERGENT PRODUCTION.

**divergent strabismus** see EXOTROPIA; STRABISMUS.

**divergent thinking** creative thinking in which an individual solves a problem or reaches a decision using strategies that deviate from commonly used or previously taught strategies. This term is often used synonymously with LATERAL THINKING. Compare CONVERGENT THINKING. [defined in 1967 by Joy Paul GUILFORD]

**divergent validity** see DISCRIMINANT VALIDITY.

**diversion program** a program that may be available in some circumstances for individuals, especially juveniles and young adults, who have been arrested for the first time or for certain crimes. After the defendant has been formally charged with a crime and has entered a plea, he or she may be sent to a diversion program (e.g., for drug treatment) instead of proceeding to trial; the charges are dropped or reduced if the individual successfully completes the program. Under federal sentencing guidelines, a diversion program for adults counts as a sentence if the defendant pleaded guilty, whereas juveniles who have successfully completed diversion programs do not have their crimes included in their permanent record. In **deferred prosecution**, individuals may be required to complete the same types of programs (e.g., alcohol treatment, community service), but they are granted a conditional amnesty by the prosecutor before they enter a plea; if they do not complete the agreed-upon programs, they return to court for a trial and sentencing for the original crime, but if they do, the charges are dropped and are not made part of the defendant's police record.

**diversity** *n.* the wide range of variation of living organisms in an ecosystem. When describing people and population groups, diversity can include such factors as age, gender, sexuality, race, ethnicity, nationality, and religion,

as well as education, livelihood, and marital status. See CULTURAL DIVERSITY.

**diversity training** personnel training programs that help employees to appreciate and deal effectively with cultural, ethnic, racial, gender, sexual orientation, and other differences among people.

**diversive exploration** EXPLORATORY BEHAVIOR used as a means of seeking novel or otherwise activating stimuli and thus increasing arousal. Compare INSPECTIVE EXPLORATION. [defined by Daniel E. BERLYNE]

**divided attention** attention to two or more channels of information at the same time, so that two or more tasks may be performed concurrently. It may involve the use of just one sense (e.g., hearing) or two or more senses (e.g., hearing and vision).

**divided brain** see SPLIT BRAIN.

**divided consciousness** Ernest R. HILGARD's characterization of DISSOCIATION as a state in which one stream of mental activity (e.g., perception, memory, planning) proceeds outside of phenomenal awareness and apparently outside of voluntary control. In his NEODISSOCIATION THEORY, Hilgard proposed that this state could be best studied through HYPNOSIS. See also COCONSCIOUSNESS; UNITY OF CONSCIOUSNESS.

**divination** *n.* the purported art or practice of discerning future events or hidden knowledge by supernatural means. The numerous forms of divination include ASTROLOGY, AUGURY, CRYSTAL GAZING, LECANOMANCY, NECROMANCY, NUMEROLOGY, ONEIROMANCY, PALMISTRY, and RHABDOMANCY. —**divinatory** *adj.* —**divine** *vb.*

**divine right** the theory or presumption that monarchs derive their authority to govern directly from God and not from the governed or any entity representative of them. The theory saw its heyday under the reigns of the English kings James I (1603–1625) and Charles I (1625–1649) and the French king Louis XIV (1643–1715). Also called **divine right of kings**. See also SOCIAL CONTRACT.

**diviner's sage** see SALVIA.

**divorce** *n.* the legal dissolution of marriage, leaving the partners free to remarry. Divorce may significantly influence well-being, with many individuals experiencing depression, loneliness and isolation, self-esteem difficulties, or other psychological distress. Parental divorce also has been shown to have negative consequences on the psychosocial adjustment of children and adolescents. See also EMOTIONAL DIVORCE; MARITAL SEPARATION. —**divorcee** *n.*

**divorce counseling** counseling provided to individuals and their family members to help them cope with the problems resulting from divorce. In either family or individual sessions, family members may be encouraged to let go of the past and learn to deal with their present emotions. Spouses seen either individually or together may explore what their own contributions to the breakup may have been, so as to decrease blame and increase the probability that they can interact effectively in the future.

**divorce mediation** counseling aimed at resolving issues for couples facing separation or divorce. The mediator remains impartial while assisting in negotiations to come to an agreed settlement over such issues as financial arrangements, child custody and visitation, and child support. Divorce mediation attempts to avoid confrontation and undue litigation prior to final settlement.

**dizygotic twins (DZ twins)** twins, of the same or different sex, that have developed from two separate ova fertilized by two separate sperm. DZ twins are genetically as much alike as ordinary full siblings born as SINGLETONS, with each individual inheriting a random half of each parent's genes. On average, DZ twins are approximately half as genetically similar to one another as MONOZYGOTIC TWINS. For every 1,000 pregnancies, there are, on average, 7 to 12 DZ twins. Also called **fraternal twins**. See also TWIN STUDY.

**dizziness** *n.* a sensation of light-headedness or unsteadiness, sometimes with nausea and a fear of fainting. See VERTIGO.

**D-KEFS** abbreviation for DELIS-KAPLAN EXECUTIVE FUNCTION SYSTEM.

**DL** abbreviation for difference limen. See DIFFERENCE THRESHOLD.

**D-love** *n.* see DEFICIENCY LOVE.

**DLPFC** abbreviation for DORSOLATERAL PREFRONTAL CORTEX.

**DMN 1.** abbreviation for DEFAULT-MODE NETWORK. **2.** abbreviation for DORSOMEDIAL NUCLEUS.

**dmRI** abbreviation for DIFFUSION MAGNETIC RESONANCE IMAGING.

**DMS** abbreviation for DIACRITICAL MARKING SYSTEM.

**DMT** *dimethyltryptamine*: a HALLUCINOGEN belonging to the indolealkylamine family, to which LSD, PSILOCIN, and DET also belong.

**DMTS** abbreviation for DELAYED MATCHING TO SAMPLE.

**DNA** *deoxyribonucleic acid*: one of the two types of NUCLEIC ACID found in living organisms; it is the principal carrier of genetic information in chromosomes and, to a much lesser extent, in MITOCHONDRIA. Certain segments of the DNA molecules constitute the organism's genes. Structurally, DNA consists of two intertwined, helically coiled strands of nucleotides—the **double helix**. The nucleotides each contain one of four bases: adenine, guanine, cytosine, or thymine. Each base forms hydrogen bonds with the adjacent base on the other, sister strand, producing consecutive **base pairs** arranged rather like the “rungs” on a helical ladder. Adenine (A) is always paired with thymine (T), and guanine (G) with cytosine (C). DNA can undergo self-replication in such a way that each strand serves as the template for the assembly of a complementary matching strand, resulting in two molecules exactly like the original helix in terms of base pairing. The sequence of bases in the DNA of genes contains information according to the GENETIC CODE. Each gene specifies the manufacture of a particular protein or ribosome. Because of DNA's ability to conserve its base sequence when replicating, the genetic instructions it carries are also conserved, both during cell division within a single organism and for that organism's offspring following reproduction. Compare RNA. See also RECOMBINANT DNA.

**DNA methylation** an epigenetic mechanism that involves the addition of a methyl group to the cytosine or adenine bases of DNA and that suppresses expression of particular genes under particular circumstances. It is crucial in normal cellular development and differentiation. Errors in DNA methylation have been associated with cancer and other diseases. See EPIGENETICS.

**DNR** abbreviation for do not resuscitate. See ADVANCE DIRECTIVE; INFORMED CONSENT.

**docility** *n.* the state of being passive or calm, easy to handle, or unlikely to attack. Docility can be induced in a strain of animals through selective breeding but may also occur as part of natural variation within a population. —**docile** *adj.*

**doctor shopping** visiting a number of different physicians in an attempt to obtain prescriptions for a drug or drugs that one abuses.

**doctrine** *n.* a teaching, dogma, or tenet of a system of belief or a body of such teachings. —**doctrinal** *adj.*

**doctrine of causes** the belief of ARISTOTLE that causality of an object had four different modes or types—formal, final, material, and efficient—corresponding roughly to its form, its goal, the substance of which it was made, and the work done to produce it.

**doctrine of double effect (DDE)** see PRINCIPLE OF DOUBLE EFFECT.

**doctrine of formal discipline** a pedagogical theory, now discredited, that was based on the old idea that the mind is divided into general faculties (e.g., reasoning, memory, attention) that, like muscles, could be strengthened through exercise. Training that strengthened a particular faculty was thought to benefit performance on any task that relied on that faculty. For example, students memorized texts and poems because training in memorization, regardless of the content, was thought to increase general memory capacity. See also TRANSFER OF TRAINING.

**Doerfler-Stewart test** a test originated during World War II for screening for functional hearing loss. It is used to examine a person's ability to respond to selected two-syllable words in quiet and in the presence of a MASKING noise. [Leo G. Doerfler (1919–2004), U.S. audiologist; J. P. Stewart]

**DOES** acronym for DISORDERS OF EXCESSIVE SOMNOLENCE.

**dogmatism** *n.* **1.** the tendency to act in a blindly certain, assertive, and authoritative manner in accordance with a strongly held set of beliefs. **2.** a personality trait characterized by this tendency. The belief system of such an individual is strongly held and resistant to change. Nevertheless, it often contains elements that are isolated from one another and thus may contradict one another. See ROKEACH DOGMATISM SCALE. [first proposed by U.S. psychologist Milton Rokeach (1918–1988)] —**dogmatic** *adj.*

**dol** *n.* a unit of pain sensation. One dol equals twice the threshold value.

**dolichocephalic** *adj.* see CEPHALIC INDEX. —**dolichocephaly** *n.*

**dolichomorphic** *adj.* denoting a body that is tall and thin. —**dolichomorph** *n.*

**doll play** in PLAY THERAPY, the use of dolls and figurines, which may represent individuals familiar to the child, to facilitate the expression of feelings, to enact stories that express emotional needs, or to reveal significant family relationships. Also called **projective doll play**.

**Dolophine** *n.* a trade name for METHADONE.

**dolorimeter** *n.* a device for the measurement of pain. —**dolorimetry** *n.*

**DOM** *dimethoxymethylamphetamine*: a synthetic HALLU-

CINOGEN that is also called **STP** for serenity, tranquility, and peace, which the substance is said to induce. It is a member of the phenylisopropylamine family, to which MDA and MDMA also belong.

**domain** *n.* **1.** the class of entities or events that constitutes the subject matter of a science or other discipline. **2.** a field of mastery, dominance, or endeavor. **3.** in BIOLOGICAL TAXONOMY, the highest category used in some classification systems, comprising one or more kingdoms. Three domains are recognized: Archaea (archaebacteria), Bacteria, and Eukarya (including animals, plants, fungi, and protists). **4.** in SET THEORY, the set of elements over which a function is defined.

**domain-free problem** in the literature on problem solving, a problem that can be solved without knowledge of a particular content domain, such as mathematics or science.

**domain-general ability** a cognitive ability, such as general intelligence or speed of information processing, that influences performance over a wide range of situations and tasks. Compare DOMAIN-SPECIFIC ABILITY.

**domain identification** the process by which individuals tacitly form a relationship between themselves and some field or pursuit, such as the academic, occupational, or athletic domain. Identification with the academic domain, for example, occurs for adolescents who value the rewards offered by success in educational settings, who feel they have the skills and resources needed in school, and who feel that others value achievements in this domain.

**domain-referenced test** an assessment that covers a specific area of study such that a score will reveal how much of this area has been mastered. This is similar to a CRITERION-REFERENCED TEST, in which a content area is mapped and scores reflect whether a particular standard or criterion has been achieved. Thus, if an individual got 90% of the items correct in a domain-referenced or criterion-referenced test, this would be a high score indicative of his or her deep knowledge and understanding of the content covered in the test. These kinds of tests are contrasted with NORM-REFERENCED TESTS, in which scores indicate how well a test taker performed on the items relative to others who took the test.

**domain-specific ability** a cognitive ability, such as face recognition, that is specific to a task and under control of a specific function of the mind, brain, or both. Compare DOMAIN-GENERAL ABILITY.

**domain-specific knowledge** specialized knowledge of a topic, such as knowledge of chess, baseball, or music.

**domestication** *n.* the selective breeding of animals so that they can live in close association with human beings. All domestic livestock, as well as pets and laboratory mice and rats, have been selectively bred to exhibit features that allow close association with human beings, typically by becoming more docile and less aggressive than wild animals. —**domesticate** *vb.*

**domestic partnership** two people who live together in a stable, intimate relationship and share the responsibilities of a household in the same way that a married couple would. Some states and companies in the United States and some other countries provide legal and economic rights to domestic partners (e.g., insurance and death benefits) that are similar to those granted to married couples. See COMMON-LAW MARRIAGE; SAME-SEX MARRIAGE.

**domestic violence** any action by a person that causes physical harm to one or more members of his or her family unit. For example, it can involve battering of one partner by another (**partner abuse**), violence against children by a parent, or violence against elders by younger family members. See also BATTERED WOMEN; CHILD ABUSE; ELDER ABUSE; INTIMATE PARTNER VIOLENCE.

**domiciliary care** inpatient institutional care provided because care in the individual's home is not available or not suitable. See also RESIDENTIAL CARE.

**dominance** *n.* **1.** the exercise of influence or control over others. Compare SUBMISSION. See also ANIMAL DOMINANCE. **2.** an older term for the tendency for one hemisphere of the cerebral cortex to exert greater influence than the other over certain key functions, such as speech production or manual tasks. Also called **hemispheric dominance**; **lateral dominance**. See HEMISPHERIC LATERALIZATION. **3.** in genetics, the ability of one allele to determine the PHENOTYPE of a HETEROZYGOUS individual. See DOMINANT ALLELE. —**dominant** *adj.*

**dominance aggression** a form of aggression in nonhuman animals that involves one individual maintaining a higher status over another through threats or actual attacks. See ANIMAL DOMINANCE.

**dominance hierarchy** **1.** a system of stable linear variations in prestige, status, and authority among group members. It is the PECKING ORDER of the group, which describes who is influential and who submits to that influence. See also STATUS RELATIONS. **2.** any ordering of motives, needs, or other psychological or physical responses based on priority or importance. An example is MASLOW'S MOTIVATIONAL HIERARCHY.

**dominance need** the need to dominate, lead, or otherwise control others. It is motivated by the desire for power, knowledge, prestige, or creative achievement. [proposed by Henry Alexander MURRAY]

**dominance–submission** a key dimension of interpersonal behavior, identified through FACTOR ANALYSIS, in which behavior is differentiated along a continuum ranging from high dominance (active, talkative, extraverted, assertive, controlling, powerful) to high subordination (passive, quiet, introverted, submissive, weak). Also called **ascendancy–submission**.

**dominance–subordination** a form of social relationship within groups with a leader or dominant member who has priority of access to resources over other, subordinate members of the community. Among nonhuman animals, dominance–subordination relationships are highly organized in troops of baboons, in which dominant males have more access to food resources and mates than do subordinate males and all males often appear to have dominance over females. In hyena groups, the relationship is reversed, with males subordinate to females.

**dominant allele** the version of a gene (see ALLELE) whose effects are manifest in preference to another version of the same gene (the RECESSIVE ALLELE) when both are present in the same cell. Hence, the trait determined by a dominant allele (the **dominant trait**) is apparent even when the allele is carried on only one of a pair of HOMOLOGOUS chromosomes. The term **autosomal dominant** is used to describe this pattern; for example, Huntington's disease is an autosomal dominant disorder.

**dominant eye** the eye that is used preferentially or through which stimulation is preferentially effective.

**dominant hemisphere** formerly, the hemisphere regarded as having primary control of speech or manual preference (handedness). See HEMISPHERIC LATERALIZATION.

**dominant ideology thesis** in Marxist theory, the view that the ruling class consolidates its position in society by enforcing its ideology on subordinate classes, who come to accept it uncritically. See HEGEMONY.

**dominant wavelength** a single wavelength that when mixed with white will match a given hue.

**dominatrix** *n.* a woman who takes the dominant role in sexual activity, often associated with BONDAGE AND DISCIPLINE or SADOMASOCHISM.

**Donders's law** the principle that the position of the eyes in looking at an object is independent of their movement to that position. [Franciscus Cornelis DONDERS]

**Donders's method** a method of separating out hypothetical stages of mental processing by requiring participants to perform a set of REACTION TIME tasks in which each successive task differs from its predecessor by the addition of a single mental stage. The time required to complete a particular stage of processing can be inferred by subtracting from the reaction time in one task the reaction time in the preceding task. For example, Task A, in which a person responds to one signal by pressing one key and to another by pressing another key, adds a response-decision stage to Task B, in which a person responds to one signal by pressing a key and makes no response to the other signal. Also called **subtraction method**. See also CHRONOMETRIC ANALYSIS; CHOICE REACTION TIME. [Franciscus Cornelis DONDERS]

**donepezil** *n.* an acetylcholinesterase inhibitor used as a COGNITIVE ENHANCER in the management of mild to moderate dementia. By inhibiting the degradation of acetylcholine in the SYNAPTIC CLEFT, donepezil increases available levels of acetylcholine in the BASAL NUCLEUS OF MEYNERT, thought to be associated with improved memory and other aspects of cognitive functioning. U.S. trade name: **Aricept**.

**dong quai** an herbal agent derived from the plant *Angelica sinensis*, native to mountainous regions of China, Korea, and Japan, with extensive folk use in Asia, America, and western Europe for a variety of conditions but particularly as a remedy for AMENORRHEA, DYSMENORRHEA, and other menstrual irregularities. It also is reputed to ameliorate the physical and psychological symptoms associated with premenstrual syndrome and menopause. The limited research that has been done on dong quai is inconclusive, providing conflicting results on its effectiveness for any of these uses. Side effects include abdominal bloating, diarrhea and other gastrointestinal disturbances, fever, photosensitivity, and increased bleeding. Additionally, the plant contains numerous phytoestrogens (see ESTROGEN) and coumarin-like compounds and may therefore interact with pharmaceutical estrogenic compounds and prescribed blood thinners.

**Don Juan** a man who ruthlessly seduces women, concerned only with sexual conquest, after which he loses interest in them (**Don Juanism**). The original Don Juan was a legendary Spanish libertine, the subject of literature and Mozart's opera *Don Giovanni*. In contrast to men with a

CASANOVA COMPLEX, who adore women, a Don Juan may think of women as prey. See also SATYRIASIS.

**donor insemination** see ARTIFICIAL INSEMINATION.

**don't-hold functions** cognitive abilities, such as those involved in digit-symbol association (see DIGIT SYMBOL), that often decline in normative aging as observed on intellectual or cognitive tests (e.g., the WECHSLER ADULT INTELLIGENCE SCALE). They also show declines in conditions that affect cognitive functioning, such as traumatic brain injury, schizophrenia, or dementia. In these conditions, don't-hold functions are much more likely to be affected, or to be affected first, than are HOLD FUNCTIONS, which often rely on long-term knowledge such as vocabulary.

**door-in-the-face technique** a two-step procedure for enhancing COMPLIANCE in which an extreme initial request is presented immediately before a more moderate target request. Rejection of the initial request makes people more likely to accept the target request than would have been the case if the latter had been presented on its own. See also FOOT-IN-THE-DOOR TECHNIQUE; LOW-BALL TECHNIQUE; THAT'S-NOT-ALL TECHNIQUE.

**DOP** abbreviation for DERMO-OPTICAL PERCEPTION.

**dopa (DOPA)** *n.* 3,4-dihydroxyphenylalanine: an amino acid that is a precursor to DOPAMINE and other catecholamines. See also LEVODOPA.

**dopac (DOPAC)** *n.* dihydroxyphenylacetic acid: the major metabolite of DOPAMINE. It is analyzed as an index of dopamine activity in regions of the brain.

**dopa decarboxylase** the intermediate enzyme in the metabolism of CATECHOLAMINES from the dietary amino acid tyrosine. Tyrosine is transformed to L-DOPA by TYROSINE HYDROXYLASE. L-dopa is in turn converted to DOPAMINE by dopa decarboxylase, which also transforms a number of other aromatic amino acids. Dopamine is the final product in DOPAMINERGIC neurons; in ADRENERGIC neurons, dopamine is transformed by the enzyme dopamine beta-hydroxylase to NOREPINEPHRINE and subsequently—in specialized cells in the adrenal medulla and other sites, via the action of the enzyme phenylethanolamine N-methyltransferase—to EPINEPHRINE. Also called **aromatic L-amino acid decarboxylase**.

**dopamine (DA)** *n.* a CATECHOLAMINE neurotransmitter that has an important role in motor behavior and is implicated in numerous mental conditions and emotional states (see CATECHOLAMINE HYPOTHESIS; DOPAMINE HYPOTHESIS). It is found in DOPAMINERGIC neurons in the brain and elsewhere. It is synthesized from the dietary amino acid tyrosine, which in the first, rate-limiting stage of the reaction is converted to L-dopa (3,4-dihydroxyphenylalanine; see LEVODOPA) by the enzyme TYROSINE HYDROXYLASE. L-dopa is then transformed into dopamine by the enzyme DOPA DECARBOXYLASE. In nondopaminergic neurons and the adrenal medulla, dopamine is further metabolized to form norepinephrine and epinephrine, respectively. Destruction of the dopaminergic neurons in the SUBSTANTIA NIGRA is responsible for the symptoms of Parkinson's disease (e.g., rigidity, tremor). Blockade of the actions of dopamine in other brain regions accounts for the therapeutic activities of many antipsychotic drugs.

**dopamine hypothesis** the influential theory that schizophrenia is caused by an excess of dopamine in the brain, due either to an overproduction of dopamine or a deficiency of the enzyme needed to convert dopamine to



norepinephrine (adrenaline). There is some supporting pharmacological and biochemical evidence for this hypothesis, and it is still widely discussed and promoted, particularly in a revised form that postulates the involvement in schizophrenia of both an increased mesolimbic and a decreased prefrontal dopaminergic activity. See also GLUTAMATE HYPOTHESIS.

**dopamine receptor** a receptor molecule that is sensitive to dopamine and chemically related compounds. Dopamine receptors are located in parts of the nervous system, such as the BASAL GANGLIA, and also in blood vessels of the kidneys and mesentery, where binding of dopamine to its receptors results in widening (dilation) of the arteries. There are several subtypes of dopamine receptors, designated D1, D2, and so on. See DRD2 GENE.

**dopamine-receptor agonist** any drug or other agent that binds to and directly activates dopamine receptors, producing physiological effects that mimic those of the neurotransmitter dopamine. BROMOCRIPTINE is an example. Because PARKINSONISM is associated with a deficiency of dopamine in the brain, drugs that help to maintain adequate levels of dopamine are valuable in treating the disorder. Dopamine-receptor agonists are used to manage some of the drug-induced parkinsonian symptoms associated with use of antipsychotic drugs; they are also used in the treatment of Parkinson's disease, GALACTORRHEA, and prolactin-secreting tumors of the pituitary gland. Also called **dopaminergic agent**.

**dopamine-receptor antagonist** any substance that reduces the effects of the neurotransmitter dopamine by competitively binding to, and thus blocking, dopamine receptors. Classically, the clinical use of dopamine antagonists in mental health has been to modulate the symptoms of schizophrenia and other psychotic conditions. All conventional (typical or first-generation) ANTIPSYCHOTIC drugs are thought to act via antagonism or partial agonism of the postsynaptic dopamine D2 receptor. Most second-generation (atypical) antipsychotics possess some degree of antagonistic activity at that receptor. Other dopamine-receptor antagonists are used to prevent or treat nausea and vomiting.

**dopaminergic** *adj.* responding to, releasing, or otherwise involving dopamine. For example, a **dopaminergic neuron** is any neuron in the brain or other parts of the central nervous system for which dopamine serves as the principal neurotransmitter. Four major tracts (called **dopaminergic pathways**) of dopamine-containing neurons are classically described: the mesocortical pathway (see MESOCORTICAL SYSTEM), damage to which is associated with depression and attention-deficit/hyperactivity disorder; the MESOLIMBIC SYSTEM, in which excess dopamine activity is hypothesized to be associated with positive and negative symptoms of schizophrenia; the NIGROSTRIATAL TRACT, which is involved in motor functions and Parkinson's disease; and the TUBEROINFUNDIBULAR TRACT, a local circuit from the hypothalamus to the pituitary that is involved in the regulation of the pituitary hormone prolactin.

**dopaminergic agent** see DOPAMINE-RECEPTOR AGONIST.

**dopamine system** a richly defined and extensive neurochemical regulatory system in the mammalian brain. There are four identified dopamine subdivisions: tuberoinfundibular (hormonal regulation); nigrostriatal (motor function); mesolimbic (reinforcement of behavior); and mesocortical (higher order cognitive activities).

**Dopar** *n.* a trade name for LEVODOPA.

**Doppelganger phenomenon** the delusion that one has a double or twin, who looks and acts the same as oneself (German, "double walker"). See also AUTOSCOPY.

**Doppler effect** the apparent increase or decrease in wavelength or frequency observed when a source of electromagnetic radiation or sound approaches or recedes from the observer or listener, producing a change in hue or pitch. The **total Doppler effect** may result from motion of the source, observer, or medium (such as a sound wave). [Christian Andreas **Doppler** (1803–1853), Austrian mathematician]

**Dora case** one of Sigmund FREUD's earliest and most celebrated cases, reported in *Fragment of an Analysis of a Case of Hysteria* (1905). The study of this woman's multiple symptoms (headaches, loss of speech, suicidal thoughts, amnesic episodes) contributed to his theory of REPRESSION and the use of DREAM ANALYSIS as an analytic tool. It was also the first case in which he suggested the concept of TRANSFERENCE.

**Doral** *n.* a trade name for QUAZEPAM.

**Doriden** *n.* a trade name for GLUTETHIMIDE.

**dorsal** *adj.* denoting the hind region or the back surface of the body. In reference to the latter, this term sometimes is used interchangeably with POSTERIOR. Compare VENTRAL. —**dorsally** *adv.*

**dorsal anterior cingulate cortex** see ANTERIOR CINGULATE CORTEX.

**dorsal column** any of various tracts of sensory nerve fibers that run through the white matter of the spinal cord on its dorsal (back) side. See CUNEATE FASCICULUS; GRACILE FASCICULUS. See also LEMNISCAL SYSTEM.

**dorsal column system** a SOMATOSENSORY SYSTEM that transmits most touch information via the dorsal columns of the spinal cord to the brain.

**dorsal horn** either of the upper regions of the H-shaped pattern formed by the PERIAQUEDUCTAL GRAY in the spinal cord. The dorsal horns extend toward the dorsal roots and mainly serve sensory mechanisms. Also called **posterior horn**. Compare VENTRAL HORN.

**dorsal posterior cingulate cortex** see POSTERIOR CINGULATE CORTEX.

**dorsal root** any of the SPINAL ROOTS that convey sensory nerve fibers and enter the spinal cord dorsally on the back surface of each side. Also called **posterior root**; **sensory root**. Compare VENTRAL ROOT. See also BELL-MAGENDIE LAW.

**dorsal stream** a series of cortical maps that originate in the STRIATE CORTEX (primary visual cortex) of the occipital lobe and project forward and upward into the parietal lobe. Known informally as the "where" or "how" pathway, the dorsal stream is involved in processing object motion and location in space. Also called **action stream**. Compare VENTRAL STREAM.

**dorsal tegmental bundle** a bundle of nerve fibers from the LOCUS CERULEUS that, together with the central tegmental tract, forms the MEDIAL FOREBRAIN BUNDLE.

**dorsiflexion** *n.* flexing the ankle or wrist so that the foot or hand moves toward its upper (dorsal) surface.

**dorsolateral** *adj.* located both dorsally (toward the back) and laterally (toward the side). —**dorsolaterally** *adv.*

**dorsolateral column** a tract of motor fibers that descend in the dorsolateral part of the spinal cord, terminating on motor neurons. The CELL BODIES of these fibers lie in the MOTOR CORTEX, and the fibers descend on the same side until they cross over (decussate) at the PYRAMIDS of the medulla oblongata.

**dorsolateral prefrontal cortex (DLPFC)** a region of the brain located near the PREFRONTAL CORTEX (BRODMANN'S AREAS 9 and 46) in humans, involved in WORKING MEMORY, voluntary attentional control, and speech production. Damage to this region results in an inability to select task-relevant information and to freely shift attention based on external cues.

**dorsomedial nucleus (DMN)** a mass of tissue projecting from the THALAMUS to the FRONTAL LOBES. It is mainly implicated in memory function but is also associated with the emotional expressions of anxiety and fear. Also called **mediodorsal nucleus**.

**dorsoventral** *adj.* oriented or directed from the back (dorsal) region of the body to the front (ventral) region. Compare VENTRODORSAL. —**dorsoventrally** *adv.*

**dose–response relationship** a principle relating the potency of a drug to the efficacy of that drug in affecting a target symptom or organ system. **Potency** refers to the amount of a drug necessary to produce the desired effect; **efficacy** refers to the drug's ability to act at a target receptor or organ to produce the desired effect. Dose–response curves may be graded, suggesting a continuous relationship between dose and effect, or quantal, wherein the desired effect is an either–or phenomenon, such as prevention of arrhythmias. There is considerable variability among individuals in response to a given dose of a particular drug.

**dot figure** an arrangement of dots that is interpreted as forming a structure that changes shape over time, depending on which dots are seen as grouped together.

**dot plot** see SCATTERPLOT.

**dotting test** a pencil-and-paper motor test in which the participant makes as many dots as possible in a given time period, either randomly (**tapping test**) or within small circles (**aiming test**).

**double** *n.* in PSYCHODRAMA, an individual, one of the AUXILIARY EGOS, who speaks or acts out the presumed inner thoughts of the PROTAGONIST (i.e., the person presenting the problem to be explored). The technique is known as **doubling**.

**double alternation** in experimental research, a pattern in which two consecutive events of one kind alternate with two consecutive events of another kind. For example, in an OPERANT CONDITIONING experiment, two consecutive reinforced (R) trials may alternate with two consecutive nonreinforced (N) trials, yielding the pattern RRNNR–RNN . . . . See also SINGLE ALTERNATION.

**double approach–avoidance conflict** a complex conflict situation arising when a person is confronted with two goals or options that each have significant attractive and unattractive features. See also APPROACH–AVOIDANCE CONFLICT.

**double-approach conflict** see APPROACH–APPROACH CONFLICT.

**double-aspect theory** the position that mind and body are two attributes of a single substance (see MIND–BODY PROBLEM). This view is particularly associated with Baruch SPINOZA, who held that there is one (and only one) infinite substance, which he identified as God (see PANTHEISM).

**double-avoidance conflict** see AVOIDANCE–AVOIDANCE CONFLICT.

**double bind** a situation in which an individual receives contradictory messages from another person. For example, a parent may respond negatively when his or her child approaches or attempts to engage in affectionate behavior but then, when the child turns away or tries to leave, reaches out to encourage the child to return. Double-binding communication was once considered a causative factor in schizophrenia. [proposed by British anthropologist Gregory Bateson (1904–1980)]

**double blind** see BLIND.

**double bootstrapping** a procedure in which samples are randomly drawn, with replacement, from an initial data set and their PARAMETERS and STANDARD ERRORS are estimated and averaged across the set of samples. This is then followed by another random sampling of the data, again with replacement, after which parameter estimates and standard errors are obtained a second time. Double bootstrapping usually is less biased than using a single set of BOOTSTRAPPING samples.

**double consciousness** **1.** a condition in which two distinct, unrelated mental states coexist within the same person. This may occur, for example, in an individual with a DISSOCIATIVE IDENTITY DISORDER. Also called **dual consciousness**. **2.** a condition described by U.S. educator, scholar, and activist W. E. B. Du Bois (1868–1963) as one in which African Americans experience themselves through their own consciousness as well as through their awareness of how they are perceived by White Americans.

**double deception** in DECEPTION RESEARCH, an apparent debriefing after the experiment, which is itself a further ploy.

**double depression** a condition in which a person with DYSTHYMIC DISORDER—chronically low or irritable mood—experiences a concurrent MAJOR DEPRESSIVE EPISODE. Symptoms commonly include hopelessness, low internal LOCUS OF CONTROL, low self-esteem, difficulty sleeping, and ANHEDONIA. Severe hopelessness in particular has been implicated as the key distinguishing feature of double depression. Other distinctions (e.g., from dysthymic disorder alone, MINOR DEPRESSIVE DISORDER, SINGLE-EPISODE DEPRESSION), however, are more controversial among researchers and practitioners. Some claim that there are few if any legitimate clinical differences between double depression and other depressive conditions, whereas others argue that individuals with double depression have more severe symptoms, greater comorbidity, greater psychopathology in first-degree relatives, and a poorer prognosis; are less responsive to psychotherapy and other treatment; and otherwise differ in psychosocial functioning, family history, and degree of impairment.

**double dissociation** a research process for demonstrating the action of two separable psychological or biological systems, such as differentiating between types of memory or the function of brain areas. One experimental variable is found to affect one of the systems, whereas a second variable affects the other. The differentiating varia-

bles may be task related, pharmacological, neurological, or individual differences. For example, double dissociation has been used to separate DECLARATIVE MEMORY from PROCEDURAL LEARNING. [developed by Hans-Lukas TEUBER]

**double entendre** a word, phrase, or sentence that could be interpreted in two ways, especially when one of the possible meanings is a sexual one. See also AMBIGUITY; PUN. [French: “double understanding” or “double meaning”]

**double helix** see DNA.

**double image** **1.** a duplicate retinal image that occurs as a result of eye defects. **2.** a duplicate image of a distant object when fixating on near objects or of a near object when fixating on distant objects. See also DIPLOPIA; DOUBLE VISION.

**double insanity** see FOLIE À DEUX.

**double personality** see DUAL PERSONALITY.

**double predestination** see PREDESTINATION.

**double-simultaneous stimulation** a test used in studies of parietal lobe lesions in which two sensory stimuli (typically one on each side of the body) are presented to an individual simultaneously.

**double-simultaneous tactile sensation** the ability of a person to perceive two tactile sensations in different areas at the same time, for example, when touched simultaneously on the left and right hands or the right hand and left side of the face. An inability to perceive one or both of the simultaneous tactile sensations is referred to as **tactile extinction**. See also FACE-HAND TEST.

**double standard** the hypocritical belief that a code of behavior is permissible for one group or individual but not for another. For example, a double standard is held by the man who believes that free sexual expression is acceptable only for males, thus insisting on his daughter's virginity while encouraging or ignoring his son's philandering.

**double vision** the perception of a single object as a separate image by each eye. Double vision is referred to medically as DIPLOPIA.

**double-Y condition** see XYY SYNDROME.

**doubling** *n.* see DOUBLE.

**doubt** *n.* **1.** lack of confidence or an uncertainty about something or someone, including the self. Doubt may center on everyday concerns (Can I accomplish this task?), issues of daily living (Can I change this ingrained habit?), or the very meaning of life itself (see EXISTENTIAL ANXIETY; EXISTENTIAL CRISIS). It is a perception, typically with a strong affective component, that is frequently a focus during psychotherapeutic intervention. **2.** in ERIKSON'S EIGHT STAGES OF PSYCHOSOCIAL DEVELOPMENT, see AUTONOMY VERSUS SHAME AND DOUBT.

**doubting obsession** extreme feelings of uncertainty about even the most obvious matters. Doubting obsession is commonly associated with OBSSIVE-COMPULSIVE DISORDER and often results in checking rituals (e.g., repeatedly looking to see if the door is locked) as a means of reducing doubt-related anxiety. It was originally named **doubting mania** by French psychiatrist Jean-Pierre Falret (1794–1870).

**doula** *n.* a professional trained in giving social support to families before, during, and after the birth of a child—that

is, during pregnancy, labor, and birth and at home during the first few days or weeks after birth. Unlike a MIDWIFE, a doula is not a medical professional and acts only as a labor coach during the actual delivery.

**downer** *n.* slang for a SEDATIVE, HYPNOTIC, AND ANXIOLYTIC DRUG.

**down-regulation** *n.* a decrease in the number of RECEPTOR molecules in a given area. Compare UP-REGULATION.

**Down syndrome** a chromosomal disorder characterized by an extra chromosome 21 and manifested by a round flat face and eyes that seem to slant (the disorder was formerly known as **mongolism**). Brain size and weight are below average; affected individuals usually have mild to severe intellectual disability and have been characterized as having docile, agreeable dispositions. Muscular movements tend to be slow, clumsy, and uncoordinated. In many cases, growth is stunted, the tongue is thick, and the fingers are stubby. Affected individuals may have heart defects and respiratory insufficiencies or anomalies that are often corrected during infancy by surgery. However, lifespan is reduced compared with that in the general population, and affected individuals typically show early onset of Alzheimer's disease. Down syndrome is one of the most common physiological causes of intellectual disability. Also called **Langdon Down's disease**; **trisomy 21**. See also AUTOSOMAL TRISOMY OF GROUP G. [described in 1866 by John Langdon Haydon **Down** (1828–1896), British physician]

**down through** a technique for testing CLAIRVOYANCE in which the participant is asked to state the order of a stacked deck of ZENER CARDS from top to bottom. Compare UP THROUGH. See also BASIC TECHNIQUE; SCREEN TOUCH MATCHING.

**downward communication** the transmission of information from individuals who occupy relatively high-status positions within a group or organization to those who occupy subordinate positions. Such communications tend to be informational and directive, whereas UPWARD COMMUNICATIONS request information, provide factual information, or express grievances. Communication tends to flow downward in hierarchically organized groups. See CHANNELS OF COMMUNICATION; COMMUNICATION NETWORK.

**downward drift hypothesis** see DRIFT HYPOTHESIS.

**downward mobility** the movement of a person or group to a lower social class. See also SOCIAL MOBILITY. Compare UPWARD MOBILITY.

**downward social comparison** see SOCIAL COMPARISON THEORY.

**dowry** *n.* in some cultures, money or assets bestowed on the groom by the bride's family on marriage. Compare BRIDE PRICE.

**dowsing** *n.* a purported technique for finding sites to dig for water or minerals. A forked stick (divining rod) is held by a person in such a way that a downward movement of the stick indicates a likely site. See also RHABDOMANCY. —**dowse** *vb.* —**dowser** *n.*

**doxepin** *n.* a TRICYCLIC ANTIDEPRESSANT, among the most sedating and most anticholinergic of these agents. Although it currently has little use as an antidepressant, it may be used in relatively low doses as a hypnotic, for treatment of insomnia, or in the management of neuromuscular or musculoskeletal pain. It is also available as a topical

treatment for management of dermatologic conditions. U.S. trade names: **Adapin**; **Silenor**; **Sinequan**.

**doxylamine** *n.* an ethanolamine ANTIHISTAMINE with significant sedative properties that is included in numerous nonprescription sleep aids. Like all antihistamines, it may lose its efficacy with repeated use. Overdose is characterized by symptoms of anticholinergic toxicity, including raised temperature, a rapid heart rate, and delirium.

**dPCC** abbreviation for dorsal POSTERIOR CINGULATE CORTEX.

**DPE** abbreviation for DELIBERATE PSYCHOLOGICAL EDUCATION.

***d* prime** (symbol: *d'*) a measure of an individual's ability to detect signals; more specifically, a measure of sensitivity or discriminability derived from SIGNAL DETECTION THEORY that is unaffected by response biases. It is the difference (in standard deviation units) between the means of the NOISE and signal + noise distributions. The assumptions underlying the validity of *d'* as a bias free measure are that the probability distributions upon which decisions are based are Gaussian (normal) and have equal variances. If this is true, then *d'* completely describes the RECEIVER-OPERATING CHARACTERISTIC CURVE. In practice, *d'* has proved to be sufficiently bias free to be the "best" measure of psychophysical performance. It is essentially a STANDARDIZED SCORE and is computed as the difference between the (Gaussian) standard scores for the FALSE-ALARM rate and the HIT RATE. A value of *d'* = 3 is close to perfect performance; a value of *d'* = 0 is chance ("guessing") performance.

**DQ** abbreviation for DEVELOPMENTAL QUOTIENT.

**DRA** abbreviation for DIFFERENTIAL REINFORCEMENT OF ALTERNATIVE BEHAVIOR.

**Dramamine** *n.* a trade name for DIMENHYDRINATE.

**drama therapy** in GROUP THERAPY, the use of theater techniques to gain self-awareness and increase self-expression.

**dramatics** *n.* **1.** the art or practice of stagecraft and theatrical performance. **2.** the use of drama as a rehabilitation technique, using published or original scripts with patients as performers. See also PSYCHODRAMA. **3.** see CREATIVE DRAMATICS.

**dramatization** *n.* **1.** ATTENTION-GETTING behavior, such as exaggerating the symptoms of an illness to make it appear more important than the occurrence of the same illness in another person. **2.** in psychoanalytic theory, the expression of repressed wishes or impulses in dreams. —**dramatize** *vb.*

**drawing disability** see CONSTRUCTIONAL APRAXIA.

**DRC** abbreviation for DAMAGE-RISK CRITERIA.

**DRD2 gene** a gene that codes for the DOPAMINE RECEPTOR D2 subtype. Variants of this gene have been associated especially with craving-based disorders such as substance dependence (e.g., alcoholism), obesity, and pathological gambling. Variants have also been implicated in schizophrenia, both in its pathophysiology and in the treatment response of those with the disorder to antipsychotic medications. In addition, the gene recently has been linked to an expression of "harsh parenting" by human mothers in response to adverse economic conditions, a finding that suggests the gene may play a significant role in translating environmental responses into biochemical brain events.

**dread** *n.* **1.** intense fear or fearful anticipation. **2.** in psychoanalysis, anxiety elicited by a specific threat, such as going out on a dark night, as contrasted with anxiety that does not have a specific object. See also EXISTENTIAL DREAD.

**dream** *n.* a physiologically and psychologically conscious state that occurs during sleep and is often characterized by a rich array of endogenous sensory, motor, emotional, and other experiences. Dreams occur most often, but by no means exclusively, during periods of REM SLEEP. Those that occur during NREM SLEEP are characterized primarily by thoughts and emotions, whereas REM dreams are characterized primarily by (a) visual imagery along with a sense of motion in space; (b) intense emotion, especially fear, elation, or anger; (c) belief that dream characters, events, and situations are real; and (d) sudden discontinuities in characters, situations, and plot elements. Because it is generally difficult to recall such dreams in detail more than a dozen seconds after waking, REM dream reports are optimally obtained immediately after waking an individual in whom rapid eye movements and electroencephalographic arousal have been observed. Individuals awakened during NREM sleep report fewer dreams.

Theories about the nature, meaning, and function of dreams are diverse. The Greek physician Hippocrates (c. 460–c. 377 BCE), for example, suggested that dreams provide early evidence of disease. Sigmund FREUD viewed dreams as symbolic condensations of conflicting impulses that are rejected from waking consciousness to avoid emotional distress. Carl JUNG proposed a problem-solving function for dreams, in which archetypal symbols convey prototypical life conflicts and their possible resolutions. Alfred ADLER advanced the view that inferiority conflicts are played out in dreams. The discovery in the early 1950s of REM sleep, as well as findings in the 1960s about NREM sleep, initiated the scientific study of dreaming as a neurocognitive process, and various hypotheses have since emerged about that process (e.g., ACTIVATION–SYNTHESIS HYPOTHESIS; AIM MODEL).

The physiology of REM dreaming is routinely observable in many nonhuman animals as well, following the same circadian timing as in humans. It is therefore considered to be a product of evolution, though additional function may accrete in humans. See also LUCID DREAM; NIGHTMARE. —**dream** *vb.* —**dreamlike** *adj.* —**dreamy** *adj.*

**dream analysis** a technique, originally used in psychoanalysis but now also used in some other psychotherapies, in which the content of dreams is interpreted to reveal underlying motivations or symbolic meanings and representations (i.e., LATENT CONTENT). Dream analysis is aided by such techniques as FREE ASSOCIATION. Also called **dream interpretation**.

**dream anxiety disorder** see NIGHTMARE DISORDER.

**dream censorship** in psychoanalytic theory, the disguising in dreams of unconscious wishes that would be disturbing to the EGO if allowed conscious expression. According to Sigmund FREUD, the thoroughness of dream disguise varies directly with the strictness of the censorship. See CENSOR.

**dream content** the images, ideas, and impulses expressed in a dream. See LATENT CONTENT; MANIFEST CONTENT.

**dream deprivation** a research technique designed to study the effects of reduced REM SLEEP on REM dreaming. After being routinely awakened during this stage of sleep,

participants tend to compensate with longer periods of REM sleep on subsequent nights, a finding that may point to homeostatic compensation for REM-dream deprivation. The technique is a specifically focused subtype of REM-SLEEP DEPRIVATION.

**dream ego** in the ANALYTIC PSYCHOLOGY of Carl JUNG, a fragment of the conscious EGO that is active during the dream state.

**dream incorporation** the integration of a stimulus, such as a muscle cramp or the sound of a telephone ringing, into the content of a dream. Such a dream is referred to as an **incorporation dream**.

**dream interpretation** see DREAM ANALYSIS.

**dream stimulus** any of various stimuli that may initiate dream content, such as external stimulation, internal sensory stimulation, mental images, feelings, or memories.

**dream suggestion** a specialized hypnotic technique in which the client is instructed to dream about a problem or its source, either during the hypnotic state or posthypnotically, during natural sleep. The technique is sometimes used as an aid in HYPNOTHERAPY.

**dream-work** *n.* in psychoanalytic theory, the transformation of the LATENT CONTENT of a dream into the MANIFEST CONTENT experienced by the dreamer. This transformation is effected by such processes as CONDENSATION, SYMBOLIZATION, DISPLACEMENT, and DRAMATIZATION.

**dreamy state** a brief altered state of consciousness similar to a dream, during which the individual experiences visual, olfactory, or auditory hallucinations.

**dressing aid** an ASSISTIVE TECHNOLOGY device that helps people with disabilities to dress independently. Dressing aids include buttonhooks, specially designed fasteners (e.g., Velcro strips), grabbers, and other devices.

**dressing apraxia** an inability to dress oneself normally, sometimes associated with brain damage. For example, an individual may put on clothing so that it covers only the right side of the body, neglecting the left side.

**DRGs** abbreviation for DIAGNOSIS-RELATED GROUPS.

**DRH** abbreviation for DIFFERENTIAL REINFORCEMENT OF HIGH RATE.

**drift** *n.* **1.** a reduction in variation in genetic traits that can occur when sampling from continually smaller groups, such that some traits ultimately become excluded from possibility. **2.** a reduction in the reliability of technical instruments or in the accuracy of observers over time. See INSTRUMENT DRIFT; OBSERVER DRIFT.

**drift hypothesis** a sociological concept purporting to explain the higher incidence of schizophrenia in urban poverty centers, suggesting that during the preclinical phase people tend to drift into poverty and social isolation. Also called **downward drift hypothesis**. See also SOCIO-GENIC.

**drifting attention** a disorder marked by a tendency to maintain attention for a short period, when alerted, but then to drift back to a somnolent state. It is caused by disturbance of the subcortical ALERTING MECHANISMS, which usually indicates pathological involvement of the midbrain or thalamic portion of the RETICULAR ACTIVATING SYSTEM. See also WANDERING ATTENTION.

**drill** *n.* the methodical repetition of a physical or mental

response or response sequence for the purpose of learning. Drill may be necessary when the material to be learned does not yet represent to the individual an integrated or internally coherent entity. For example, an individual learning a foreign language may need to use drill. Drill is also necessary to produce AUTOMATIZATION of a behavior or skill.

**drinking aid** an ASSISTIVE TECHNOLOGY device that permits an individual with a disability to ingest liquids without the help of another person. Drinking aids include terry-cloth tumbler jackets, wooden or metal glass holders, various built-in and flexible sipping straws, coasters with suction-cup attachments, and cups designed for drinking while lying down.

**drinking episode** a continuous period of drinking, often but not always short-lived.

**drinkometer** *n.* a device used in nonhuman animal experiments to record the number of times an animal licks a drinking tube. Also called **lickometer**.

**drive** *n.* **1.** a generalized state of READINESS precipitating or motivating an activity or course of action. Drive is hypothetical in nature, usually created by deprivation of a needed substance (e.g., food), the presence of negative stimuli (e.g., pain, cold), or the occurrence of negative events. Drive is said to be necessary for stimuli or events to serve as REINFORCERS. **2.** in the classical psychoanalytic theory of Sigmund FREUD, a concept used to understand the relationship between the psyche and the soma (mind and body); drive is conceived as having a somatic source but creating a psychic effect. Freud identified two separate drives as emerging from somatic sources: LIBIDO and AGGRESSION. See also MOTIVATION; OBJECT RELATIONS. **3.** see CARVER AND WHITE'S BIS/BAS SCALES.

**drive discrimination** the ability of an organism to differentiate between various psychological, emotional, and physiological needs and to direct responses accordingly, such as drinking when thirsty or eating when hungry. [defined by Edward C. TOLMAN]

**drive displacement** the activation of one drive when another drive is thwarted; for example, eating chocolate when one is prohibited from smoking a cigarette.

**drive-induction theory** the theory that REINFORCEMENT is a function of the degree of drive induced by a given reinforcer. According to this theory, it is the arousal or excitement produced by consummating a reinforcer (e.g., eating, drinking, mating) that produces reinforcement of behavior, not the reduction of the drive state that the reinforcer may produce. Drive-induction theory was proposed as an alternative to DRIVE-REDUCTION THEORY. Also called **consummatory response theory of reinforcement**. [introduced by U.S. learning theorist Frederick Sheffield (1914–1994)]

**drive-reduction theory** a theory of learning in which the goal of motivated behavior is a reduction of a drive state. It is assumed that all motivated behavior arises from drives, stemming from a disruption in homeostasis, and that responses that lead to reduction of those drives tend to be reinforced or strengthened. See also HULL'S MATHEMATICO-DEDUCTIVE THEORY OF LEARNING. Compare DRIVE-INDUCTION THEORY. [proposed by Clark L. HULL]

**driver training** in rehabilitation, the training of individuals with disabilities to operate an automobile equipped with ASSISTIVE TECHNOLOGY devices, such as customized or

adapted controls. For example, a previously trained driver may have to learn to maneuver a vehicle with hand-operated accelerator and brakes or a gearshift extension for left-hand rather than right-hand use.

**drive state** see DRIVE.

**drive stimulus** in Clark L. HULL's theories of learning, any of the hypothetical nerve impulses produced by a drive state. Behaviors that reduce these impulses are reinforced or strengthened. See DRIVE-REDUCTION THEORY; HULL'S MATHEMATICO-DEDUCTIVE THEORY OF LEARNING.

**drive strength** the intensity of a drive, particularly as quantified in HULL'S MATHEMATICO-DEDUCTIVE THEORY OF LEARNING as the number of hours of deprivation of a need.

**drive theory** see CLASSICAL PSYCHOANALYSIS.

**DRL** abbreviation for DIFFERENTIAL REINFORCEMENT OF LOW RATE.

**DRO** abbreviation for DIFFERENTIAL REINFORCEMENT OF OTHER BEHAVIOR.

**dromomania** *n.* an abnormal drive or desire to travel that involves spending beyond one's means and sacrificing job, partner, or security in the lust for new experiences. People with dromomania not only feel more alive when traveling but also start planning their next trip as soon as they arrive home. Fantasies about travel occupy many of their waking thoughts and some of their dreams. The condition was formerly referred to as **vagabond neurosis**.

**dronabinol** *n.* see TETRAHYDROCANNABINOL.

**drone** *n.* see MEPHEDRONE.

**droperidol** *n.* an antipsychotic agent of the BUTYROPHENONE class that is used in premedication for surgery and to maintain surgical anesthesia. It is occasionally used for the emergency treatment of acute psychotic agitation. Because of its extremely rapid onset of action, it has few other mental health applications. U.S. trade name: **Inapsine**.

**drop-in center** a facility, often associated with a substance abuse program, where professional support and advice can be obtained without an advance appointment. A drop-in center also serves as a gathering place providing social, educational, and recreational activities.

**dropout** *n.* **1.** a student who leaves school before graduating. **2.** a patient or client who terminates treatment before it is completed.

**Drosophila** *n.* a genus of small fruit flies consisting of about a thousand species commonly known as vinegar flies. The species *Drosophila melanogaster* is used extensively in genetic investigations, including studies of the genetic components of behavior; for example, U.S. behavioral geneticist Jerry Hirsch (1922–2008) studied the relationship between variations in certain chromosomes in *D. melanogaster* and differences in GEOTAXIS.

**drowsiness** *n.* a state of low alertness characterized by lowered frontal lobe (executive) functioning, difficulty in exerting mental effort, and an involuntary tendency for rapid skeletal muscle inhibition to occur. Electroencephalography shows intermittent sleep brain waves, including DELTA WAVES. See also HYPERSOMNIA; SOMNOLENCE.

**DRS 1.** abbreviation for DEMENTIA RATING SCALE. **2.** abbreviation for DISABILITY RATING SCALE.

**drug** *n.* any substance, other than food, that influences motor, sensory, cognitive, or other bodily processes. Drugs

generally are administered for experimental, diagnostic, or treatment purposes but also tend to be used recreationally to achieve particular effects.

**drug abuse** see SUBSTANCE ABUSE.

**Drug Abuse Resistance Education** see D.A.R.E.

**Drug Abuse Screening Test (DAST)** a 28-item, yes–no questionnaire used to screen for drug abuse or dependence. Its questions are based on those of the MICHIGAN ALCOHOLISM SCREENING TEST.

**drug abuse treatment** see SUBSTANCE ABUSE TREATMENT.

**drug addiction** see ADDICTION; SUBSTANCE DEPENDENCE.

**drug court** an alternative to the usual legal processing and penalties for nonviolent drug offenders. Drug court focuses on treatment and rehabilitation rather than punishment.

**drug culture** the activities and way of life of people who habitually use one or more kinds of drugs of abuse, usually illicit drugs such as hashish, cocaine, heroin, LSD, or other substances that produce altered states of consciousness. Also called **drug subculture**.

**drug dealer** a person who sells illegal substances or sells legal substances in an illegal manner (e.g., without a license). Also called a **drug pusher**.

**drug dependence** see SUBSTANCE DEPENDENCE.

**drug discrimination** the ability of an organism to distinguish between the internal states produced by different drugs (or by a particular drug and saline). In a typical experimental procedure, a nonhuman animal is injected with one drug, and a certain response (e.g., pressing the left-hand lever in a two-lever apparatus) is reinforced. When injected with a different drug (or with saline), a different response (e.g., pressing the right-hand lever) is reinforced. Thus, the animal must discriminate between the internal cues produced by the drugs in order to make the correct response.

**drug education** the process of informing individuals or groups about the effects of various chemical agents on the human body, usually with a special emphasis on the effects of mind-altering substances.

**drug holiday** discontinuance of a therapeutic drug for a limited period in order to control dosage and side effects and to evaluate the patient's response with and without it. At one time commonly recommended for children taking METHYLPHENIDATE, drug holidays on weekends or school vacations were thought to prevent growth suppression that was tentatively associated with this agent. Drug holidays are infrequent in modern clinical practice.

**drug-induced amnesia** see AMNESIA.

**drug-induced lactation** see GALACTORRHEA.

**drug-induced parkinsonism** see PARKINSONISM.

**drug-induced psychosis** a psychotic state resulting from the use or the abuse of illicit or therapeutic substances. Well-described drug-induced psychoses may result from excessive or chronic use of amphetamines, cocaine, or other stimulants; cannabis; LSD; PCP (phencyclidine), or other hallucinogens; and other illicit substances. A variety of medications may produce psychotic symptoms, including anticholinergic drugs at therapeutic doses in suscepti-

ble individuals. See also SUBSTANCE-INDUCED PSYCHOTIC DISORDER.

**drug interactions** the effects of administering two or more drugs concurrently, which alters the pharmacological action of one or more of them. Pharmacokinetic interactions alter the absorption, distribution, metabolism, and excretion of the drugs; they may induce or inhibit the elimination of these drugs, leading to unexpected increases or decreases in their concentrations in the body. Pharmacodynamic interactions affect the drugs' activities at target organs or receptor sites; they may be synergistic, enhancing the effectiveness of a drug at a target receptor or organ (see DRUG SYNERGISM), or antagonistic, in which the presence of one drug reduces the effectiveness of another (see ANTAGONISM).

**drug interdiction** the interception and confiscation, by police or other law enforcement officials, of illegal drugs while they are being transported.

**drug metabolism** the process by which a drug is transformed in the body (in the liver and other organs), usually from a more lipid-soluble form, which makes it more readily absorbed into the body, to a more water-soluble form, which facilitates its excretion. Two phases of drug metabolism are recognized. In **Phase I metabolism**, the drug is oxidized, reduced, or hydrolyzed—that is, oxygen is added, oxygen is removed, or hydrogen is added, respectively (see CYTOCHROME P450). In **Phase II metabolism**, functional groups (specific clusters of atoms) are added to drug molecules (e.g., by GLUCURONIDATION).

**drug rehabilitation** a combination of interventions designed to enable a person with substance dependence to achieve and maintain abstinence. Also called **drug rehab**; **drug treatment**.

**drug screening instrument** a brief interview, such as CAGE, or a brief self-report instrument, such as the MICHIGAN ALCOHOLISM SCREENING TEST (MAST) or DRUG ABUSE SCREENING TEST (DAST), that is designed to identify individuals who should be assessed thoroughly for the possibility of substance abuse.

**drug-seeking behavior** an attempt to attain a drug or drugs that a person abuses or on which he or she is dependent. Such behavior may include DOCTOR SHOPPING, forging prescriptions, and trading sex for drugs.

**drug self-administration** see SELF-ADMINISTRATION.

**drug subculture** see DRUG CULTURE.

**drug synergism** an enhancement of efficacy occurring when two or more drugs are administered concurrently, so that their combined pharmacological or clinical effects are greater than those occurring when the drugs are administered individually. Drug synergism can be metabolic, when the administration of one agent interferes with the metabolism of another, or it can be pharmacological, when the administration of two or more agents results in enhanced receptor binding or other activity at target sites. The enhanced antimicrobial activity of two antibiotics administered together is an example of positive synergism; negative synergism can be seen when the administration of a nontoxic agent with a toxic drug worsens the toxicity of the latter.

**drug therapy** see PHARMACOTHERAPY.

**drug tolerance** see TOLERANCE.

**drug trafficking** see TRAFFICKING.

**drug withdrawal** see SUBSTANCE WITHDRAWAL.

**dry eyes** see XEROPHTHALMIA.

**DS** abbreviation for DUAL SCALING.

**DSH** abbreviation for DELIBERATE SELF-HARM.

**DSM-IV-TR** the text revision of the fourth edition of the *Diagnostic and Statistical Manual of Mental Disorders*, prepared by the DSM-IV Task Force of the American Psychiatric Association and published in 2000. The classification presents descriptions of diagnostic categories without favoring any particular theory of etiology. It is largely modeled on the INTERNATIONAL CLASSIFICATION OF DISEASES (9th edition, 1978), developed by the World Health Organization and modified for use in the United States (ICD-9-CM), but it contains greater detail as well as a method of coding on different axes (see MULTIAXIAL CLASSIFICATION). Previous editions were published in 1952 (*DSM-I*), 1968 (*DSM-II*), 1980 (*DSM-III*, a revision of which, *DSM-III-R*, was published in 1987), and 1994 (*DSM-IV*). Over that period, the number of identified disorders increased from about 100 to more than 300.

**DSM-5** the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders*, prepared by the DSM-5 Task Force of the American Psychiatric Association and published in 2013. Changes from the DSM-IV-TR include use of a nonaxial approach to diagnosis with separate notations for psychosocial and contextual factors and disability; organization of diagnoses according to the period (i.e., childhood, adolescence, adulthood, later life) during which they most frequently first manifest; clustering of disorders within chapters according to internalizing factors (e.g., anxiety, depression) and externalizing factors (e.g., impulsive, disruptive conduct); replacement of the NOT OTHERWISE SPECIFIED label with clinician choice of *other specified disorder* or *unspecified disorder*; replacement of the GLOBAL ASSESSMENT OF FUNCTIONING SCALE with the World Health Organization's Disability Assessment Schedule for further study; and consolidation of separate diagnostic areas into spectra (e.g., AUTISM SPECTRUM DISORDER).

The structure and content of the DSM-5 was coordinated with that of the forthcoming 11th revision of the INTERNATIONAL CLASSIFICATION OF DISEASES (ICD), although the DSM-5 retains diagnostic codes from both the ICD-9-Clinical Modification and ICD-10-CM. In addition, the Roman numerals used in previous DSM editions were replaced with an Arabic numeral to allow clearer labeling of future updates (e.g., DSM-5.1, DSM-5.2).

Several diagnostic changes in the DSM-5 have met with controversy. Its consolidation of ASPERGER'S DISORDER into autism spectrum disorder, for example, has raised concerns that those who would meet prior criteria for Asperger's will now instead be diagnosed as having ASD, which many consider a more serious disorder, or not having either disorder, thereby losing eligibility for certain medical and educational services. Moreover, a criticism of its immediate predecessor has been lodged against the DSM-5 as well—that it retains some diagnostic criteria that pathologize normal behaviors (e.g., temper tantrums, overeating) and emotions (e.g., grief, worrying).

**DST** abbreviation for DEXAMETHASONE SUPPRESSION TEST.

**DTD** abbreviation for DEVELOPMENTAL TRAUMA DISORDER.

**DTI** abbreviation for DIFFUSION TENSOR IMAGING.

**DTPS** abbreviation for DIFFUSE THALAMIC PROJECTION SYSTEM.

**D trisomy syndrome** see TRISOMY 13.

**DTs** abbreviation for DELIRIUM TREMENS.

**dual-action antidepressant** see MULTIFUNCTIONAL ANTIDEPRESSANT.

**dual-aspect physicalism** a philosophical answer to the MIND–BODY PROBLEM claiming that there are two aspects of reality—physical and experiential—but that the more fundamental aspect is physical.

**dual-attitude model** the hypothesis that a new attitude toward an object does not replace a former one but rather overrides it, such that two contradictory attitudes about the same object are then held simultaneously by the same individual. One attitude is held explicitly and the other implicitly. The attitude that people endorse depends on whether they have the cognitive capacity to retrieve the explicit attitude (e.g., egalitarianism) and whether this overrides their original implicit view (e.g., prejudice toward certain racial groups). [proposed in 2000 by U.S. psychologists Timothy D. Wilson and Samuel Lindsey and U.S. behavioral oncologist Tonya Y. Schooler]

**dual careers** the situation in which both spouses or partners in a family or other domestic unit are committed to their careers, rather than one being regarded as the main breadwinner and the other as the main homemaker.

**dual coding theory 1.** the theory that linguistic input can be represented in memory in both verbal and visual formats. CONCRETE WORDS that readily call to mind a picture, such as *table* or *horse*, are remembered better than ABSTRACT WORDS, such as *honesty* or *conscience*, which do not readily call to mind a picture, because the concrete words are stored in two codes rather than one. [proposed by Canadian cognitive psychologist Allan U. Paivio (1925– )]  
**2.** the theory that linguistic knowledge in bilingual people is stored in two distinct codes. See COORDINATE BILINGUAL.  
**3.** a theory for explaining the relationship between IMAGERY and performance that suggests there are two ways of gaining information about a skill: the motor channel for encoding human actions and the verbal channel for encoding speech. Using auditory imagery linked with visual imagery is suggested to be the most effective in PERFORMANCE ENHANCEMENT.

**dual consciousness** see DOUBLE CONSCIOUSNESS.

**dual diagnosis** the identification of two distinct disorders that are present in the same person at the same time, for example, the coexistence of depression and a substance dependence disorder (e.g., alcohol or drug dependence). See also COMORBIDITY.

**dual encoding** see DUAL REPRESENTATION.

**dual instinct theory** in classical psychoanalytic theory, the view that human life is governed by two antagonistic forces: the LIFE INSTINCT, or EROS, and the DEATH INSTINCT, or THANATOS. This was a late theoretical formulation by Sigmund FREUD, who held that “the interaction of the two basic instincts with or against each other gives rise to the whole variegation of the phenomena of life” (*Beyond the Pleasure Principle*, 1920).

**dualism** *n.* the position that reality consists of two separate substances, defined by René DESCARTES as thinking substance (mind) and extended substance (matter). In the context of the MIND–BODY PROBLEM, dualism is the position that the mind and the body constitute two separate realms or substances. Dualistic positions raise the question

of how mind and body interact in thought and behavior. Compare MONISM. See also CARTESIAN DUALISM. —**dualist** *adj.*, *n.* —**dualistic** *adj.*

**duality of language** the concept that language can be represented at two levels: (a) PHONOLOGY, which is the sound that a speaker produces; and (b) meaning, which is a function of SYNTAX and SEMANTICS.

**dual memory theory** see DUAL-STORE MODEL OF MEMORY.

**dual orientation** see DUAL REPRESENTATION.

**dual personality** a personality that is divided into two relatively independent and generally contrasting systems. See DISSOCIATIVE IDENTITY DISORDER.

**dual process model of persuasion** any of various persuasion theories postulating that attitude change can occur as a result of strategies for processing attitude-relevant information that involve either a very high degree of effort or very little effort. The most prominent theories of this type are the ELABORATION-LIKELIHOOD MODEL and the HEURISTIC-SYSTEMATIC MODEL.

**dual process theory 1.** the theory that the response made by an individual to a stimulus that permits behavioral control involves two stages: (a) a decision as to whether or not to respond and (b) a choice between alternative responses. **2.** in theories of memory, the operation of two different cognitive processes (e.g., recollection and familiarity) in recognition memory. **3.** a decision-making theory stating that judgment and reasoning involve two separate processes: intuitive decision making and rational decision making. See SYSTEM 1. [proposed by Daniel KAHNEMAN and Amos TVERSKY]

**dual process theory of color vision** see OPPONENT PROCESS THEORY OF COLOR VISION.

**dual relationship** in a therapeutic context, a situation in which a psychologist has more than one type of relationship with a client: The psychologist (a) is concurrently in both a professional role and another role with the same client, (b) is concurrently in a relationship with a person closely associated with or related to the client, or (c) promises to enter into another relationship in the future with the client or a person closely associated with or related to the client. Psychologists are ethically expected to refrain from entering into a dual relationship because it might impair their objectivity, competence, or effectiveness in performing their functions as a psychologist or exploit or harm the client with whom the professional relationship exists. Also called **multiple relationship**.

**dual representation** the ability to comprehend an object simultaneously as the object itself and as a representation of something else. For example, a photograph of a person can be represented both as the print itself and as the person it depicts. Also called **dual encoding**; **dual orientation**.

**dual scaling (DS)** a method of assessing relationships and patterns among CATEGORICAL DATA that involves assigning scale values to the elements of the data set. For example, DS may be useful when assessing the relationship between achievement motivation and performance. When achievement motivation is low or high, performance is expected to be low; however, when achievement motivation is moderate, performance is expected to be high. This curvilinear relationship can be analyzed more effectively with DS than with conventional statistical methods (e.g., corre-



lation, regression), as the latter require assumptions of LINEARITY and would reveal no apparent association between the variables. Also called **optimal scaling**.

**dual-store model of memory** the concept that memory is a two-stage process, comprising SHORT-TERM MEMORY, in which information is retained for a few seconds, and LONG-TERM MEMORY, which permits the retention of information for hours to many years. William JAMES called these stages PRIMARY MEMORY and SECONDARY MEMORY, respectively. Also called **dual memory theory**. See also MODAL MODEL OF MEMORY; MULTISTORE MODEL OF MEMORY.

**dual-task competition** a phenomenon observed in experimental techniques examining DUAL-TASK PERFORMANCE, in which participants are asked to perform two tasks (e.g., speeded reaction time and mental arithmetic) simultaneously. Such tasks require effort (see EFFORTFULNESS) and tend to compete against each other (see RESOURCE COMPETITION), resulting in increased error rates and longer reaction time. The decrease in performance is often taken as an index of conscious, voluntary, and attentional capacity limits (see CENTRAL LIMITED CAPACITY).

**dual-task performance** the concurrent performance of two tasks. In the study of attention, dual-task performance is often examined to explore the nature of processing limitations and the strategies used to coordinate performance. See DUAL-TASK COMPETITION; SECONDARY TASK METHODOLOGY.

**dual thresholds** a stimulus-threshold theory in which high and low thresholds are postulated. When the lower threshold is exceeded, the observer may believe a stimulus is present but is not sure. When the higher threshold is exceeded, the observer is certain that the stimulus is present.

**dual trace hypothesis** a restatement of the PERSEVERATION-CONSOLIDATION HYPOTHESIS of memory formation specifying that short-term memory is represented neurally by activity in reverberating circuits and that stabilization of these circuits leads to permanent synaptic change, reflecting the formation of long-term memory. See HEBBLIAN SYNAPSE. [proposed in 1949 by Donald O. HEBB]

**Duchenne muscular dystrophy** see MUSCULAR DYSTROPHY. [Guillaume Benjamin Armand **Duchenne** (1806–1875), French neurologist]

**Duchenne smile** a smile characterized by bilaterally symmetrical upturning of the lips and activation of the orbicularis oculi muscles surrounding the eyes, which creates a crow's-foot effect at the corners of the eyes. Duchenne smiles are believed to be authentic smiles, as opposed to posed, voluntary **non-Duchenne smiles** that lack the orbicularis oculi component. [Guillaume **Duchenne**]

**duct** *n.* in anatomy, a tubular canal or passage, especially one that transports a secretion, such as a bile duct or tear duct. Glands with ducts are called EXOCRINE GLANDS. —**ductal** *adj.*

**ductless gland** see ENDOCRINE GLAND.

**ductus deferens** see VAS DEFERENS.

**due process** the administration of the law according to established and accepted principles, especially those upholding natural justice and the rights of the accused. In the United States, due process of law is guaranteed by the 5th and 14th Amendments to the U.S. Constitution. Also called **due process rights**.

**due process model** a view of legal process that places a

premium on the rights of the accused and the maintenance of fair procedures by which such people are processed within the criminal justice system. Compare CRIME CONTROL MODEL.

**dull normal** see BELOW AVERAGE.

**dummy** *n.* in double-BLIND drug trials, an inert substance that appears identical in all aspects (e.g., dosage form, method of administration) to the active drug under investigation, thereby helping to preserve experimental blinds for both patients and clinical investigators. Since a dummy is completely inert, it has no pharmacological activity, unlike an ACTIVE PLACEBO, which may produce side effects.

**dummy variable 1.** in REGRESSION ANALYSIS, a numerical variable that is created to represent a QUALITATIVE fact, which is done by giving a variable a value of 1 or 0 to indicate the presence or absence of a CATEGORICAL trait. A dummy variable usually represents a DICHOTOMOUS VARIABLE, that is, one that can have only two categories. For example, gender could be coded as a 1 to represent female and a 0 to represent male. When a measure has more than two categories, a researcher creates  $k - 1$  dummy variables to represent the total number of different categories,  $k$ , with one of the categories indicated by 0. **2.** in mathematics and computer science, a variable that can stand for or be bound to any element from its domain. Also called **indicator variable**.

**dummy variable coding** a method of assigning numerical values to a CATEGORICAL VARIABLE in such a way that the variable reflects class membership. The values of 0 and 1 often are used, with 0 typically representing non-membership and 1 typically representing membership. Compare CONTRAST CODING; EFFECT CODING.

**Duncan's multiple range test (Duncan's MRT)** a MULTIPLE COMPARISONS test used to follow up on an ANALYSIS OF VARIANCE that yields significant results. After obtaining a significant F RATIO, a researcher could conclude that at least one pair of samples is significantly different on the DEPENDENT VARIABLE and then conduct a Duncan multiple range test on pairs of samples to identify that specific pair. The overall TYPE I ERROR rate would be protected, which would not be the case if separate T TESTS were conducted on all possible pairs. Other types of procedures for following up a significant analysis of variance include the SCHEFFÉ TEST and TUKEY'S HONESTLY SIGNIFICANT DIFFERENCE TEST, among others. [David B. **Duncan** (1917–2006), U.S. biostatistician]

**Dunn-Bonferroni procedure** a statistical method for assessing whether multiple pairs of samples are significantly different from each other, while protecting the overall TYPE I ERROR rate by dividing the alpha or SIGNIFICANCE LEVEL by the number of comparisons made. For example, if a researcher wants to investigate whether three samples are significantly different using an alpha of .05, three T TESTS could be conducted (i.e., between groups 1 and 2, 2 and 3, and 1 and 3) using an alpha level of  $.05/3 = .0167$  for each comparison; this approach would hold the overall Type I error rate at .05. Also called **Bonferroni t test**; **Dunn's multiple comparison test**. [Olive Jean **Dunn**, U.S. mathematician; Carlo Emilio **Bonferroni** (1892–1960), Italian mathematician]

**Dunnnett's multiple comparison test** a statistical method for assessing whether a CONTROL GROUP is significantly different from each of several treatment groups. It is similar to the DUNN-BONFERRONI PROCEDURE but not as

stringent in that it does not require the SIGNIFICANCE LEVEL per comparison to be as small. The index of difference that is obtained from this test is called **Dunnett's *t***. [Charles W. **Dunnett** (1921–2007), Canadian statistician]

**Dunn–Šidák procedure** a statistical technique that uses MULTIPLE COMPARISONS to assess whether three or more samples are significantly different. More powerful (requiring a less stringent SIGNIFICANCE LEVEL) than the DUNN–BONFERRONI PROCEDURE, it assumes that each of the comparison tests is independent of all the others. Also called **Dunn–Šidák method**; **Dunn–Šidák test**. [Olive Jean **Dunn**, U.S. mathematician; Zbynek **Šidák** (1933–1999), Czech statistician]

**Dunn's multiple comparison test** see DUNN–BONFERRONI PROCEDURE.

**duplex theory** the theory that vision depends on the activity of two types of receptors: the RETINAL RODS, which are active in dim light; and the RETINAL CONES, which are active in brighter light. Also called **duplicity theory**.

**durable power of attorney** see ADVANCE DIRECTIVE.

**Duragesic** *n.* a trade name for FENTANYL.

**dura mater** the outermost and strongest of the three layers of membranes (MENINGES) that cover the brain and spinal cord.

**duration of untreated illness** the length of time that an illness is present before drug treatment or other forms of therapy are initiated. Such periods are studied to determine the effect, for example, of untreated schizophrenia on symptom severity and the likelihood that specific treatments will be effective.

**duress** *n.* acts or threats (e.g., the threat of confinement) that compel people to act or speak against their will (e.g., to make a COERCED CONFESSION).

**Durham rule** a 1954 ruling by the U.S. Court of Appeals in a case involving a defendant named Durham. It stated that “an accused is not criminally responsible if his unlawful act was the product of mental disease or mental defect.” This rule has been replaced by the AMERICAN LAW INSTITUTE MODEL PENAL CODE INSANITY TEST. Also called **Durham decision**; **Durham test**; **product rule**.

**Dusky standard** an influential 1960 U.S. Supreme Court ruling establishing that defendants' COMPETENCY TO STAND TRIAL must be related to their ability to understand and appreciate the criminal proceedings against them and to whether they can reasonably assist their own counsel by making choices among available options (e.g., pleas).

**dustbowl empiricism** an approach to science and the social sciences that consists primarily of making empirical observations and collecting data rather than establishing a theoretical framework. The “dustbowl” refers to certain campuses in the center of the United States, where this approach was once considered to be widespread.

**Dutch Hunger Winter** during World War II, a Nazi-imposed famine in the Netherlands from October 1944 to May 1945, the effects of which were later associated with an increased risk of mental illness in the offspring born to Dutch women who were pregnant at the time. In particular, evidence from epidemiological studies of the Dutch Hunger Winter and of a similarly severe famine in China from 1959 to 1961 suggests that prenatal exposure to maternal starvation and nutritional deficiency plays a role in

an offspring's later development of schizophrenia. Also called **Hunger Winter**. See also FETAL PROGRAMMING.

**duty to protect** the obligation of mental health professionals to protect their clients from self-harm as well as to protect third parties from harm or violence that may result from their clients' actions. This obligation may involve but is not necessarily restricted to a DUTY TO WARN. See TARASOFF DECISION.

**duty to warn** the obligation of mental health professionals to warn third parties whom their clients intend to harm or who might be able to protect a suicidal client from self-harm. See also DUTY TO PROTECT; TARASOFF DECISION.

**DV** abbreviation for DEPENDENT VARIABLE.

**DVD** abbreviation for developmental verbal dyspraxia. See DEVELOPMENTAL APRAXIA OF SPEECH.

**Dvorak keyboard** a keyboard layout based upon the frequency with which letters appear in the English language. Keys are placed such that the most frequently occurring keys are all in the main or home row (the row upon which the fingers rest) and are therefore the easiest to reach. Also called **Dvorak simplified keyboard**. See also CHORD KEYBOARD. [invented in 1936 by August **Dvorak** (1894–1975), U.S. educator]

**DVT** abbreviation for DEEP VEIN THROMBOSIS.

**dwarfism** *n.* a condition of underdeveloped body structure due to a developmental defect, a hereditary trait, hormonal or nutritional deficiencies, or disease. The relative size of the body, head, and limbs may be proportionate or disproportionate. A perfectly proportioned individual with this condition was formerly called a **midget**, a term now considered offensive; **dwarf** is preferred instead. Some forms of dwarfism, such as that due to thyroid-hormone deficiency, are associated with intellectual disability. Individuals with achondroplastic dwarfism (see ACHONDROPLASIA) usually have normal intelligence. See also PSEUDO-ACHONDROPLASIA; PYGMYISM.

**Dx** abbreviation for DIAGNOSIS.

**dyad** (**diad**) *n.* **1.** a pair of individuals in an interpersonal situation, such as mother and child, husband and wife, co-therapists, or patient and therapist. **2.** two individuals who are closely interdependent, particularly on an emotional level (e.g., twins reared together, mother and infant, or a very close married couple). —**dyadic** *adj.*

**dyadic accuracy** see SOCIAL RELATIONS MODEL.

**dyadic effect** that part of the behavior of two interacting individuals that is the product of their particular interaction and that is distinct from the way in which each characteristically relates to others.

**dyadic relationship** **1.** any committed, intimate two-person relationship. **2.** in psychotherapy and counseling, the relationship between therapist and patient or counselor and client.

**dyadic session** a meeting of a therapist with only one particular client, as opposed to a couple or a family.

**dyadic therapy** see INDIVIDUAL THERAPY.

**dying phobia** see THANATOPHOBIA.

**dying process** a progressive and nonreversible loss of vital functions that results in the end of life. The transition from health to death can be swift or extended, predictable or unpredictable, depending on the specific life-threatening

condition, the vigor of the patient, and the treatment available. See also END OF LIFE; STAGES OF GRIEF; TRAJECTORIES OF DYING.

**dynamic** *adj.* **1.** pertaining to force. **2.** continuously changing or in flux. **3.** describing systems of psychology that emphasize motivation, mental processes, and the complexities of force and interaction. See also DYNAMIC PSYCHOLOGY; PSYCHODYNAMICS.

**dynamic anthropometry** design practice that takes into account the actions and movements expected of product or system users, with the goal of shifting adjustment demands from the user to the product, so that, for example, the angle of a backrest changes automatically when the user moves.

**dynamic assessment** **1.** a process that uses formal DYNAMIC TESTING as well as essays and the like to assess learning ability. **2.** an assessment that has the goal of elaborating on the complex reasons for dysfunctions, especially with regard to conflicts.

**dynamic calculus** a model of motivation based on measurements of innate drives (ERGS) and sentiments. [proposed by Raymond B. CATTELL]

**dynamic core** a postulated brain basis for conscious events, involving a subset of neurons in the THALAMOCORTICAL SYSTEM that enables specific conscious experiences. The most information-rich subset of neurons involved may vary dynamically from moment to moment, but the core always maximizes high integration and differentiation of information. See COMPLEXITY HYPOTHESIS. [proposed by U.S. neuroscientist Gerald M. Edelman (1929–2014) and Italian–U.S. neuroscientist Giulio Tononi (1960– )]

**dynamic effect law** the theory that GOAL-DIRECTED BEHAVIORS become habitualized as they effectively attain the goal. [proposed by Raymond B. CATTELL]

**dynamic equilibrium** the state of a system in which different (often opposing) reactions or other processes occur at the same rate and thus balance each other, such that there is no net change to the overall system. See also DYNAMIC SYSTEM.

**dynamic formulation** the ongoing attempt to organize the clinical material elicited about a client's behavior, traits, attitudes, and symptoms into a structure that helps the therapist understand the client and plan his or her treatment effectively.

**dynamic interactionism** a model of personality and behavior in which individual development depends upon continuous, reciprocal interaction with the environment.

**dynamic kinesthetic imagery** see KINESTHETIC IMAGERY.

**dynamic model** in psychoanalytic theory, the view that the psyche can be explained in terms of underlying, unconscious drives and instincts that mold the personality, motivate behavior, and produce emotional disorder. Compare ECONOMIC MODEL; TOPOGRAPHIC MODEL. See also METAPSYCHOLOGY.

**dynamic psychology** **1.** any system of psychology that emphasizes MOTIVATION or DRIVE. **2.** a theory of psychology emphasizing causation and motivation in relation to behavior, specifically the stimulus–organism–response chain in which the stimulus–response relationship is regarded as the mechanism of behavior and the drives of the

organism are the mediating variable. See S–O–R PSYCHOLOGY.

**dynamic psychotherapy** see PSYCHODYNAMIC PSYCHOTHERAPY.

**dynamics** *n.* **1.** the study of motion in terms of the forces involved. **2.** the forces that bring about motion. See also KINEMATICS.

**dynamic self-distribution** in GESTALT PSYCHOLOGY, the tendency of the constituents of a whole to arrange themselves in a way that is influenced by the totality and the role of each part in that totality. [attributed to Wolfgang KÖHLER]

**dynamic skill theory** see SKILL THEORY.

**dynamic social impact theory** an extension of SOCIAL IMPACT THEORY that seeks to explain the changes in physiological states, subjective feelings, emotions, cognitions, and behavior that occur as a result of SOCIAL INFLUENCE. The model assumes that this influence is a function of the strength, immediacy, and number of people (or, more precisely, sources) present, and that this influence results in consolidation (growth of the majority), clustering (the emergence of small groups whose members hold similar opinions), correlation (the convergence of group members' opinions on a variety of issues), and continuing diversity (the maintenance of the beliefs of the members of the minority) in groups that are spatially distributed and interacting repeatedly over time. [developed by U.S. social psychologist Bibb Latané (1937– )]

**dynamic system** a system in which a change in one part influences all interrelated parts. Such a system is described by a set of quantitative variables changing continuously and interdependently in time in accordance with laws captured by some set of equations. Dynamic system models provide an important alternative to symbolic models as a way to understand many psychological phenomena (e.g., coordinated movements, developmental phenomena, and decision making).

**dynamic systems theory** a theory, grounded in NON-LINEAR systems principles, that attempts to explain behavior and personality in terms of constantly changing, self-organizing interactions among many organismic and environmental factors that operate on multiple timescales and levels of analysis. See CHAOS THEORY; COMPLEXITY THEORY.

**dynamic testing** an approach to the measurement of learning (i.e., both the ability and the potential to learn) that attempts to identify and quantify through progressively more difficult tasks the degree to which an individual's developed ability reflects underlying capacity. [introduced by Lev VYGOTSKY]

**dynamic touch** the perception of the characteristics of an object by wielding and manipulating it. People can perceive length and shape by dynamic touch.

**dynamic trait** a personality trait that involves motivation or putting the individual into action. It is one of three classes of SOURCE TRAITS in CATTELL'S PERSONALITY TRAIT THEORY, the others being ABILITY TRAITS and TEMPERAMENT TRAITS.

**dynamic unconscious** see UNCONSCIOUS.

**dynamic visual display** in ergonomics, a visual display that is designed to present fluctuating information, such as changes in temperature, speed, or volume.

**dynamogenesis** *n.* **1.** the development of force, especially in the muscles or nerves. **2.** the SENSORIMOTOR principle that changes in motor responses are correspondent and proportional to changes in sensory activities. **3.** the idea that motor responses are evoked by sensory stimulation. Also called **dynamogeny**.

**dynamometry** *n.* the measurement of force expended or power, especially muscular effort or strength. A **dynamometer** usually consists of a spring that can be compressed by the force applied. For example, a **hand dynamometer** is a device for measuring manual grip strength by the amount of force applied to a spring by the hands. See GRIP STRENGTH TEST. —**dynamometric** *adj.*

**dynorphin** *n.* see ENDOGENOUS OPIOID.

**dys-** *prefix* **1.** diseased or abnormal (e.g., DYSGEUSIA). **2.** painful or difficult (e.g., DYSMENORRHEA).

**dysacusis** *n.* a distressing sensation of tones or noises of peripheral origin, such as TINNITUS from cochlear or tympanic disease. Also called **dysacusia**; **dysacusia**. —**dys-acusic** *adj.*

**dysaesthesia** *n.* see DYSESTHESIA.

**dysarthria** *n.* a MOTOR SPEECH DISORDER characterized by difficulty speaking coherently because of impairment in the central or peripheral nervous system. There are four main types usually described: dyskinetic, spastic, peripheral, and mixed. **Dyskinetic dysarthria** includes **hypokinetic dysarthria**, in which the rate and rhythm of speech are affected, and **hyperkinetic dysarthria**, in which articulation is poor due to problems controlling the rate and range of movement in ongoing speech. In **spastic dysarthria**, respiration is poor, intonation patterns are restricted, and spasticity in the vocal folds causes hoarseness. **Peripheral dysarthria** involves continual breathiness with audible inspiration, distortion of consonants, and often a need to speak in short phrases. **Mixed dysarthria** includes symptoms of more than one of the other types of dysarthria and results from tumors, degenerative diseases, trauma, or other conditions that cause multiple neurological impairments. It is important to distinguish dysarthria from ANARTHRIA, which is the complete inability to speak. —**dysarthric** *adj.*

**dysautonomia** *n.* see AUTONOMIC DYSFUNCTION.

**dysbasia** *n.* distorted or difficult walking due to either neurological disease or psychological disorder.

**dysbulia** *n.* **1.** difficulty in thinking, maintaining attention, or maintaining a train of thought. **2.** lack of will-power or weakness of volition.

**dyscalculia** *n.* an impaired ability to perform simple arithmetic operations that results from a congenital deficit. It is a developmental condition, whereas ACALCULIA is acquired.

**dyscheiria** (**dyschiria**) *n.* disordered perception of one side of the body versus the other. Types include ACHEIRIA, ALLOCHEIRIA, and SYNCHEIRIA.

**dyschromatopsia** *n.* a congenital or acquired defect in the discrimination of colors.

**dysconjugate gaze** a condition in which the motion of the two eyes is uncoordinated.

**dyscontrol** *n.* an impaired ability to direct or regulate volition, emotion, behavior, or cognition, or some other area,

which often entails inability to resist impulses and leads to abnormal behaviors without significant provocation.

**dysdiadochokinesia** *n.* loss of ability to perform rapid alternating movements (e.g., repeatedly slapping one's palm and then the back of one's hand against the knee). Also called **dysdiadochokinesia**.

**dyseidetic dyslexia** a type of dyslexia that is marked by difficulty in recognizing whole words and thus by an over-reliance on sounding out words each time they are encountered. It is supposedly due to deficits in VISUAL MEMORY and VISUAL DISCRIMINATION. There is, however, no reliable empirical evidence for this form of dyslexia. See also DYS-PHONETIC DYSLEXIA. [proposed in 1973 by U.S. psychologist Elena Boder (1907–1995)]

**dysesthesia** (**disesthesia**; **dysaesthesia**) *n.* abnormalities of any sense but particularly that of touch.

**dysexecutive syndrome** (**DES**) a collection of symptoms that involve impaired executive control of actions (see EXECUTIVE DYSFUNCTION), caused by damage to the frontal lobes of the brain. Individuals can perform routine tasks but cannot deal with new tasks or situations. They have difficulty in initiating and switching actions; for example, they cannot prevent an inappropriate but highly automated action from occurring or change their actions to appropriate ones. A questionnaire called the **Dysexecutive Questionnaire** (**DEX**) can be used to assess the severity of the impairment.

**dysfluency** *n.* any disturbance in the normal flow or patterning of speech, marked by repetitions, prolongations, and hesitations. See also STUTTERING.

**dysfunction** *n.* any impairment, disturbance, or deficiency in behavior or operation. —**dysfunctional** *adj.*

**dysfunctional family** a family in which relationships or communication are impaired and members are unable to attain closeness and self-expression. Members of a dysfunctional family often develop symptomatic behaviors, and often one individual in the family presents as the IDENTIFIED PATIENT.

**dysfunctions associated with sleep, sleep stages, or partial arousals** one of four basic types of SLEEP DISORDERS, differentiated from the other types by the presence of physiological activations at inappropriate times during sleep rather than by abnormalities in the mechanisms involved in the timing of sleep and wakefulness. This type of sleep disorder includes NIGHTMARE DISORDER, SLEEP TERROR DISORDER, and SLEEPWALKING DISORDER; in DSM-IV-TR and DSM-5, these are classified as PARASOMNIAS.

**dysgenic** *adj.* describing a factor or influence that may be detrimental to heredity. Compare EUGENIC.

**dysgeusia** *n.* abnormalities of the sense of taste. These gustatory distortions may occur during pregnancy, prior to an epileptic seizure, or as a symptom of psychosis or an eating disorder. See also HYPOGEUSIA.

**dysgnosia** *n.* a mild form of AGNOSIA.

**dysgrammatism** *n.* see AGRAMMATISM.

**dysgraphia** *n.* see AGRAPHIA. —**dysgraphic** *adj.*

**dyskinesia** *n.* any involuntary (unintended) movement, such as a tic or spasm. The term also is used more imprecisely to denote distorted or impaired voluntary movement. Also called **dyskinesis**. —**dyskinetic** *adj.*

**dyskinetic dysarthria** see DYSARTHRIA.

**dyslexia** *n.* a neurologically based learning disability manifested as severe difficulties in reading, spelling, and writing words and sometimes in arithmetic. Dyslexia is characterized by impairment in the ability to process sounds, that is, to make connections between written letters and their sounds; written work is often characterized by REVERSAL ERRORS. It can be either acquired (in which case it is often referred to as ALEXIA) or developmental (see DEVELOPMENTAL DYSLEXIA), is independent of intellectual ability, and is unrelated to disorders of speech and vision that may also be present. It is not the result of lack of motivation, sensory impairment, inadequate instructional or environmental opportunities, emotional disturbances, or other such factors. Since the 1960s, information-processing and other psychological accounts of acquired dyslexia have prompted investigators to subdivide it into two general classes: (a) VISUAL WORD-FORM DYSLEXIA, which is characterized by difficulty in the visual analysis of written words; and (b) CENTRAL DYSLEXIA, which is characterized by difficulty in later stages of the reading process (i.e., pronunciation and comprehension). Various types and subtypes of dyslexia, both acquired and developmental, have also been proposed, but there is no universally accepted system of classification. See also READING DISABILITY; READING DISORDER. —**dyslexic** *adj.*

**dyslogia** *n.* see ALOGIA.

**dysmenorrhea** *n.* difficult or painful menstruation. The cause may be an obstruction in the cervix or vagina that traps menstrual blood, or the condition may be secondary to an infection or tumor. More than three fourths of cases are a primary, or functional, form of the disorder for which no physiological cause can be found. Dysmenorrhea may be characterized by cramplike pains in the lower abdomen, headache, irritability, depression, and fatigue. —**dysmenorrhic** *adj.*

**dysmetria** *n.* an impaired ability to control the distance, speed, or power of one's body movements. It is a key sign of cerebellar damage.

**dysmetropsia** *n.* impairment in the ability to judge the size or shape of objects, although the objects may be recognized for what they are.

**dysmnnesia** *n.* an impairment of memory, which may occur as a discrete episode or persist as a chronic condition and may be caused by any of a number of problems, such as delirium, acute or chronic brain disorders, or brain injury. Also called **dysmnestic syndrome**. —**dysmnestic** *adj.*

**dysmorphism** *n.* an abnormality in the shape or structure of some part of the body.

**dysmorphophobia** *n.* a former name for BODY DYSMORPHIC DISORDER.

**dysnomia** *n.* a SEMANTIC MEMORY deficit that impairs word retrieval and object naming, as seen in individuals with Alzheimer's disease and temporal lobe epilepsy.

**dysorexia** *n.* any distortion of normal appetite or disturbance in normal eating behavior. See also EATING DISORDER.

**dysorthographia** *n.* an impairment in the ability to spell.

**dysosmia** *n.* any disorder or disability in the sense of smell. See ANOSMIA; HYPEROSMIA; HYPOSMIA; PAROSMIA; PHANTOSMIA; TROPOSMIA.

**dysostosis** *n.* the defective development of the skeleton of an individual, either because of hereditary factors or because of improper care following birth. The genetic causes are usually expressed in faulty development of the bones of the face and skull. Examples of dysostosis include CROUZON'S SYNDROME and TREACHER COLLINS SYNDROME.

**dyspareunia** *n.* PAINFUL SEXUAL INTERCOURSE, particularly in women. If there are no medical causes for the pain, the diagnosis is FUNCTIONAL DYSpareunia.

**dyspepsia** *n.* abdominal pain or discomfort that may be caused by ULCERS; gastroesophageal reflux (i.e., acid reflux, acid indigestion, or heartburn); gallstones; and, rarely, stomach or pancreatic cancer, although in a majority of cases the cause is unknown. **Functional dyspepsia** (formerly called **nonulcer dyspepsia**) describes the condition when other medical illnesses have been excluded; it may be experienced, for example, after eating too much or too quickly or eating during stressful situations. See also GASTRODODENAL ULCERATION.

**dysphagia** *n.* an impaired ability to swallow. It may be due to damage to the cranial nerves or to muscle problems.

**dysphagia spastica** a somatic or, more often, psychological symptom in which the act of swallowing is painful or difficult because of throat-muscle spasms. In psychological cases, it is a symptom of SOMATIZATION DISORDER.

**dysphasia** *n.* see APHASIA. —**dysphasic** *adj.*

**dysphemia** *n.* a disorder of phonation, articulation, or hearing associated with emotional or mental disturbance and, frequently, a predisposition to a neurological disorder. —**dysphemic** *adj.*

**dysphonetic dyslexia** a type of dyslexia that is marked by an inability to sound out the individual letters and syllables of words (see PHONICS) and is supposedly due to difficulty with sound-symbol correspondences. There is, however, no reliable empirical evidence for this form of dyslexia. See also DYSEIDETIC DYSLEXIA. [proposed in 1973 by U.S. psychologist Elena Boder (1907–1995)]

**dysphonia** *n.* any dysfunction in the production of sounds, especially speech sounds (see PHONATION; VOCALIZATION), which may affect pitch, intensity, or resonance. See also SPASMODIC DYSPHONIA; VOICE DISORDER.

**dysphoria** *n.* a mood characterized by generalized discontent and agitation. —**dysphoric** *adj.*

**dysphrasia** *n.* an older, less common name for dysphasia. See APHASIA.

**dysplastic type** the disproportioned type of an individual who, according to KRETSCHEMER TYPOLOGY, presents a combination of traits but frequently tends toward the introverted, seclusive temperament. See also CONSTITUTIONAL TYPE.

**dyspnea** *n.* shortness of breath or difficulty in breathing. When not accounted for by high altitude, exertion, or any identifiable physiological cause, the condition is referred to as **functional dyspnea**.

**dysponesis** *n.* in biofeedback and relaxation training, a state of habitual tension that generates hypertension, migraine headaches, bruxism (teeth grinding), or related disorders.

**dyspraxia** *n.* an impaired ability to perform skilled, coordinated movements that is neurologically based and not due to any muscular or sensory defect. See ACQUIRED

DYSPRAXIA; DEVELOPMENTAL DYSPRAXIA. See also APRAXIA. —**dyspraxic** *adj.*

**dysprosody (dysprosodia)** *n.* see APROSODY.

**dysregulation** *n.* any excessive or otherwise poorly managed mechanism or response. For example, **emotional dysregulation** is an extreme or inappropriate emotional response to a situation (e.g., temper outbursts, DELIBERATE SELF-HARM); it may be associated with bipolar disorders, borderline personality disorder, autism spectrum disorder, psychological trauma, or brain injury.

**dysrhythmia** *n.* any rhythmic abnormality, as might be detected in speech or in brain waves.

**dysemia** *n.* difficulty in receiving or sending nonverbal cues. More specifically, people with dysemia have trouble interpreting (decoding) or producing (encoding) interpersonal information in the form of facial, postural, gestural, and paralinguistic expressions. For example, a person with dysemia might fail to recognize the wide eyes of someone who is fearful. This nonverbal processing deficit is associated with a variety of social difficulties, including problems forming and maintaining friendships, conflict with others, and isolation or rejection. Innate or acquired damage to the AMYGDALA or other limbic system structures is the most common contributing factor. See also EMORY DYSE- SEMIA INDEX. [term coined in 1992 by U.S. clinical psychologists Stephen Nowicki Jr. (1941– ) and Marshall Duke (1942– )]

**dyssocial behavior** a former name for behavior associated with delinquent or criminal activities, such as gangsterism, racketeering, prostitution, or illegal gambling. It was attributed to distorted moral and social influences, frequently aggravated by a broken home or a deprived environment. Such behavior is now regarded as an aspect of ANTISOCIAL PERSONALITY DISORDER. Also called **sociopathic behavior**.

**dyssocial personality** see ANTISOCIAL PERSONALITY DISORDER.

**dyssomnia** *n.* any of various SLEEP DISORDERS marked by abnormalities in the amount, quality, or timing of sleep. In *DSM-IV-TR*, for example, dyssomnias include PRIMARY IN-

SOMNIA, PRIMARY HYPERSONMIA, NARCOLEPSY, CIRCADIAN RHYTHM SLEEP DISORDER, BREATHING-RELATED SLEEP DISORDER, and **dyssomnia not otherwise specified**, which may be due to excessive noise, light, or other environmental factors; ongoing sleep deprivation; EKBOM'S SYNDROME; or NOCTURNAL MYOCLONUS.

**dysspermia** *n.* an impairment in the structure or functioning of the spermatozoa.

**dystaxia** *n.* a mild degree of ATAXIA, marked by difficulty in performing coordinated muscular movements.

**dysthymia** *n.* **1.** generally, any depressed mood that is mild or moderate in severity. Also called **minor depression**. **2.** more specifically, DYSTHYMIC DISORDER. —**dysthymic** *adj.*

**dysthymic disorder** in *DSM-IV-TR*, a mood disorder characterized by symptoms that are less severe but more enduring than those in MAJOR DEPRESSIVE DISORDER. It is identified as **persistent depressive disorder** in *DSM-5*. Also called **dysthymia**.

**dystocia** *n.* abnormal labor or childbirth.

**dystonia** *n.* impairment of normal muscle tone, causing prolonged muscle contraction that results in abnormal posture, twisting, or repetitive movements. See also ATONIA. —**dystonic** *adj.*

**dystopia** *n.* see UTOPIA. —**dystopian** *adj.*

**dystrophia myotonica** see MYOTONIC MUSCULAR DYSTROPHY.

**dystrophin** *n.* a protein that is needed for normal muscle function. Dystrophin is deficient or lacking in some forms of MUSCULAR DYSTROPHY.

**dystrophy** *n.* **1.** any degenerative disorder arising from faulty or defective nutrition. **2.** any disorder involving ATROPHY (wasting) and weakening of the muscles. See MUSCULAR DYSTROPHY.

**dysuria** *n.* difficult or painful urination. A frequent cause is a bacterial infection that produces irritation or inflammation of the urethra or the neck of the bladder.

**DZ twins** abbreviation for DIZYGOTIC TWINS.

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# Ee

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**E** symbol for EXPECTED VALUE.

**EA** abbreviation for EDUCATIONAL AGE.

**EAHCA** abbreviation for EDUCATION FOR ALL HANDICAPPED CHILDREN ACT.

**EAP** **1.** abbreviation for EMPLOYEE ASSISTANCE PROGRAM. **2.** abbreviation for EQUINE-ASSISTED PSYCHOTHERAPY.

**ear** *n.* **1.** the organ of hearing and balance. In humans and other mammals, the ear is divided into external, middle, and inner sections. The PINNA of the EXTERNAL EAR collects sounds that are then funneled through the EXTERNAL AUDITORY MEATUS to the TYMPANIC MEMBRANE. The sounds are vibrations of air molecules that cause the tympanic membrane to vibrate, which in turn vibrates the OSSICLES, three tiny bones in the MIDDLE EAR. The motion of the last of these bones produces pressure waves in the fluid-filled COCHLEA of the INNER EAR. The motion of the fluid in the cochlea is converted by specialized receptors called HAIR CELLS into neural signals that are sent to the brain by the AUDITORY NERVE. **2.** the projecting part of the external ear. See AUDITORY SYSTEM.

**ear canal** see EXTERNAL AUDITORY MEATUS.

**eardrum** *n.* see TYMPANIC MEMBRANE.

**Early and Periodic Screening, Diagnosis, and Treatment (EPSDT)** surveillance or search for indications or early manifestations of a disease or disorder, regularly carried out at specific intervals. In the United States, an EPSDT program of preventive health care services (e.g., for vision, hearing, and dental problems) and mental health and behavioral screenings (e.g., for substance abuse) is provided for children and young adults insured through Medicaid.

**early bilingualism** BILINGUALISM attained early in life, either through the simultaneous acquisition of two languages at home or through early exposure to a second language before the completion of first-language acquisition at around age 5. This is often contrasted with **late bilingualism**, which refers to second-language acquisition after age 5 (or, in some definitions, after the onset of puberty). Early bilingualism is more likely to result in a nativelike command of phonology and grammar than is late bilingualism.

**early experience** experience acquired in the first 5 years of life, which is believed to have a significant influence on a child's subsequent cognitive, social, and emotional development. Whereas theorists in the first half of the 20th century believed that early experience permanently determined a child's development, subsequent research has indicated that later experience can modify the effects of early experience.

**early immersion** see TOTAL IMMERSION.

**early infantile autism** see AUTISM.

**early intervention** a collection of specialized services provided to children from birth to 3 years of age with identified conditions placing them at risk of developmental dis-

ability or with evident signs of developmental delay. Services are designed to minimize the impact of the infant's or toddler's condition, and in addition to stimulatory, social, and therapeutic programs, they may include family training, screening, assessment, and health care.

**early memory** adult recollection of childhood events, which typically goes back only to the age of 3 or so, even though the capacity to learn is present at birth. The absence of earlier childhood memories, referred to as CHILDHOOD AMNESIA, has been noted since the time of Sigmund FREUD. Explanations include neural immaturity, absence of language or adult SCHEMAS to organize event memory, and different coding dimensions in infancy.

**early-morning awakening insomnia** see TERMINAL INSOMNIA.

**early-onset Alzheimer's disease** see ALZHEIMER'S DISEASE.

**early-selection theory** any theory of attention proposing that selection of stimuli for processing occurs prior to stimulus identification. According to early-selection theory, unattended stimuli receive only a slight degree of processing that does not encompass meaning, whereas attended stimuli proceed through a significant degree of deep, meaningful analysis. Compare LATE-SELECTION THEORY.

**Early Years Cognitive Battery** see DIFFERENTIAL ABILITY SCALES.

**Early Years of Marriage Project (EYM Project)** an ongoing longitudinal study of marriage in Black and White American couples. Started in 1986 by U.S. psychologists Joseph Veroff (1929–2007) and Elizabeth Douvan (1926–2002) and sociologist Shirley Hatchett at the University of Michigan, the EYM Project has followed a sample of 373 couples for more than 25 years. It is unique among longitudinal studies of marriage in comparing Black and White couples and has provided important insights into the understanding of the predictors of relationship satisfaction and divorce. Also called **Early Years of Marriage Study**. See also PAIR PROJECT.

**ear ossicles** see OSSICLES.

**earwax** *n.* see CERUMEN.

**ease-of-learning judgment** an individual's prediction of how easy it will be to acquire and retain certain items of information, given before any attempt is made to do so. In tests of learning and memory, participants' pretest ease-of-learning judgments tend to be only weakly correlated with their performance on the test. Like FEELING OF KNOWING, ease-of-learning judgments are an important aspect of METACOGNITION. Compare RETROSPECTIVE CONFIDENCE JUDGMENT.

**Easterbrook hypothesis** the hypothesis that the range of cues attended to is inversely related to the degree of arousal; that is, in a state of increased arousal, attention narrows and fewer environmental stimuli are focused on. The hypothesis was proposed as an explanation of YERKES–

DODSON LAW, which describes the relationship between arousal and performance. [proposed in 1959 by J. A. **East-erbrook**, 20th-century Canadian psychologist]

**eating aid** an ASSISTIVE TECHNOLOGY device that can be used by people with disabilities to feed themselves independently. Eating aids include metal or plastic devices for holding sandwiches; nonslip place mats, bowls, and dishes with suction cups attached to the bottom; handles that can swivel, are angled, or have extensions; and combination eating devices, such as knife–fork or fork–spoon combinations.

**eating compulsion** an irresistible impulse leading to abnormal eating behavior. This is a primary symptom of a number of eating disorders, such as BULIMIA NERVOSA and FOOD ADDICTIONS. See also COMPULSIVE EATING.

**eating disorder** any disorder characterized primarily by a pathological disturbance of attitudes and behaviors related to food, including ANOREXIA NERVOSA, BULIMIA NERVOSA, and BINGE-EATING DISORDER. Other eating-related disorders include PICA and RUMINATION, which are usually diagnosed in infancy or early childhood.

**Eating Disorders Awareness and Prevention, Inc.** see NATIONAL EATING DISORDERS ASSOCIATION.

**Ebbinghaus curve** see FORGETTING CURVE. [Hermann EBBINGHAUS]

**Ebbinghaus illusion** a size CONTRAST ILLUSION in which a concentric ring of large circles makes a medium-sized circle in the center of the ring look small, whereas the same circle in the center of a ring of smaller circles looks large. Also called **Titchener circles**; **Titchener illusion**. [introduced in the 1890s by Hermann EBBINGHAUS but sometimes incorrectly attributed to Edward Bradford TITCHENER]

**Ebonics** *n.* see BLACK ENGLISH. [a blend of the words *ebony* and *phonics*, coined by U.S. psychologist Robert Lee Williams II (1930– ) at a 1973 conference of Black scholars, “Cognitive and Language Development of the Black Child”]

**EBP** abbreviation for EVIDENCE-BASED PRACTICE.

**EBV** abbreviation for EPSTEIN–BARR VIRUS.

**ECA Survey** abbreviation for EPIDEMIOLOGIC CATCHMENT AREA SURVEY.

**eCB** abbreviation for ENDOGENOUS CANNABINOID.

**eccentric projection** the phenomenon of experiencing a stimulus as being in the external world (as in vision and hearing), rather than at the receptor stimulated (as in touch).

**eccyesis** *n.* see ECTOPIC PREGNANCY.

**ECF** abbreviation for extended care facility. See EXTENDED CARE.

**ECG** abbreviation for ELECTROCARDIOGRAM.

**echinacea** *n.* an herbal agent derived from any of nine related plant species native to the United States and southern Canada, with *Echinacea purpurea* being the most commonly used and perhaps the most potent. Echinacea traditionally has been used in the belief that it stimulates the immune system and prevents or treats colds. Some studies have shown, however, that taking echinacea has no significant effects on preventing colds or reducing their severity or duration. Although it is generally considered safe and there are no known reports of toxicity, some people

may experience hypersensitivity reactions to echinacea, such as rashes, increased asthma, and ANAPHYLAXIS. More common side effects include headache, dizziness, nausea, and constipation. People with autoimmune disorders (see AUTOIMMUNITY), leukemia, multiple sclerosis, tuberculosis, and HIV infection should not take echinacea. Concurrent use with immunosuppressant agents should be avoided, and, as echinacea is believed to be metabolized by the CYTOCHROME P450 3A4 enzyme, it accordingly has numerous potential interactions with psychotropic drugs metabolized via the same enzyme (e.g., clonidine, nefazodone, St. John’s wort).

**echo** *n.* a reflected sound wave that is distinct from that directly transmitted from the source.

**echocardiography** *n.* the production of a graphic record or image (**echocardiogram**) of the internal structures and beating of an individual’s heart with an ultrasound device that uses sonarlike reflections. Echocardiography enables the visualization and measurement of all the chambers and valves of the heart as well as the pumping efficiency of the organ.

**écho des pensées** an AUDITORY HALLUCINATION in which an individual hears his or her own thoughts repeated in spoken form. Also called **thought echoing**.

**echoencephalography** *n.* a method of mapping brain anatomy for diagnostic purposes by using ultrasonic waves. The waves are transmitted through the skull using an instrument called an **echoencephalograph**, and echoes of the waves from intracranial structures are recorded to produce a visual image called an **echoencephalogram**. The method, though still in use, is now considered outdated and has been largely superseded by such methods as TRANSCRANIAL DOPPLER ULTRASONOGRAPHY.

**echographia** *n.* pathological writing that involves copying words and phrases without understanding them.

**echoic memory** the retention of auditory information for a brief period (2–3 seconds) after the end of the stimulus. Also called **auditory sensory memory**.

**echolalia** *n.* mechanical repetition of words and phrases uttered by another individual. It is often a symptom of a neurological or developmental disorder, particularly catatonic schizophrenia or autism. Also called **echophrasia**.

**echolocation** *n.* the ability to judge the direction and distance of objects or obstacles from reflected echoes made by acoustic signals, such as footsteps, the tapping of a cane, or traffic noises. People with visual impairment can learn to develop this ability to find their way and avoid obstacles. Among nonhuman animals, both bats and marine mammals (e.g., dolphins) can locate objects by emitting high-pitched sounds that are reflected from surfaces of the physical environment and prey objects. High-pitched sounds provide better spatial resolution of an object than sounds of lower pitch but require more energy to travel the same distance. Thus, a bat can locate a mosquito but only at a short range. See also ULTRASONIC COMMUNICATION.

**echophrasia** *n.* see ECHOLALIA.

**echopraxia** *n.* mechanical repetition of another person’s movements or gestures. It is often a symptom of a neurological disorder, particularly catatonic schizophrenia.

**echovirus** *n.* enteric cytopathic human orphan virus: any of more than 30 types of viruses of the genus *Enterovirus*. Infection is asymptomatic in 90% of cases; in others, infec-



tion may cause a range of conditions, from mild fever and respiratory symptoms to severe, sometimes fatal conditions such as meningitis and encephalitis. Infection occurs most often during the summer and fall in temperate climates and year-round in tropical climates. When first discovered, the viruses were not a part of any known family of infectious agents (hence their labeling as “orphan”).

**eclampsia** *n.* convulsions that occur in pregnant women and are not associated with epilepsy or other cerebral disorders. They are preceded by PREECLAMPSIA. The convulsions, which can occur before, during, or after delivery of the child, are usually followed by unconsciousness or coma of varying lengths. —**eclamptic** *adj.*

**eclectic behaviorism** an approach to BEHAVIOR THERAPY that does not adhere to one theoretical model but applies, as needed, any of several techniques, including CLASSICAL CONDITIONING, MODELING, OPERANT CONDITIONING, self-control mechanisms, and COGNITIVE RESTRUCTURING.

**eclectic counseling** any COUNSELING theory or practice that incorporates and combines doctrines, findings, and techniques selected from diverse theoretical systems.

**eclecticism** *n.* a theoretical or practical approach that blends, or attempts to blend, diverse conceptual formulations or techniques into an integrated approach. —**eclectic** *adj.*

**eclectic psychotherapy** any psychotherapy that is based on a combination of theories or approaches or uses concepts and techniques from a number of different sources, including the integrated professional experiences of the therapist. With the more formalized **prescriptive eclectic psychotherapy**, the clinician attempts to customize psychological treatments and the therapeutic relationship to the specific needs of individual clients. This is done by drawing on effective methods from across theoretical camps and by matching those methods to particular cases on the basis of empirically supported guidelines.

**eclima** *n.* increased appetite or insatiable hunger, often associated with BULIMIA NERVOSA. Also called **eclimia**. See also HYPEROREXIA; HYPERPHAGIA.

**ECM** abbreviation for EXTERNAL CHEMICAL MESSENGER.

**ecobehavioral assessment** an observational research method used in APPLIED BEHAVIOR ANALYSIS to measure moment-to-moment effects of multiple environmental events on an individual's specific behaviors. These events include the behavior of others, task demands, time of day, and situational changes.

**ECochG** abbreviation for electrocochleography. See ELECTROPHYSIOLOGIC AUDIOMETRY.

**ecofeminism** *n.* a position that combines FEMINISM with a commitment to environmentalism and environmental activism. It emphasizes a concomitance between the exploitation of nature and the exploitation of women, suggesting that there is a set of social, political, and philosophical attitudes that give rise to and maintain both. —**ecofeminist** *n.*

**ECoG** abbreviation for ELECTROCORTICOGRAPHY.

**ecological assessment** the gathering of observations in various environments to examine whether individuals or entities behave differently depending on the surroundings. For example, a teacher at a child-development center

may investigate whether children demonstrate more or less problem behavior in various settings at the center. Findings from the ecological assessment may offer ideas on how to intervene to improve the overall behavior of the children in multiple settings.

**ecological fallacy** a mistaken conclusion drawn about individuals based on findings from groups to which they belong. For example, if a university administrator found that the correlation between faculty salary and number of publications at the departmental level was strong and positive (e.g.,  $r = .60$ ), it would be an ecological fallacy to assume that for any particular faculty member the correlation would be the same.

**ecological momentary assessment (EMA)** the process of examining the behavior of individuals at random, multiple time points to get a clearer picture of how they behave in various real-world settings. For example, a researcher may conduct an EMA on individuals who are trying to quit smoking by contacting them randomly throughout a week to inquire about urges to smoke, mood, other people who are interacting with them, and other relevant circumstances that may be occurring at these times.

**ecological niche** **1.** the function or position of an organism or a population within a physical and biological environment. **2.** the particular area within a habitat occupied by an organism or a population.

**ecological perception** an organism's detection of the AFFORDANCES and INVARIANCES within its natural, real-world environment (i.e., its ecology as opposed to a laboratory setting), as mediated and guided by the organism's immersion in and movement through that environment. James J. GIBSON proposed that ecological perception is holistic (the organism and environment are a single inseparable system), that environmental properties are perceived as meaningful entities, and that perceptual patterns may be direct rather than concepts that require interpretation by higher brain centers from visual or other cues. See DIRECT PERCEPTION.

**ecological perspective** a concept of COMMUNITY PSYCHOLOGY in which a community (or any other social entity) is viewed in terms of the interrelations among people, roles, organizations, local events, resources, and problems. It accounts for complex reciprocal interactions of individuals and their environment. The premise of the ecological perspective is that intervention should contribute to the development of the entire community.

**ecological psychology** **1.** the analysis of BEHAVIOR SETTINGS with the aim of predicting patterns of behavior that occur within certain settings. The focus is on the role of the physical and social elements of the setting in producing the behavior. According to behavior-setting theory, the behavior that will occur in a particular setting is largely prescribed by the roles that exist in that setting and the actions of those in such roles, irrespective of the personalities, age, gender, and other characteristics of the individuals present. In a place of worship, for example, one or more individuals have the role of leaders (the clergy), whereas a larger number of participants function as an audience (the congregation). Other factors that shape behavior are the size of the setting, the number of roles required to maintain it, its permeability (i.e., openness to outside influence or nonmembers), and the explicitness of rules and regulations relating to expected behavior there. **2.** a less common name for the theoretical orientation embodied by

James J. GIBSON's concepts of ECOLOGICAL PERCEPTION and DIRECT PERCEPTION.

**ecological study** **1.** research into the mutual relations between organisms and their environments. See ECOLOGY. **2.** in psychology, research that evaluates the influence of environmental factors on individual behavior and mental health. See HUMAN ECOLOGY; SOCIAL ECOLOGY; URBAN ECOLOGY. **3.** any study in which the statistical analyses are conducted at the population level rather than the individual level. See EPIDEMIOLOGY.

**ecological systems theory** an evolving body of theory and research concerned with the processes and conditions that govern the course of human development in the actual environments in which human beings live. Originally focused on the environment as a context for child development (in terms of nested systems ranging from micro- to macro-), the theory is now known as the **bioecological model**, denoting a broader conception of human development as a process that is affected, across the lifespan and across successive generations, by both environmental context and individual biopsychological characteristics. See also CHRONOSYSTEM; ECOSYSTEMIC APPROACH; EXOSYSTEM; MACROSYSTEM; MESOSYSTEM. [originally conceptualized by Urie BRONFENBRENNER]

**ecological validity** **1.** the degree to which results obtained from research or experimentation are representative of conditions in the wider world. For example, psychological research carried out exclusively among university students might have a low ecological validity when applied to the population as a whole. Ecological validity may be threatened by EXPERIMENTER BIAS, oversimplification of a real-world situation, or naive sampling strategies that produce an unrepresentative selection of participants. See also VALIDITY. [defined by Martin T. ORNE on the basis of work by Egon BRUNSWIK] **2.** in perception, the degree to which a PROXIMAL STIMULUS (i.e., the stimulus as it impinges on the receptor) covaries with the DISTAL STIMULUS (i.e., the actual stimulus in the physical environment). [originated by Egon Brunswik]

**ecology** *n.* the study of relationships between organisms and their physical and social environments. BEHAVIORAL ECOLOGY is a subfield that examines how the behavior of nonhuman animals is affected by physical and social factors. —**ecological** *adj.* —**ecologist** *n.*

**ecomania** *n.* a morbid preoccupation with and pathological attitude toward members of one's family, characterized by irritable and domineering behavior. It is often a factor in DOMESTIC VIOLENCE and the CYCLE OF VIOLENCE. Also called **oikomania**.

**economic model** in psychoanalytic theory, the view that the psyche can be explained in terms of the amounts and distributions of PSYCHIC ENERGY associated with particular mental states and processes. Compare DYNAMIC MODEL; TOPOGRAPHIC MODEL.

**Economo's disease** see ENCEPHALITIS LETHARGICA. [Constantin von **Economo** (1876–1931), Austrian neurologist]

**economy** *n.* **1.** any system of rules and regulations by which something is managed; for example, a TOKEN ECONOMY is one in which a behavioral system is managed according to the disbursement of tokens as rewards. **2.** management of resources in order to maximize efficiency or returns (material or psychological) and to avoid waste.

**economy of effort** the tendency of an organism to act efficiently and minimize the expenditure of energy, such as by avoiding any unnecessary movements.

**economy principle** see LAW OF PARSIMONY.

**ecopathology** *n.* the identification of people as abnormal by other members of their community. Behavior considered normal in some communities (i.e., conforming to the attitudes and beliefs of community members) may be regarded as eccentric or even psychotic in other communities.

**ecopsychology** *n.* **1.** a field that promotes a less egocentric mode of thinking in favor of a more ecocentric one. By encouraging humans to rethink their position in the natural world, some psychologists believe they can influence people to be more responsible stewards of nature. **2.** an occasional synonym of ENVIRONMENTAL PSYCHOLOGY.

**ecosystem** *n.* a self-contained unit comprising a community of individuals of different species and the environment they inhabit. There is an interdependent balance of predators, prey, food resources, and substrates such that a change in any one component is often followed by commensurate changes in the other components.

**ecosystemic approach** an approach to therapy that emphasizes the interaction between the individual or family and larger social contexts, such as schools, workplaces, and social agencies. The approach emphasizes interrelatedness and interdependency and derives from diverse fields, including psychology, sociology, anthropology, economics, and political science. FAMILY THERAPY in particular has made use of this approach in designing interventions for complex families and systems. See also ECOLOGICAL SYSTEMS THEORY. [developed in psychology by Urie BRONFENBRENNER]

**ecphory** *n.* **1.** the activation of a memory, which involves the RETRIEVAL of a memory by a CUE. A retrieval cue that matches information stored in memory results in access to that memory. Cues or conditions that were present when the memory was formed are stored with the memory; therefore, those same conditions need to be reinstated at retrieval to provoke ecphory. **2.** the process in which a memory, emotion, or the like is revived in the mind by a stimulus. Also called **ecphoria**. [defined by German biologist Richard Semon (1859–1918)] —**ecphoric** *adj.*

**ECS** abbreviation for electroconvulsive shock. See ELECTROCONVULSIVE THERAPY.

**ecstasy** *n.* a feeling of intense pleasure and elation, including that experienced in some mystical states, during orgasm, with aesthetic reveries, and in drug-induced states. Such extreme euphoria also may occur in the context of a HYPOMANIC EPISODE or a MANIC EPISODE. —**ecstatic** *adj.*

**Ecstasy** *n.* the popular name for MDMA.

**ecstatic trance** an ALTERED STATE OF CONSCIOUSNESS characterized by joy and happiness. It is often associated with various religious practices, such as intense meditation or certain emotional styles of worship. See also MYSTICISM; VOOODOO.

**ECT** **1.** abbreviation for ELECTROCONVULSIVE THERAPY. **2.** abbreviation for ELEMENTARY COGNITIVE TASK.

**ECT-induced amnesia** amnesia that is a by-product of ELECTROCONVULSIVE THERAPY (ECT). Although ECT is effective in the relief of severe depression, memory deficits often

arise, especially when the current is applied to both sides of the brain. Memory can be severely compromised in the hours or days following treatment, but new learning typically returns to normal by 6 months after treatment. Some impairment in the retrieval of events that occurred close to the time of treatment may remain.

**ecto-** *combining form* outer or outside.

**ectoderm** *n.* the outermost of the primary GERM LAYERS of a developing embryo. Structures derived from ectoderm include skin and nails, hair, glands, mucous membranes, the nervous system, and external sense organs (e.g., ears, eyes). —**ectodermal** *adj.*

**ectohormone** *n.* see PHEROMONE.

**ectomorph** *n.* a constitutional type (SOMATOTYPE) in SHELDON'S CONSTITUTIONAL THEORY OF PERSONALITY characterized by a thin, long, fragile physique, which—according to this theory—is highly correlated with CEREBROTONIA. Also called **ectomorphic body type**. —**ectomorphic** *adj.* —**ectomorphy** *n.*

**-ectomy** *combining form* surgical removal of a part of the body (e.g., LOBECTOMY). See also -TOMY.

**ectopia** *n.* displacement or abnormal positioning of part of the body. For example, neurons are seen in unusual positions in the cerebral cortex of people with dyslexia. —**ectopic** *adj.*

**ectopic pregnancy** a pregnancy that develops outside the uterus, most commonly in a fallopian tube (a TUBAL PREGNANCY). Also called **eccyesis**; **extrauterine pregnancy**; **paracyesis**.

**ectopic testis** a testis that descends improperly from the abdominal cavity and becomes lodged outside the scrotum, such as beneath the outer tissue layers of the thigh or in the perineum.

**ectoplasm** *n.* **1.** the relatively more dense CYTOPLASM found at the periphery of a cell. Compare ENDOPLASM. **2.** in SPIRITUALISM, a viscous substance said to emanate from a medium's body during a seance. Also called **teleplasm**. See also MATERIALIZATION. —**ectoplasmic** *adj.*

**ectotherm** *n.* an animal whose body temperature is largely regulated by the environment, which is the source of most of its heat. Examples include snakes and bees. Such animals, formerly called **poikilotherms**, are popularly described as cold-blooded. Compare ENDOTHERM. —**ectothermic** *adj.*

**ED** abbreviation for EFFECTIVE DOSE.

**EDA** abbreviation for EXPLORATORY DATA ANALYSIS.

**edema** *n.* an accumulation of fluid in body cells, organs, or cavities resulting in swelling. Causes range from consuming too much salt or taking a long walk in hot weather to heart failure or kidney disease. See also CEREBRAL EDEMA. —**edematous** *adj.*

**edge** *n.* **1.** the border of an object. **2.** the border between two elements in an image.

**edge detector** any of various cells in the visual system or hypothetical processors in models of vision that respond best to a dark–light border or edge.

**edge theory** a theory proposing that DEATH ANXIETY has a survival function that emerges when individuals perceive themselves to be in life-threatening situations. Edge theory attempts to resolve the apparent discrepancy between

other theoretical claims that death anxiety is a major motivational force and empirical studies that reveal only low to moderate levels of death anxiety in the general population. It suggests that death anxiety is the subjective or experiential side of a holistic preparation to deal with danger (symbolic of standing at the edge of the void). Heightened arousal is turned on by anxiety surges in emergency situations; psychological difficulties arise when the emergency response has permeated the individual's everyday functioning. See also TERROR MANAGEMENT THEORY. [introduced by Robert J. KASTENBAUM]

**EDI** abbreviation for EMORY DYSEMIA INDEX.

**Edinger–Westphal nucleus** a collection of small nerve cells in the midbrain. It is part of the PARASYMPATHETIC NERVOUS SYSTEM pathway to the ciliary muscle and the pupillary sphincter of the eye, which play a role in visual accommodation. [Ludwig **Edinger** (1855–1918), German neuroanatomist; Karl Friedrich Otto **Westphal** (1833–1890), German neurologist]

**EDR** abbreviation for electrodermal response. See GALVANIC SKIN RESPONSE.

**edrophonium** *n.* an anticholinesterase (see CHOLINERGIC DRUG) characterized by a rapid onset and short duration of action. It is the drug of choice in the diagnosis of myasthenia gravis, and it may also be used in surgical anesthesia to reverse the effects of neuromuscular blocking agents. U.S. trade names: **Enlon**; **Reversol**.

**educable** *adj.* having the potential for academic learning. —**educability** *n.*

**educable mentally retarded (EMR)** in SPECIAL EDUCATION, a rarely used term for a category of people with mild or high-moderate mental retardation (IQ 50 to 70 or 80) who are capable of achieving approximately a fifth-grade academic level.

**education** *n.* **1.** the process of teaching or acquiring knowledge, skills, and values. **2.** a field of advanced teacher preparation that involves the practice of methods for teaching and learning. —**educational** *adj.*

**educational acceleration** educational progress at a rate faster than usual through a variety of measures, such as strengthening or compacting the curriculum, accelerating instruction in particular subject areas, or grade skipping. These measures are designed to provide gifted students with work more ideally suited to their abilities. Grade acceleration is thought by some to represent a potential disadvantage if the student's social and emotional development is lagging behind his or her intellectual development. Careful assessment of intellectual ability, educational achievement, and social, emotional, and physical development is essential prior to acceleration of one or more grades. Also called **scholastic acceleration**.

**educational age (EA)** the age at which a particular level of scholastic performance typically is obtained, which may be higher or lower than the student's chronological age.

**educational attainment level** **1.** the status of learning that has been achieved by a student or group of students. **2.** the set of standards for acquired knowledge that a student must master before being considered for the next educational step, level, or grade. **3.** the highest level of schooling completed. Research has linked higher educational attainment levels to greater income level, better health, and other positive outcomes.

**educational counseling** the COUNSELING specialty concerned with providing advice and assistance to students in the development of their educational plans, choice of appropriate courses, and choice of college or technical school. Counseling may also be applied to improve study skills or provide assistance with school-related problems that interfere with performance (e.g., learning disabilities). Educational counseling is closely associated with VOCATIONAL COUNSELING because of the relationship between educational training and occupational choice. Also called **educational guidance**; **student counseling**. See also COUNSELING PSYCHOLOGY.

**educational diagnosis** **1.** the process of analytically examining a learning problem, which may involve identification of cognitive, perceptual, emotional, and other factors that influence academic performance or school adjustment. **2.** the conclusion reached as a result of the analytical examination of a learning problem.

**educational guidance** see EDUCATIONAL COUNSELING.

**educational linguistics** a broad field of study concerned with language in education, particularly the use of linguistic theory in developing instructional methods and educational policy.

**educational measurement** the development and application of tests to measure student abilities.

**educational neuroscience** see NEUROEDUCATION.

**educational pacing** **1.** the rate or speed of the learning process. **2.** the control and monitoring of student work speed by a teacher, supervisor, or discussion leader. **3.** the rate at which a whole class of students moves through a specific curriculum. This is determined by multiple factors, such as number of students in the class, student ability and interest, teacher philosophy, and teacher competence.

**educational placement** the act of matching students with the appropriate educational program or environment for their age, abilities, and needs. Standardized tests, classroom test data, interviews, and past student performance may all be taken into account in arriving at this decision.

**educational program** a curriculum or course of training that upon completion often leads to an academic degree, certification, or license. ACCREDITATION may be given by a supervisory organization of the minimum standards that must exist within the institution offering the educational program.

**educational psychology** a branch of psychology dealing with the application of psychological principles and theories to a broad spectrum of teaching, training, and learning issues in educational settings. Educational psychology also addresses psychological problems that can arise in educational systems. **Educational psychologists** often hold applied as well as academic positions, spending their time in a variety of teaching, research, and applied pursuits.

**educational quotient (EQ)** a ratio of EDUCATIONAL AGE to CHRONOLOGICAL AGE times 100.

**educational retardation** **1.** slowness or delay of student progress in acquiring knowledge due to a physical, emotional, intellectual, or mental disability. **2.** a slowness or delay that is specific to a certain subject or educational setting.

**educational sport psychology** a specialty focused on the use of psychological methods to improve performance

in sport. **Educational sport psychologists** assist participants in sport to optimize PERFORMANCE ENHANCEMENT through, for example, use of IMAGERY and ATTENTIONAL FOCUS. Education and training may also be informed by SPORT SCIENCE, physical education, or KINESIOLOGY. Compare CLINICAL SPORT PSYCHOLOGY.

**Educational Testing Service (ETS)** a nonprofit organization, founded in 1947, whose mission is to help advance quality and equity in education by providing fair and valid assessments, research, and related services. The SCHOLASTIC ASSESSMENT TEST and GRADUATE RECORD EXAMINATIONS are well-known tests developed by ETS.

**educational tests** see DIAGNOSTIC EDUCATIONAL TESTS.

**educational therapy** individualized treatment interventions for people with learning disabilities or emotional or behavioral problems that significantly interfere with learning. Educational therapy integrates educational techniques and therapeutic practices to promote academic achievement and the attainment of basic skills while building self-esteem and confidence, fostering independence, and aiding personal development. It is usually conducted by a professionally trained **educational therapist**.

**Education for All Handicapped Children Act (EAHCA; EHA)** an act passed by the U.S. Congress in 1975 guaranteeing all children equal access to education in the LEAST RESTRICTIVE ENVIRONMENT, which led to the promotion of programs for admitting children with disabilities into the general population of students. This act has since been replaced by the INDIVIDUALS WITH DISABILITIES EDUCATION ACT.

**eduction** *n.* the comprehension of relations, or the comprehension of correlates, or both, in an analogy. **Eduction of relations** involves understanding the relationship between the first two terms of an analogy, whereas **eduction of correlates** involves the application of this understanding to the third term in the analogy to find the solution. For example, in the analogy "tall : short as heavy : ?", eduction of relations would be used to infer the relation between *tall* and *short*, and eduction of correlates would be used to apply the relation to produce *light* as a solution. [defined in the early 20th century by Charles SPEARMAN]

**Edwards Personal Preference Schedule (EPPS)** a personality inventory for college students and adults in which the strength of 15 "manifest needs" is assessed on a forced-choice basis. The needs are achievement, order, deference, autonomy, exhibition, affection, succorance, sympathy, change, endurance, heterosexuality, aggression, intraception, abasement, and affiliation. [developed in the 1950s by Allen L. Edwards (1914–1994), U.S. psychologist, based on the needs described in the personality theory of Henry Alexander MURRAY]

**Edwards Social Desirability Scale** a 39-item inventory derived from the MINNESOTA MULTIPHASIC PERSONALITY INVENTORY and used to measure whether respondents are truthful in self-reports or are misrepresenting themselves in a way likely to be seen as positive by others. [developed in the 1950s by Allen L. Edwards]

**Edwards syndrome** see TRISOMY 18. [John Hilton Edwards (1928–2007), British geneticist]

**EE** abbreviation for EXPRESSED EMOTION.

**EEG** abbreviation for ELECTROENCEPHALOGRAPHY or electroencephalogram.

**EEG biofeedback** see NEUROFEEDBACK.

**EEG measures of intelligence** measures of intelligence believed to be extractable from electroencephalographic assessments of sites in the brain. Although some investigators found correlations between EEG measures of intelligence and psychometric test scores, other investigators often failed to replicate their findings. These measures have largely been superseded by more precise ERP MEASURES OF INTELLIGENCE.

**EEOC** abbreviation for EQUAL EMPLOYMENT OPPORTUNITY COMMISSION.

**EFA** abbreviation for EXPLORATORY FACTOR ANALYSIS.

**effect** *n.* **1.** an event or state that is brought about as the result of another (its CAUSE). **2.** in ANALYSIS OF VARIANCE, a statistically significant relationship between variables, such that one variable is held to be an outcome of another (or some combination of others). See MAIN EFFECT; INTERACTION EFFECT. **3.** short for EFFECT SIZE.

**effectance** *n.* the state of having a causal effect on objects and events in the environment; the word is commonly used in the term **effectance motivation**, coined by Robert W. WHITE in 1959.

**effect coding** in REGRESSION ANALYSIS, a procedure in which values of 1 or -1 are assigned to represent the categories of a DICHOTOMOUS VARIABLE (or 1, 0, and -1 for a trichotomous variable). The results obtained for the group indicated by values of 1 are then interpreted relative to the larger group comprising all participants. For example, a researcher could assign values of 1 to individuals in an EXPERIMENTAL GROUP and values of -1 to those in a CONTROL GROUP. He or she could conclude that there is a treatment effect if the experimental group has a mean different from the GRAND MEAN across all of the individuals. Compare CONTRAST CODING; DUMMY VARIABLE CODING.

**effective dose (ED)** the minimum amount of a drug that is required to produce a specified effect. It is usually expressed in terms of **median effective dose**, or **effective dose 50 (ED<sub>50</sub>; ED-50)**, the dose at which 50% of the nonhuman animal test population has a positive response. In psychotherapy, this criterion is also used to express the number of sessions that are needed for 50% of patients to show a clinically significant change. See also THERAPEUTIC RATIO.

**effectiveness evaluation** the assessment of the degree of success of a program in achieving its goals. The process requires the determination of EVALUATION OBJECTIVES, methods, and CRITERIA OF EVALUATION and the presentation of findings. See also IMPACT ANALYSIS; PROGRAM OUTCOME.

**effectiveness research** reviewing past studies or conducting new studies to evaluate how well current and new treatments work, with the aim of improving the care and treatment of patients. The term is often used synonymously with **clinical utility research**, although some have suggested clinical utility research is a broader term that encompasses studies of additional health-related access to care. Compare EFFICACY RESEARCH.

**effective stimulus** see FUNCTIONAL STIMULUS.

**effect law** see LAW OF EFFECT.

**effector** *n.* **1.** an organ, such as a muscle or a gland, that responds to neural stimulation by producing a particular physical response or initiating a specific physiological event. **2.** a motor nerve ending that triggers activity in tis-

sue cells, such as causing a muscle to contract or a gland to secrete. **3.** in motor control, the part of the body that interacts with the environment during an action (e.g., the hand during a reaching movement).

**effect size** any of various measures of the magnitude or meaningfulness of a relationship between two variables. For example, COHEN'S D shows the number of STANDARD DEVIATION units between two means. Often, effect sizes are interpreted as indicating the practical significance of a research finding. Additionally, in META-ANALYSES, they allow for the computation of summary statistics that apply to all the studies considered as a whole. See also STATISTICAL SIGNIFICANCE.

**effect-size correlation** (symbol:  $r_{\text{effect size}}$ ) an index of the association between an INDEPENDENT VARIABLE and scores on the DEPENDENT VARIABLE without removing any other sources of variation in the data. An effect-size correlation has values from -1 to +1, with absolute values of .1, .3, and .5 representing small, medium, and large relationships, respectively.

**effect variable** see DEPENDENT VARIABLE.

**effeminacy** *n.* female behavior or appearance in a male, which is regarded as not fitting the male GENDER ROLE expectations of society. —**effeminate** *adj.*

**efference copy** see COROLLARY DISCHARGE.

**efferent** *adj.* conducting or conveying away from a central point. Compare AFFERENT.

**efferent motor aphasia** a form of expressive APHASIA marked by difficulty in articulating sound and speech sequences, resulting from lesions in the lower part of the left PREMOTOR AREA of the brain.

**efferent nerve fiber** a nerve fiber that carries impulses from the central nervous system to the periphery. Compare AFFERENT NERVE FIBER.

**efferent neuron** a neuron, such as a MOTOR NEURON, whose axon carries impulses away from the central nervous system toward an EFFECTOR.

**efferent pathway** a NEURAL PATHWAY that carries impulses away from a particular region of the central nervous system toward an EFFECTOR. Examples are MOTOR PATHWAYS. Compare AFFERENT PATHWAY.

**Effexor** *n.* a trade name for VENLAFAXINE.

**efficacy** *n.* **1.** competence in behavioral performance, especially with reference to a person's perception of his or her performance capabilities, or perceived SELF-EFFICACY. **2.** in pharmacology, see DOSE-RESPONSE RELATIONSHIP.

**efficacy research** an empirical study, such as a RANDOMIZED CLINICAL TRIAL, that examines whether a specific treatment or approach works when compared to outcomes in a PLACEBO CONTROL GROUP. Efficacy research is sometimes contrasted with EFFECTIVENESS RESEARCH, which uses NATURALISTIC OBSERVATION to assess whether an approach or treatment is working.

**efficiency** *n.* **1.** a measure of the ability of an organization, work unit, or individual employee to produce the maximum output with a minimum investment of time, effort, and other inputs. Given the same level of output, efficiency increases as the time, effort, and other inputs taken to produce that level decrease. Also called **industrial efficiency**; **organizational efficiency**. See also ORGANIZATIONAL EFFECTIVENESS. **2.** in statistics, the degree to which

an ESTIMATOR uses all the information in a sample to estimate a particular PARAMETER. It is a measure of the optimality of an estimator when comparing various statistical procedures or experimental designs. —**efficient** *adj.*

**efficient cause** in the doctrine of the four CAUSES stated by ARISTOTLE, the agent that initiates a causal process by bringing together the material cause (matter), the formal cause (form), and the final cause (purpose) of a particular effect. One of Aristotle's examples of an efficient cause was a skilled craftsman who creates an artifact; another was a father who begets a child. More generally, the term is used to mean that which produces a given effect by a causal process.

**effluvium** *n.* a supposed flow of physical particles too subtle to be perceived by ordinary sensory mechanisms that is sometimes cited as an explanation for various paranormal and spiritualistic phenomena (Latin, "flowing out"). In the 18th century, the term was widely used to explain such phenomena as magnetism and electricity and later became associated with the idea of ANIMAL MAGNETISM. In spiritualism and parapsychology, it is often linked with the notion that people and things have an invisible AURA. See also REICHENBACH PHENOMENON.

**effort after meaning** the persistent effort to put unfamiliar ideas into more familiar terms in an attempt to comprehend ambiguous or unfamiliar material. See REPEATED REPRODUCTION. [defined by Frederic C. BARTLETT]

**effortfulness** *n.* exertion that demands attentional and other cognitive resources; a feature of many psychological tasks that can be judged reliably by participants. Effortful tasks compete against each other under dual-task conditions (see DUAL-TASK COMPETITION; DUAL-TASK PERFORMANCE), indicating that effortfulness correlates with demands on mental resources. Novel skills often begin in an effortful way but become more automatic with practice (see AUTOMATICITY). Because the sense of effort lacks conscious sensory qualities, it can be considered an experience of FRINGE CONSCIOUSNESS. Functional magnetic resonance imaging (fMRI) studies show major BLOOD OXYGENATION LEVEL-DEPENDENT (BOLD) correlates of mental effort in the ANTERIOR CINGULATE CORTEX and DORSOLATERAL PREFRONTAL CORTEX, with a wider spread of cortical BOLD activity occurring with increased effort. —**effortful** *adj.*

**effortful processing** mental activity that requires deliberation and control and involves a sense of effort, or overcoming resistance. Compare AUTOMATICITY. See also MENTAL EFFORT.

**effort justification** a phenomenon whereby people come to evaluate a particular task or activity more favorably when it involves something that is difficult or unpleasant. The effect is most likely to occur when there are no obvious reasons for performing the task. Because expending effort to perform a useless or unenjoyable task, or experiencing unpleasant consequences in doing so, is cognitively inconsistent (see COGNITIVE DISSONANCE), people are assumed to shift their evaluations of the task in a positive direction to restore consistency. See also COGNITIVE DISSONANCE THEORY; DISSONANCE REDUCTION.

**effortless attention** attention that is active, focused, and task-directed but that involves little or no subjective experience of exertion. It is associated with absorbing activities, such as reading a good book, and with tasks in which there is a balance of challenges with skills, as when a skilled athlete plays sports or a skilled musician plays a mu-

sical instrument. High levels of arousal, control, and relaxation are involved, and there is often a strong sense of FLOW or momentum. See also POSTVOLUNTARY ATTENTION. [described in 2010 by U.S. philosopher and cognitive scientist Brian Bruya (1966– )]

**effort syndrome** the former name for an anxiety reaction now classified as PANIC DISORDER: The symptoms are those of a PANIC ATTACK. This syndrome has been given many names, including cardiac neurosis, hyperkinetic heart syndrome, irritable heart, soldier's heart, Da Costa's syndrome, neurocirculatory asthenia, and hyperventilation syndrome.

**EFP** abbreviation for equine-facilitated psychotherapy. See EQUINE-ASSISTED PSYCHOTHERAPY.

**EFPPA** abbreviation for EUROPEAN FEDERATION OF PROFESSIONAL PSYCHOLOGISTS' ASSOCIATIONS.

**EFT** **1.** abbreviation for EMBEDDED FIGURES TEST. **2.** abbreviation for EMOTION-FOCUSED THERAPY.

**egersis** *n.* intense or extreme wakefulness.

**egg cell** see OVUM.

**ego** *n.* **1.** the SELF, particularly the conscious sense of self (Latin, "I"). In its popular and quasi-technical sense, ego refers to all the psychological phenomena and processes that are related to the self and that comprise the individual's attitudes, values, and concerns. **2.** in psychoanalytic theory, the component of the personality that deals with the external world and its practical demands. More specifically, the ego enables the individual to perceive, reason, solve problems, test reality, and adjust the instinctual impulses of the ID to the demands of the SUPEREGO. See also ANTILIBIDINAL EGO; BODY EGO.

**ego-alien** *adj.* see EGO-DYSTONIC.

**ego analysis** psychoanalytic techniques directed toward discovering the strengths and weaknesses of the EGO and uncovering its DEFENSES against unacceptable impulses. See also EGO STRENGTH; EGO WEAKNESS.

**ego anxiety** in psychoanalytic theory, anxiety caused by the conflicting demands of the EGO, ID, and SUPEREGO. Thus, ego anxiety refers to internal rather than external demands. Compare ID ANXIETY; SUPEREGO ANXIETY. See also SIGNAL ANXIETY.

**ego boundary** **1.** the concept that individuals are able to distinguish between self and not-self. Someone who is said to lack clear ego boundaries blurs the distinction between himself or herself and others by identifying with them too easily and too much. **2.** in psychoanalysis, the boundary between the EGO and the ID (the INTERNAL BOUNDARY) or between the ego and external reality (the EXTERNAL BOUNDARY).

**ego-boundary loss** a condition in which the person lacks a clear sense of where his or her own body, mind, and influence end and where these characteristics in other animate and inanimate objects begin.

**ego-centered network** in SOCIAL NETWORK ANALYSIS, the subset of connections linking the focal individual or node to others in the group being studied. Also called **egocentric network**. Compare GROUP NETWORK.

**egocentric predicament** a problematic condition arising from the assumption that each person's experience is essentially private. The problem is commonly expressed in terms of one or more of the following propositions: (a) It

is difficult to explain how any person could know anything about another person's experience; (b) it is likewise difficult to understand how general knowledge of the external world is possible apart from one's individual experience; and (c) given that experience is essentially private, it is difficult to understand how genuine communication between two people might be possible, since both the content and symbols of any communication will be similarly private. The egocentric predicament is often said to be an unavoidable consequence of the **CARTESIAN SELF**. See also **SOLIPSISM**.

**egocentric speech** speech in which there is no attempt to exchange thoughts or take into account another person's point of view. According to Jean **PIAGET**, a child's use of egocentric speech prevails until the 7th or 8th year of age and then disappears as the child develops **SOCIAL SPEECH** geared to others' needs. According to Lev **VYGOTSKY**, however, egocentric speech is in part vocalized social speech geared to solving problems and develops into **INNER LANGUAGE**. See also **PRIVATE SPEECH**.

**egocentrism** *n.* **1.** the tendency to emphasize one's own needs, concerns, and outcomes rather than those of others. Also called **egocentricity**. See also **IDIOCENTRIC**. Compare **SOCIOCENTRISM**. **2.** in **PIAGETIAN THEORY**, the tendency to perceive the situation from one's own perspective, believing that others see things from the same point of view as oneself and that events will elicit the same thoughts, feelings, and behavior in others as in oneself. —**egocentric** *adj.*

**ego control** a personality characteristic consisting of the tendency to inhibit the expression of emotional and motivational impulses, ranging from undercontrol to overcontrol of such impulses.

**ego defect** in psychoanalytic theory, the absence or limitation of **EGO FUNCTIONS**. The prime function of the ego is perception of reality and adjustment to it. A defect in this function can be either the target of treatment or a deficiency that slows recovery.

**ego defense** in psychoanalytic theory, the use of **DEFENSE MECHANISMS** to protect the **EGO** against anxiety arising from threatening impulses and conflicts as well as external threats.

**ego-defensive function of an attitude** the role an attitude can play in enhancing or maintaining the self-esteem of the person holding that attitude. For example, people may hold very positive attitudes toward their social group as a means of maintaining their positive self-regard. See also **FUNCTIONAL APPROACH TO ATTITUDES**.

**ego depletion** a state marked by reduction in one's capacity for **VOLITION** (initiative, choice, and self-regulation), especially in the context of **SELF-REGULATORY RESOURCES THEORY**. Ego depletion is typically temporary and is restored by rest, positive emotions, or other means.

**ego development** **1.** the infant's emerging consciousness of being a separate individual distinct from others, particularly the parents. **2.** in **CLASSICAL PSYCHOANALYSIS**, the process in which a part of the **ID** is gradually transformed into the **EGO** as a result of environmental demands. It involves a preconscious stage, in which the ego is partly developed, and a subsequent conscious stage, in which such ego functions as reasoning, judging, and reality testing come to fruition and help to protect the individual from internal and external threats. Also called **ego formation**.

**ego-dystonic** *adj.* in psychoanalytic theory, describing

impulses, wishes, or thoughts that are unacceptable or repugnant to the **EGO** or self. Also called **ego-alien**. Compare **EGO-SYNTONIC**.

**ego-dystonic homosexuality** the condition of being distressed about an inability to be aroused by the opposite sex. There is a sustained pattern of same-sex arousal that the person explicitly states is unwanted and persistently distressing. The condition is frequently accompanied by feelings of loneliness, shame, anxiety, and depression.

**ego formation** see **EGO DEVELOPMENT**.

**ego functions** in psychoanalytic theory, the various activities of the **EGO**, including perception of the external world, self-awareness, problem solving, control of motor functions, adaptation to reality, memory, reconciliation of conflicting impulses and ideas, and regulation of affect. The ego is frequently described as the executive agency of the personality, working in the interest of the **REALITY PRINCIPLE**. See also **SECONDARY PROCESS**.

**ego-ideal** *n.* in psychoanalytic theory, the part of the **EGO** that is the repository of positive identifications with parental goals and values that the individual genuinely admires and wishes to emulate, such as integrity and loyalty, and that acts as a model of how he or she wishes to be. As new identifications are incorporated in later life, the ego-ideal may develop and change. In his later theorizing, Sigmund **FREUD** incorporated the ego-ideal into the concept of the **SUPEREGO**. Also called **self-ideal**.

**ego identity** **1.** in psychoanalytic theory, the experience of the self as a recognizable, persistent entity resulting from the integration of one's unique **EGO-IDEAL**, life roles, and ways of adjusting to reality. **2.** the gradual acquisition of a sense of continuity, worth, and integration that Erik **ERIKSON** believed to be the essential process in personality development. See **ERIKSON'S EIGHT STAGES OF PSYCHOSOCIAL DEVELOPMENT**. See also **IDENTITY**.

**ego integration** in psychoanalytic theory, the process of organizing the various aspects of the personality, such as drives, attitudes, and aims, into a balanced whole. It is considered a strong indicator of psychological health and resiliency.

**ego integrity versus despair** see **INTEGRITY VERSUS DESPAIR**.

**ego involvement** the extent to which a task or other target of judgment is perceived as psychologically significant or important to one's self-esteem. It is presumed to be a determinant of **ATTITUDE STRENGTH**. Also called **attitudinal involvement**; **personal involvement**; **self-relevance**. See also **CENTRALITY OF AN ATTITUDE**; **IMPORTANCE OF AN ATTITUDE**.

**egoism** *n.* a personality characteristic marked by selfishness and behavior based on self-interest with disregard for the needs of others. See also **EGOTISM**. —**egoistic** *adj.*

**egoistic helping** a form of **HELPING** behavior in which the goal of the helper is to increase his or her positive feelings or to receive some other benefit. For example, someone may make a large donation to an institution with the expressed interest of having a building named in his or her honor.

**egoistic relative deprivation** see **RELATIVE DEPRIVATION**.

**egoistic suicide** one of four types of suicide proposed in 1897 by Émile **DURKHEIM**, involving the perception that

one has failed to live up to the values and norms of society. Consequently, the individual withdraws from social groups and feels alienated from others. Thus lacking the social integration Durkheim viewed as essential to a healthy, meaningful life, the person becomes overwhelmed by independence and ultimately takes his or her own life. See also ALTRUISTIC SUICIDE; ANOMIC SUICIDE; FATALISTIC SUICIDE.

**egomania** *n.* extreme, pathological preoccupation with oneself, often characterized by an exaggerated sense of one's abilities and worth. This includes the tendency to be totally self-centered, callous with regard to the needs of others, and interested only in the gratification of one's own impulses and desires. See also EGOPATHY. —**egomaniac** *n.*

**ego orientation** a motivational focus on winning a game or achieving superior status in a social comparison. Ego orientation is a component of ACHIEVEMENT GOAL THEORY.

**egopathy** *n.* hostile attitudes and actions stemming from an exaggerated sense of self-importance, often manifested by a compulsion to deprecate others. See also EGOMANIA.

**ego psychology** in psychoanalysis, an approach that emphasizes the functions of the EGO in controlling impulses, planning, and dealing with the external environment. Ego psychology differs from CLASSICAL PSYCHOANALYSIS in proposing that the ego contains a CONFLICT-FREE SPHERE of functioning and that it has its own store of energy with which to pursue goals that are independent of instinctual wishes. In addition, ego psychology theories extend beyond classical psychoanalytic drive theory by combining a biological and psychological view of the individual's development with a recognition of the complex influences of sociocultural dimensions on individual functioning. The scope of psychoanalysis is thereby broadened from the study of unconscious events and psychopathology to exploration of adaptive processes within the matrix of interpersonal, familial, and sociocultural forces. Compare ID PSYCHOLOGY.

**ego resiliency** a personality characteristic consisting of the ability to vary, in an adaptive manner, the degree to which one inhibits or expresses emotional impulses, depending on social demands.

**ego resistance** see REPRESSION RESISTANCE.

**ego-splitting** *n.* **1.** in psychoanalytic theory, the EGO's development of opposed but coexisting attitudes toward a phenomenon, whether in the normal, neurotic, or psychotic person. In the normal context, ego-splitting can be seen in the critical attitude of the self toward the self; in neuroses, contrary attitudes toward particular behaviors are fundamental; and in psychoses, ego-splitting may produce an "observing" part of the individual that sees and can report on delusional phenomena. **2.** in the OBJECT RELATIONS THEORY of Melanie KLEIN and British psychoanalyst W. Ronald D. Fairbairn (1889–1964), fragmentation of the EGO in which parts that are perceived as bad are split off from the main ego as a mechanism of protection. See also SPLITTING.

**ego state** in psychoanalytic theory, an integrated state of mind that determines the individual's relationships to the environment and to other people.

**ego strength** in psychoanalytic theory, the ability of the EGO to maintain an effective balance between the inner impulses of the ID, the SUPEREGO, and outer reality. An individual with a **strong ego** is thus one who is able to tolerate

frustration and stress, postpone gratification, modify selfish desires when necessary, and resolve internal conflicts and emotional problems before they lead to NEUROSIS. Compare EGO WEAKNESS.

**ego stress** any situation, external or internal, that challenges the individual and produces stress (tension, anxiety, etc.) requiring adaptation by the EGO. Ego stress is sometimes expressed as such defensive reactions as DISSOCIATION, SOMATIZATION, or panic.

**ego structure** in psychoanalytic theory, the organization of the EGO.

**ego-syntonic** *adj.* compatible with the EGO or conscious SELF-CONCEPT. Thoughts, wishes, impulses, and behavior are said to be ego-syntonic when they form no threat to the ego and can be acted upon without interference from the SUPEREGO. Compare EGO-DYSTONIC. [first described in 1914 by Sigmund FREUD]

**egotheism** *n.* identification of oneself with a deity. See also JEHOVAH COMPLEX; MESSIAH COMPLEX.

**egotism** *n.* excessive conceit or a preoccupation with one's own importance. See also EGOISM. —**egotistic** *adj.*

**ego transcendence** an ALTERED STATE OF CONSCIOUSNESS marked by the conviction that one is beyond concern with the self and thus able to perceive reality with greater objectivity.

**ego weakness** in psychoanalytic theory, the inability of the EGO to control impulses and tolerate frustration, disappointment, or stress. The individual with a **weak ego** is thus one who suffers from anxiety and conflicts, makes excessive use of DEFENSE MECHANISMS or uses immature defense mechanisms, and is likely to develop neurotic symptoms. Compare EGO STRENGTH.

**EHA** abbreviation for EDUCATION FOR ALL HANDICAPPED CHILDREN ACT.

**EHR** abbreviation for ELECTRONIC HEALTH RECORD.

**eidetic image** a clear, specific, high-quality mental image of a visual scene that is retained for a period (seconds to minutes) after the event. Individuals who experience eidetic imagery (called **eidetikers**) continue to see a visual scene and are able to report on its details even though they know the stimulus is no longer there. This type of imagery is more common in children than in adults.

**eigenvalue** (symbol:  $\lambda$ ) *n.* a numerical index, commonly used in FACTOR ANALYSIS and PRINCIPAL COMPONENTS ANALYSIS, that indicates the portion of the total variance among several correlated variables that is accounted for by a more basic, underlying variable or construct. An eigenvalue may be computed as the sum of the squared FACTOR LOADINGS for all the variables. Eigenvalues are of central importance in linear algebra (i.e., matrix algebra).

**eigenvector** *n.* in linear algebra, any vector within a  $p$ -dimensional space that is associated with a given TRANSFORMATION and is left invariant (except for stretching or shrinking) by that transformation. Eigenvectors are important in MULTIVARIATE statistics; their values are applied to variables to form a LINEAR combination that synthesizes much of the variance in a set of variables.

**Eigenwelt** *n.* in the thought of German philosopher Martin Heidegger (1889–1976), that aspect of DASEIN (being-in-the-world) that is constituted by a person's relationship



to the self. The term was introduced into the vocabulary of psychology chiefly through the work of Swiss existential psychologist Ludwig Binswanger (1881–1966). Compare MITWELT; UMWELT. [German, literally: “own world”]

**eighth cranial nerve** see AUDITORY NERVE; VESTIBULOCOCHLEAR NERVE.

**80:20 rule** see PARETO PRINCIPLE.

**Einstellung** *n.* an expectation or readiness associated with particular stimuli. It may foster a degree of mental inflexibility by instilling a tendency to respond to a situation in a certain way. For example, a person who successfully solves a series of problems using one formula may apply that same formula to a new problem solvable by a simpler method. The contemporary term for this concept is MENTAL SET. [German, “attitude”]

**either–or fallacy** a type of informal FALLACY or persuasive technique in which an argument is constructed so as to imply the necessity of choosing one of only two alternatives. This ignores the possibility that (a) the alternatives may not be mutually exclusive and (b) there may be other equally viable alternatives. For example, the argument that the cause of behavior is either nature or nurture ignores the possibility that both might play a causal role or that human agency might also be part of the explanation.

**either–or thinking** a less common name for DICHOTOMOUS THINKING.

**ejaculation** *n.* the automatic expulsion of semen and seminal fluid through the penis resulting from involuntary and voluntary contractions of various muscle groups, normally associated with ORGASM. See also PREMATURE EJACULATION; RETROGRADE EJACULATION. —**ejaculatory** *adj.*

**ejaculatory duct** a duct on either side of the prostate gland, formed by union of the VAS DEFERENS and the efferent duct of the SEMINAL VESICLE. The ejaculatory ducts converge in the prostate gland and empty into the urethra at a point below the urinary bladder.

**Ekbom’s syndrome** a sense of uneasiness, twitching, or restlessness that occurs in the legs when at rest (i.e., sitting or lying) or after retiring for the night. The cause is unknown, but it has been associated with a deficiency of iron, vitamin B<sub>12</sub>, or folic acid; nerve damage associated with rheumatoid arthritis, kidney failure, or diabetes; and the use of such drugs as lithium, anticonvulsants, antidepressants, and beta blockers. Also called **restless-legs syndrome**; **tachyathetosis**; **Wittmaack–Ekbom syndrome**. [Karl-Axel Ekbom (1907–1977), Swedish physician]

**EKG** abbreviation for ELECTROCARDIOGRAM.

**elaborated code** a linguistic REGISTER typically used in formal situations (e.g., academic discourse), characterized by a wide vocabulary, complex constructions, and unpredictable collocations of word and idea. This contrasts with the **restricted code** used in much informal conversation, which is characterized by a narrow vocabulary, simple constructions, and predictable ritualized forms, with much reliance on context and nonverbal communication to convey meaning.

**elaboration** *n.* **1.** the process of interpreting or embellishing information to be remembered or of relating it to other material already known and in memory. The LEVELS-OF-PROCESSING MODEL OF MEMORY holds that the level of elaboration applied to information as it is processed affects

both the length of time that it can be retained in memory and the ease with which it can be retrieved. See ACTIVATION–ELABORATION. See also CHUNKING; DEEP PROCESSING; RECODING. **2.** the process of scrutinizing and thinking about the central merits of attitude-relevant information. This process includes generating inferences about the information, assessing its validity, and considering the implications of evaluative responses to the information. See also CENTRAL ROUTE TO PERSUASION; ELABORATION-LIKELIHOOD MODEL; PERIPHERAL ROUTE TO PERSUASION. —**elaborate** *vb.*

**elaboration-likelihood model (ELM)** a theory of PERSUASION postulating that attitude change occurs on a continuum of elaboration and thus, under certain conditions, may be a result of relatively extensive or relatively little scrutiny of attitude-relevant information. The theory postulates that ATTITUDE STRENGTH depends on the amount of elaboration on which the attitude is based and proposes five possible mechanisms by which a variable may influence the persuasion process (i.e., serving as an ARGUMENT, BIASING FACTOR, DETERMINANT OF ELABORATION, PERIPHERAL CUE, or SELF-VALIDATION FACTOR). [first proposed by U.S. psychologists Richard E. Petty (1951– ) and John T. Cacioppo (1951– )]

**elaborative rehearsal** an ENCODING STRATEGY to facilitate the formation of memory by linking new information to what one already knows. For instance, when trying to remember that someone is named George, one might think of five other things one knows about people named George. See DEPTH-OF-PROCESSING HYPOTHESIS; ELABORATION.

**élan vital** in the thought of French philosopher Henri Bergson (1859–1941), a vital force or energy that animates living organisms, including humans, and propels life toward some end through the process of evolution. Also called **life force**. See VITALISM. [French, literally: “vital impetus”]

**elation** *n.* a state of heightened joy, exaggerated optimism, and restless excitement. In extreme or prolonged forms, it is a symptom of a number of disorders; in particular, it may be drug induced or a symptom of acute MANIA, but it is also found in GENERAL PARESIS, schizophrenia, and psychosis with brain tumor. —**elated** *adj.*

**Elavil** *n.* a trade name for AMITRIPTYLINE.

**ELBW** abbreviation for extremely LOW BIRTH WEIGHT.

**Eldepryl** *n.* a trade name for SELEGILINE.

**elder abuse** harm to an adult aged 65 or older caused by another individual. The harm can be physical (violence), sexual (nonconsensual sex), psychological (causing emotional distress), material (improper use of belongings or finances), or neglect (failure to provide needed care).

**elder care** the provision of health-related services, supportive personal care, supervision, and social services to an older adult requiring assistance with daily living because of physical disabilities, cognitive impairments, or other conditions. Elder care may be home based or community based (via ASSISTED LIVING, RESIDENTIAL CARE, or a SKILLED NURSING FACILITY).

**elder neglect** the failure of a caregiver to provide needed care to an older adult. Extreme neglect in the form of abandonment can occur when the caregiver deserts the older adult in need. See ELDER ABUSE.

**elderspeak** *n.* adjustments to speech patterns, such as speaking more slowly or more loudly, shortening sen-

tences, or using limited or less complex vocabulary, that are sometimes made by younger people when communicating with older adults. These simplified speech patterns are implicitly based on the assumption that older adults are cognitively impaired or incapable of understanding normal speech.

**elective** *n.* an educational course, chosen from a number of alternatives, that is not required for a particular program of study. Electives are courses that students are permitted to choose beyond their core and major requirements and typically include the fine arts, physical education, and courses from foundational areas outside the student's primary focus of study.

**elective abortion** the planned, premature termination of a pregnancy by removal of the fetus, either through surgery or the use of medication. See ABORTION.

**elective affinity** a feeling of sympathy, attraction, or connection to a particular person, thing, or idea. The term was originally used to refer to certain chemical processes but took on a new figurative sense after the publication in 1809 of *The Elective Affinities*, a novel by Johann Wolfgang von Goethe (1749–1832). It is often used to mean those preferences and common feelings that constitute a cultural or national identity or that distinguish groups and subgroups from one another.

**elective bilingualism** see ELITE BILINGUALISM.

**elective mutism** see SELECTIVE MUTISM.

**Electra complex** the female counterpart of the OEDIPUS COMPLEX, involving the daughter's love for her father, jealousy toward the mother, and blame of the mother for depriving her of a penis. Although Sigmund FREUD rejected the phrase, using the term *Oedipus complex* to refer to both boys and girls, many modern textbooks of psychology propagate the mistaken belief that *Electra complex* is a Freudian term. The name derives from the Greek myth of Electra, daughter of Agamemnon and Clytemnestra, who seeks to avenge her father's murder by persuading her brother Orestes to help her kill Clytemnestra and her lover Aegisthus. [defined by Carl JUNG]

**electrical activity of the brain** spontaneous or evoked changes in electrical brain potentials. Spontaneous electrical activity of the brain was discovered by British physiologist Richard Caton (1842–1926) and others around 1875 but was not explored in detail until the development of sophisticated electronic recording devices in the 1930s. The oscillations may vary in frequency from 1 to more than 50 Hz, and from 50 to 200 mV in amplitude, as recorded by electrodes attached to the scalp. See also BRAIN WAVES.

**electrical intracranial stimulation** see INTRACRANIAL STIMULATION.

**electrical self-stimulation of the brain (ESSB)** see INTRACRANIAL STIMULATION.

**electrical stimulation** the stimulation of neurons by electrical energy, as in INTRACRANIAL STIMULATION.

**electrical stimulation of the cortex** the use of electric charges introduced through electrodes implanted in the brain cells of the cerebral cortex to produce a desired effect. In animal experiments, a reward or punishment effect depends upon the site of the electrodes and the intensity of the stimulation. Electrical stimulation of the cortex

has also been used in humans to promote recall and as therapy.

**electrical synapse** a type of connection in which neurons are not separated by a cleft but instead are joined by a GAP JUNCTION so that the nerve impulse is transmitted across without first being translated into a chemical message.

**electrical transcranial stimulation (ETS)** see ELECTROSLEEP THERAPY.

**electric ophthalmia** see OPHTHALMIA.

**electric potential** see POTENTIAL.

**electric sense** the ability of some species to generate and sense electric fields within their environment. Specialized muscle cells can be coupled to generate a significant electric field, and specialized neural receptors or other organs can detect changes in electric fields. Sea lampreys and eels generate an electric current that is used to stun and disable their prey, but these animals do not appear to sense electric fields. Dogfish sharks hide in the sand and use specialized receptors called **Lorenzini ampullae** to detect electric currents from prey. Several families of fish found in the tropics both generate and detect electric signals, adjusting signal production to avoid jamming with nearby fish and to change discharge rates to communicate aggression or reproductive status.

**electric shock method** see ELECTROCONVULSIVE THERAPY; ELECTROTHERAPY.

**electric sink** a device or region that collects or dissipates electrical energy; the opposite of an electric source.

**electrocardiogram (ECG; EKG)** *n.* a wavelike tracing, either printed or displayed on a monitor, that represents the electrical impulses of the conduction system of the heart muscle as it passes through a typical cycle of contraction and relaxation. The electrical currents are detected by electrodes attached to specific sites on the patient's chest, legs, and arms and recorded by an instrument, the **electrocardiograph**. In the procedure, which is called **electrocardiography**, the wave patterns of the electrocardiogram reveal the condition of the heart chambers and valves to provide an indication of possible cardiac problems.

**electrocardiographic effect** a change in the electrical activity of the heart as recorded by an electrocardiogram, especially a change associated with administration of a drug. Prolongation of segments of the cardiac cycle, particularly the Q-T interval (the period of ventricular contraction), may be observed with excess doses of numerous antipsychotics and tricyclic antidepressants. A malignant form of electrocardiographic change is an arrhythmia known as **torsades de pointes** (French, literally: "twisting of the points"), so called because of its characteristic outline on an electrocardiograph tracing. Torsades de pointes syndrome may result from drug interactions increasing the serum concentration of certain drugs or from an abnormal reaction to single drugs (e.g., pimozide) in susceptible individuals.

**electrocochleography (ECoChG)** *n.* see ELECTROPHYSIOLOGIC AUDIOMETRY.

**electroconvulsive therapy (ECT)** a controversial treatment in which a seizure is induced by passing a controlled, low-dose electric current (an **electroconvulsive shock; ECS**) through one or both temples. The patient is

prepared by administration of an anesthetic and injection of a muscle relaxant. An electric current is then applied for a fraction of a second and immediately produces a two-stage seizure (tonic and clonic). ECT may be bilateral or unilateral (usually of the right hemisphere). It is most often used to treat patients with severe endogenous depression who fail to respond to antidepressant drugs. Benefits are temporary, and the mechanisms of therapeutic action are unknown. Also called **electroconvulsive shock therapy (EST)**; **electroshock therapy (EST)**. See also BRIEF STIMULUS THERAPY; ECT-INDUCED AMNESIA. [introduced in 1938 by Italian psychiatrists Ugo Cerletti (1877–1963) and Lucio Bini (1908–1964)]

**electrocorticography (ECOG)** *n.* a method of studying the electrical activity of the brain using electrodes placed directly on the cerebral cortex, rather than on the scalp as in ELECTROENCEPHALOGRAPHY. The resulting record of brain-wave patterns is called an **electrocorticogram**.

**electrode** *n.* an instrument with a positive-pole cathode and a negative-pole anode used to stimulate biological tissues electrically or record electrical activity in these tissues. Also called **bipolar electrode**. See also MICROELECTRODE.

**electrode placement** the positioning of electrodes on the scalp or in neurons to record changes of electric potential caused by neural activity. In nonhuman animal research studies and some human studies, needlelike MICROELECTRODES are placed in specific brain cells.

**electrodermal changes** changes in the skin that alter its electrical conductivity. See GALVANIC SKIN RESPONSE; SKIN CONDUCTANCE.

**electrodermal response (EDR)** see GALVANIC SKIN RESPONSE.

**electrodiagnosis** *n.* the application of an electric current to nerves and muscles for diagnostic purposes. See ELECTROENCEPHALOGRAPHY; ELECTROMYOGRAPHY.

**electroencephalographic audiometry** the measurement of hearing sensitivity with the use of ELECTROENCEPHALOGRAPHY. Gross measures are obtained from changes in brain-wave patterns when above-threshold sound stimuli are introduced.

**electroencephalography (EEG)** *n.* a method of studying BRAIN WAVES using an instrument (**electroencephalograph**) that amplifies and records the electrical activity of the brain through electrodes placed at various points on the scalp. The resulting record (**electroencephalogram [EEG]**) of the brain-wave patterns is frequently used in studying sleep, monitoring the depth of anesthesia, diagnosing epilepsy and other brain disorders or dysfunction, and studying normal brain function. Also called **cognitive electrophysiology**. See also ELECTRICAL ACTIVITY OF THE BRAIN.

**electrolyte imbalance** abnormal levels of one or more **electrolytes**, the ions of chemicals that play a vital role in fluid balance, acid–base balance, and other functions of body cells. Electrolytes that may be affected include sodium, which is needed for water regulation and normal nerve and muscle function; potassium, which is necessary for acid–base balance; and calcium, which is essential for normal blood and muscle functions.

**electromagnetic spectrum** the range of wavelengths of electromagnetic radiation from gamma rays (very short waves) to radio waves (very long waves). The human eye is

sensitive to only a narrow range of wavelengths of approximately 400 to 700 nm. See SPECTRUM.

**electromyography (EMG)** *n.* the recording (via an instrument called an **electromyograph**) of the electrical activity of muscles through electrodes placed in or on different muscle groups. This procedure is used in the diagnosis of neuromuscular diseases, such as myasthenia gravis or amyotrophic lateral sclerosis. A record of the electric potentials is called an **electromyogram (EMG)**.

**electronarcosis** *n.* a form of ELECTROCONVULSIVE THERAPY (ECT) in which the amount of electricity, the duration of the shock, or both is sufficient to generate the tonic phase of a seizure but either limits or prevents the clonic phase. Electronarcosis is a generally less effective alternative to standard ECT and is more likely to cause side effects. The technique has also been used to induce relaxation and sleep. See ELECTROSLEEP THERAPY.

**electronic aid to daily living** see ENVIRONMENTAL CONTROL DEVICE.

**electronic brainstorming** the use of computer-based procedures, such as online discussions and real-time e-mail communication, to generate unique ideas and solutions to problems. If such sessions are to adhere to the principles of BRAINSTORMING used in face-to-face groups, then they will explicitly encourage expressiveness, building on others' ideas and maximizing the number of ideas generated, and will discourage evaluation of any idea that is offered.

**electronic health record (EHR)** a digital record of an individual's health-related information that is created, gathered, managed, and consulted by authorized health care staff. The use of health information technology to maintain health records allows for improved patient care by facilitating care coordination and widespread data exchange among providers and by enhancing patients' access to their own records.

**electronic nose** a device that is capable of sensing gases, especially odors. Electronic noses are used commercially to detect malodorous foodstuffs, for example, and scientifically in modeling the olfactory system.

**electronystagmography** *n.* a neurological test that measures movements of the eye muscles, used to confirm the presence of NYSTAGMUS. A graphical recording of eye movements is generated and is used to evaluate dizziness, vertigo, and the function of the AUDITORY NERVE and the SEMICIRCULAR CANALS.

**electrooculography (EOG)** *n.* the process of recording the electric potential that exists between the front and back of the eye as fixation moves between two points. The graphic representation of the difference in this potential is called an **electrooculogram (EOG)**.

**electroolfactography (EOG)** *n.* the process of recording the response of olfactory nerve endings to various stimulating ODORANTS. It can be used to diagnose olfactory disorders, such as ANOSMIA, after injury or disease affecting the olfactory receptors. The recording itself is called an **electroolfactogram (EOG)**.

**electrophysiologic audiometry** a large class of procedures for measuring auditory function that use electrical responses evoked by sound stimulation. Included in this class of procedures are averaged ELECTROENCEPHALOGRAPHIC AUDIOMETRY and **electrocochleography (ECochG)**, which measures electrical activity in the inner ear. Responses include the BRAINSTEM AUDITORY EVOKED RESPONSE.

**electrophysiology** *n.* the study of the electrical properties and processes of tissues. This includes such specialized subfields as electrocardiography, ELECTROENCEPHALOGRAPHY, ELECTROMYOGRAPHY, ELECTROOCULOGRAPHY, and ELECTRORETINOGRAPHY. —**electrophysiologic** or **electrophysiological** *adj.*

**electroplethysmography** *n.* a test or testing procedure based on the measurement of blood volume or volume changes in organs, organ systems, or circulation.

**electroretinography** *n.* a recording (via an instrument called an **electroretinograph**) of the electrical activity of the retina during visual stimulation using electrodes placed on the anesthetized surface of the eye. Different segments of the recorded waveform (called an **electroretinogram** [ERG]) correspond to activity in the different cells and layers of the retina.

**electroshock therapy (EST)** see ELECTROCONVULSIVE THERAPY.

**electrosleep therapy** a former treatment for depression, chronic anxiety, and insomnia by inducing a state of relaxation or sleep through low-voltage **electrical transcranial stimulation (ETS)**; or **cranial electrical stimulation, CES**), a technique developed in the Soviet Union in the 1940s.

**electrostimulation** *n.* an aversive, or negative-reinforcement, technique involving administration of an electric shock. See also AVERSION THERAPY.

**electrostimulation of the brain (ESB)** electrical stimulation of a specific area of the brain to determine the functions served by that area.

**electrostimulator** *n.* an instrument that delivers controlled electrical stimulation to a specific area of the body.

**electrotactile aid** see TACTILE SENSORY AID.

**electrotherapy** *n.* any therapeutic measure that involves the application of an electric current to the body.

**electrotonic conduction** the passive flow of a change in electric potential along a nerve or muscle membrane. It occurs in response to stimulation that is inadequate to trigger an actively propagated ACTION POTENTIAL (i.e., sub-threshold stimulation) but instead generates DEPOLARIZATION in a small area of membrane. This localized depolarization travels to neighboring areas via the drifting fluid within the cell, rapidly attenuating as it spreads.

**electrotonus** *n.* the change in the excitability, conductivity, or electrical status of a nerve or muscle following application of an electric current.

**elegant solution** a solution to a question or a problem that achieves the maximally satisfactory effect with minimal effort, materials, or steps. In terms of theories or models of behavior, an elegant solution would be one that satisfies the requirements of the LAW OF PARSIMONY. See also OCCAM'S RAZOR.

**element** *n.* **1.** a subunit or constituent part of something, often with the connotation that it cannot be reduced further. **2.** a member of a set, class, or group. For example, in the set of all PhD-conferring American universities, any one of those American universities that confer the PhD is an element of the set. See also SET THEORY. **3.** one of the 118 officially identified chemical substances, of which 92 occur naturally, that cannot be reduced to simpler fragments by chemical means alone.

**elementarism** *n.* **1.** in scientific theory, the procedure of explaining a complex phenomenon by reducing it to simple, elemental units. **2.** the belief that such a procedure is appropriate to a science dealing with psychological phenomena, which are explained by reduction to simple elements, such as basic sensations or elementary reflexes. Both psychological STRUCTURALISM and BEHAVIORISM have been described as elementarist approaches. Also called **elementalism**; **elementism**. See also ATOMISM; MOLECULAR. —**elementarist** *adj.*

**elementary cognitive task (ECT)** a simple laboratory test designed to measure participants' response times as they perform very easy tasks and make what are presumed by the researchers to be simple decisions. Examples of elementary cognitive tasks include selecting the "odd man out" among three or more alternatives, identifying whether a single presented number (or letter) was or was not part of a previously presented set, and indicating whether or not a statement agrees with a pictorial representation. The low-level, or basic, processes measured by elementary cognitive tasks are believed to be closely related to physiological functioning and thus primarily under the influence of endogenous, inherited factors.

**element-level compatibility effect** see STIMULUS-RESPONSE COMPATIBILITY.

**Elephant Man's disease** a disease named after a 19th-century patient, Joseph Carey Merrick, who was known as "the Elephant Man"; although NEUROFIBROMATOSIS Type 1 was formerly suggested as the likely cause, PROTEUS SYNDROME is now thought to be a more probable cause.

**elevated maze** a maze consisting of paths formed by elevated, flat runways without side walls, placed far enough apart that an individual within it cannot jump across the gaps. An incorrect choice within the maze leads to a cul-de-sac, signified by the end of an arm and open space. It is one of two primary types of maze, the other being an ALLEY MAZE.

**elevated mood** a heightened mood characterized by feelings of euphoria, elation, and well-being.

**elevated plus maze** an apparatus used as a test of anxiety in laboratory rats and mice. It is a cross-shaped maze that is raised from the ground and has two enclosed arms and two open arms. Because of a natural fear of heights, rodents typically spend more time in the enclosed arms than in the open arms. However, if injected with anxiolytic (anxiety) drugs, rodents will increase the amount of time they spend in the open arms.

**elevator phobia** a persistent and irrational fear of elevators, which may represent fear of heights (ACROPHOBIA), fear of being enclosed (CLAUSTROPHOBIA), or fear of having panic symptoms (e.g., as occurs with AGORAPHOBIA).

**eleventh cranial nerve** see ACCESSORY NERVE.

**elicitation** *n.* the reliable production of a particular response by a stimulus. Salivation following food in the mouth is an example of elicitation. —**elicit** *vb.*

**elicited behavior** see RESPONDENT BEHAVIOR.

**elimination by aspects** a theory of decision making holding that a choice is reached through a series of eliminations. At each stage, the decision maker selects an attribute or aspect perceived to be important and eliminates alternatives lacking that attribute. The next most important attribute is then selected, and the process continues

until only one alternative is left. [introduced in 1972 by Amos TVERSKY]

**elimination disorder** any disorder related to defecation or urination, usually occurring in children (or individuals of equivalent mental age), that is not due to the use of substances or a general medical condition. See ENCOPRESIS; ENURESIS.

**elimination drive** the urge to expel feces or urine from the body. Psychological factors have considerable effects on these drives; for example, tension and fright may precipitate involuntary voiding of both the bladder and bowel. See DEFECATION REFLEX; ENCOPRESIS; ENURESIS; MICTURITION REFLEX.

**eliminativism** *n.* the view that mental states, such as beliefs, feelings, and intentions, are not necessary to a scientific account of human behavior. These are regarded as the stuff of FOLK PSYCHOLOGY, informal and intuitive concepts by which human beings offer accounts of their behaviors. According to the eliminativist view, when truly scientific psychology progresses far enough to replace folk psychology, the explanatory language of mental states will probably be replaced by a language of biological states. Also called **eliminative materialism**. See also IDENTITY THEORY; REDUCTIONISM. Compare CONSCIOUS MENTALISM; MENTALISM. —**eliminativist** *adj.*

**elision** *n.* in speech, the omission of certain sounds in particular phonological environments, as when an unstressed vowel occurs at the beginning or end of a word (e.g., *How d'you do*).

**elite athlete** most often, an athlete who competes at a national, international, or professional level, although the term is sometimes used colloquially to refer to accomplished athletes in nonprofessional contexts.

**elite bilingualism** a type of BILINGUALISM attained through formal study of the second language, which involves literacy in that language and is considered a sign of high social status and education. Also called **elective bilingualism**. Compare FOLK BILINGUALISM. [first described by U.S. sociolinguist Joshua A. Fishman (1926– )]

**ellipsis** *n.* **1.** a linguistic structure in which a word or words normally needed for reasons of grammar or logic are omitted. This may be done for the sake of brevity, emphasis, or both, as, for example, in the reply *Gone* to the question *Where is she?* See also DELETION. **2.** in psychoanalysis, a form of PARAPRAXIS involving the omission of significant ideas in FREE ASSOCIATION or DREAMS. Efforts are made to recover these ideas during analysis. —**elliptical** *adj.*

**Ellis–van Creveld syndrome** an autosomal recessive disorder (see RECESSIVE ALLELE) marked by polydactyly (extra fingers or toes); poorly formed hair, teeth, and nails; and DWARFISM. Associated abnormalities may include genital anomalies and heart defects. A high incidence of the disorder is seen among the Old Order Amish of Pennsylvania. Also called **chondroectodermal dysplasia**. [Richard White Bernard Ellis (1902–1966), British physician; Simon van Creveld (1894–1971), Dutch pediatrician]

**ELM** abbreviation for ELABORATION-LIKELIHOOD MODEL.

**elopement** *n.* **1.** the departure of a patient from a psychiatric hospital or unit without permission. **2.** in law enforcement, slang for the escape of an inmate.

**ELSI Program** the Ethical, Legal, and Social Implications Program of the HUMAN GENOME PROJECT. This pro-

gram aims to advance the study of social, psychological, and cultural issues and problems raised by advances in the understanding of the human genome and related changes in the diagnosis and treatment of inherited susceptibility to illness.

**EMA** abbreviation for ECOLOGICAL MOMENTARY ASSESSMENT.

**emancipated minor** an individual who has not yet reached the legal age of adulthood (18 in most states) but who is self-supporting, exercises general control over his or her life, and may claim the legal rights of an adult.

**emancipation disorder** a disorder in which an adolescent or young adult experiences conflict between a desire for freedom from parental control and the responsibilities of independence. Symptoms may include indecisiveness, homesickness, excessive dependence on peers, and paradoxical overdependence on parental advice. Also called **emancipation disorder of adolescence and early adulthood**.

**emasculation** *n.* castration or, by extension, the reduction or removal of a man's sense of MASCULINITY, as by depriving him of a culturally sanctioned male role or the exercise of male privilege. —**emasculate** *vb.*

**embalming fluid** **1.** slang for liquid PCP or a liquid containing PCP. See FRY. **2.** the mixture of formaldehyde and other chemicals used to preserve dead bodies. This mixture may be a drug of abuse, although the actual frequency of such abuse is unknown, and many investigators believe that the substance called “embalming fluid” by drug dealers or users is nearly always PCP.

**embarrassment** *n.* a SELF-CONSCIOUS EMOTION in which a person feels awkward or flustered in other people's company or because of the attention of others, as, for example, when being observed engaging in actions that are subject to mild disapproval from others. It often has an element of self-deprecating humor and is typically characterized by nervous laughter, a shy smile, or blushing. See also SELF-CONSCIOUSNESS. —**embarrassed** *adj.*

**embedded figure** a type of AMBIGUOUS FIGURE in which one or more images blend into a larger pattern and so are not immediately obvious. With repeated viewing, the embedded figure usually becomes obvious more rapidly.

**Embedded Figures Test (EFT)** a test that consists of finding and tracing a simple form embedded within a complex figure, in some cases further complicated by an irregularly colored background. The test, for use with individuals aged 10 years and over, was designed to evaluate cognitive style, particularly FIELD DEPENDENCE and FIELD INDEPENDENCE: Those demonstrating high performance on the test are defined as field-independent people, who tend to follow active, participant approaches to learning, whereas those who have difficulties in performing the test are defined as field-dependent people, who often use spectator approaches and are also more open and responsive to other people's behavior. The EFT is also employed in neuropsychological contexts, as poor performance on the test may indicate a lesion or injury in the cerebral cortex. Also called **Hidden Figures Test**. [originally developed in 1950 by U.S. psychologist Herman A. Witkin (1916–1979)]

**embeddedness of an attitude** the extent to which an attitude is linked to or associated with other cognitive structures in memory. Such structures could include other

attitudes, values, and beliefs. See also ATTITUDE SYSTEM; BELIEF SYSTEM; INTERATTITUDINAL CONSISTENCY.

**embedded sentence** in TRANSFORMATIONAL GENERATIVE GRAMMAR, a subordinate CLAUSE in a COMPLEX SENTENCE. According to this analysis, the complex sentence *The dog chased the squirrel that stole the peanut* has a DEEP STRUCTURE consisting of two sentences, *The dog chased the squirrel* and *The squirrel stole the peanut*. In its SURFACE STRUCTURE, the second sentence is embedded within the first.

**emblem** *n.* a bodily movement that substitutes for a spoken word or phrase and that can be readily comprehended by most individuals in a culture. Examples are shaking the head back and forth to signify *no* and nodding the head up and down to indicate *yes*. See also NONVERBAL COMMUNICATION. —**emblematic** *adj.*

**embodied cognition** the thesis that the human mind is largely determined by the structures of the human body (morphology, sensory and motor systems) and its interactions with the physical environment. This concept emerged from work in late 20th-century linguistics, philosophy, and cognitive psychology. Also called **embodiment**.

**embolic stroke** a STROKE caused by a blood clot, cholesterol, fibrin, or other material breaking away from the wall of an artery or the heart and traveling up the arterial tree to lodge suddenly in a smaller cerebral artery (see CEREBRAL EMBOLISM). Embolic strokes account for approximately 30% of all strokes and are abrupt in onset.

**embolism** *n.* the interruption of blood flow due to blockage of a vessel by an **embolus**, material formed elsewhere and carried by the bloodstream to the site of obstruction. The embolus may be a blood clot, air bubble, fat globule, or other substance, such as a clump of bacteria or tissue cells. An embolus usually occurs at a point where a blood vessel branches or narrows. The symptoms are those associated with a disruption of the normal flow of fresh blood to a part of an organ and include pain, numbness, and loss of body warmth in the affected area. An embolus in a coronary artery may cause a fatal heart attack; in the brain, the result is an EMBOLIC STROKE.

**embolus** *n.* see EMBOLISM; THROMBUS.

**embryo** *n.* an animal in the stages of development between CLEAVAGE of the fertilized egg and birth or hatching. In human prenatal development, the embryo comprises the products of conception during the first 8 weeks of pregnancy; thereafter, it is called a FETUS. See EMBRYONIC STAGE. —**embryonic** *adj.*

**embryology** *n.* the branch of biology that studies the formation, early growth, and development of organisms. —**embryological** or **embryologic** *adj.* —**embryologist** *n.*

**embryonic stage** in human prenatal development, the roughly 6-week period in which the three-layered embryo (GASTRULA) develops. The embryonic stage follows the 2-week GERMINAL STAGE and precedes the FETAL STAGE, which begins in the 3rd month of pregnancy. The term is, however, sometimes used to refer to the full first 8 weeks of pregnancy.

**embryonic stem cell** see STEM CELL.

**embryo transfer** the process in which an ovum fertilized in vitro is transferred to the uterus of the woman from whom it was originally removed or to the uterus of another woman.

**EmC** abbreviation for EXTREME CAPSULE.

**EMDR** abbreviation for EYE-MOVEMENT DESENSITIZATION AND REPROCESSING.

**emergence** *n.* **1.** in philosophy of mind, the notion that conscious experience is the result of, but cannot be reduced to, brain processes. **2.** the idea that higher order phenomena may be derived from lower order constituents but are not predictable from them. See EPIGENETIC THEORY.

**emergency call system** a portable device that summons immediate assistance for an individual who, due to illness or an impairment, may not be able to reach a telephone in an emergency. The device, which may be worn (e.g., on the wrist, around the neck) or carried, is generally a noisemaker, a one-way alerting device (e.g., an alarm), or an intercom that may be used to contact a neighbor, family member, or 24-hour monitoring station staffed by trained personnel. Often used by people in their homes, emergency call systems are also used in hospitals, long-term care institutions, and ASSISTED LIVING facilities.

**emergency intervention** immediate action undertaken to minimize or eliminate the harm caused by a sudden and (usually) unforeseen occurrence. For example, emergency intervention for a rape victim may involve conducting a clinical interview within 24 to 78 hours after the rape in order to evaluate the person's status, reduce his or her potential for experiencing adverse mental health consequences, and develop a plan for long-term recovery. Although many people use this term interchangeably with CRISIS INTERVENTION, others limit it to situations involving suicidal behavior, violent behavior, or interpersonal victimization.

**emergency psychotherapy** psychological treatment of individuals who have undergone a traumatic experience (e.g., a road accident) and are in a state of acute anxiety, panic, or shock or are suicidal. Therapists may call on a very broad range of techniques depending on the immediate needs of the client. See also CRISIS INTERVENTION.

**emergency reaction** see FIGHT-OR-FLIGHT RESPONSE.

**emergency services** in health care, services provided to an individual in response to perceived need for immediate medical or psychological treatment.

**emergency syndrome** see FIGHT-OR-FLIGHT RESPONSE.

**emergent evolution** the theory that new species and biological adaptations evolve from ancestral sources but cannot be reduced to them.

**emergent feature** an entity produced by the interaction of small or simple elements (e.g., short line segments) in the visual system, such an entity (e.g., a polygon) being more salient to human perception than are the elements themselves. In ergonomics, OBJECT DISPLAYS are usually designed to make use of emergent features; the display configurations yield an overall image (e.g., a rectangle or pentagon) that can be perceived holistically by the operator of a machine system and therefore rapidly analyzed to assess the state of the system. When a component of the system is not in the appropriate or normal state, the image will be distorted, alerting the operator to potential problems.

**emergentism** *n.* the view that complex phenomena and processes have EMERGENT PROPERTIES that arise from interactions of the more basic processes that underlie them but cannot be deduced or explained from the nature and logic of these processes. Compare REDUCTIONISM.

**emergent leader** in the social psychology of groups, an individual who becomes the leader of an initially leaderless group gradually and implicitly, as the members allow that individual to assume the responsibilities of the leadership role, rather than by appointment or election. See also LEADERSHIP EMERGENCE.

**emergent literacy** the skills, knowledge, and attitudes that are presumed to be developmental precursors to conventional forms of reading and writing. Emergent literacy begins before the child receives formal instruction in reading and writing and occurs in circumstances that support these developments, as when, for example, the child is being read to.

**emergent-norm theory** an explanation of COLLECTIVE BEHAVIOR suggesting that the uniformity in action often observed in CROWDS, CULTS, and other aggregations is caused by members' conformity to unique SOCIAL NORMS that develop spontaneously in those groups. See UNIVERSALITY. [introduced in 1957 by U.S. sociologists Ralph H. Turner (1916– ) and Lewis M. Killian (1919–2010)]

**emergent property** a characteristic of a complex system that is not predictable from an analysis of its components and that thus often arises unexpectedly. For example, it has frequently been claimed that conscious experience is not predictable by analysis of the neurophysiological and biochemical complexity of the brain.

**emerging adulthood** a developmental stage that is neither adolescence nor young adulthood but is theoretically and empirically distinct from them both, spanning the late teens through the twenties, with a focus on ages 18 to 25. Emerging adulthood is distinguished by relative independence from social roles and from normative expectations. Having left the dependency of childhood and adolescence, and having not yet taken on the responsibilities that are normative in adulthood, emerging adults engage in identity exploration, a process of trying out various life possibilities (e.g., in love, work, and worldviews) and gradually moving toward making enduring decisions. During this period, individuals have the highest rates of residential instability (change) of any age group and see themselves neither as adolescents nor entirely as adults. [proposed in 2000 by U.S. developmental psychologist Jeffrey Jensen Arnett]

**emetic therapy** the use of drugs that produce aversive states when combined with problem behaviors or stimuli. Side effects of the drugs used and other issues with regard to this form of treatment limit its application. See AVERSION THERAPY.

**EMG** abbreviation for ELECTROMYOGRAPHY.

**emic** *adj.* **1.** denoting an approach to the study of human cultures that interprets behaviors and practices in terms of the system of meanings created by and operative within a particular cultural context. Such an approach would generally be of the kind associated with ETHNOGRAPHY rather than ETHNOLOGY. Compare ETIC. [introduced by U.S. linguist Kenneth Pike (1912–2000); first used in anthropology by U.S. cultural anthropologist Marvin Harris (1927–2001)] **2.** in linguistics, see EMIC–ETIC DISTINCTION.

**emic–etic distinction** **1.** a distinction between two fundamentally different approaches to language analysis, one characteristic of PHONEMICS and the other of PHONETICS. An **emic analysis** puts primacy on the characterization of a particular language through close attention to those

features that have a meaningful structural significance within it. By contrast, an **etic analysis** concentrates on universal features of language, particularly the acoustic properties of speech sounds and the physiological processes involved in making them. To illustrate the point, an emic analysis of English speech sounds would show interest in the difference between the sounds /r/ and /l/ because this is used to make meaningful distinctions (e.g., it differentiates the words *rash* and *lash*); an emic analysis of Japanese, however, would disregard this difference in sounds, as it is not a meaningful contrast in that language. An etic analysis would show the same interest in this feature in both languages. See also MINIMAL PAIR. **2.** the distinction between EMIC and ETIC approaches in anthropology and related disciplines.

**emitted behavior** a natural response to a circumstance; that is, behavior that is not influenced by, or dependent on, any external stimuli. Compare RESPONDENT BEHAVIOR.

**Emmert's law** the principle that the perceived size of an afterimage is proportional to the distance of the surface on which it is projected: The larger the afterimage, the farther away it is. See SIZE CONSTANCY. [Emil Emmert (1844–1913), German physiologist]

**emmetropia** *n.* the state of the eye's normal optical system, in which distant objects are sharply focused on the retina by the curvature of the cornea and the lens. This normal optical system is said to be **emmetropic**. Compare HYPEROPIA; MYOPIA.

**Emory Dyssemia Index (EDI)** a screening instrument to detect the presence of a processing deficit in which a person has difficulty recognizing and responding appropriately to nonverbal cues (see DYSSEMIA). It consists of numerous statements grouped into seven categories: gaze and eye contact, space and touch, paralanguage, facial expression, objectics/fashion, social norms, and nonverbal receptivity. A teacher, counselor, colleague, peer, or other third party uses a LIKERT SCALE ranging from 1 (*never*) to 5 (*very often*) to rate how often the person demonstrates the behavior described in each statement. The index is available in a 42-item version for children (**EDI-C**) and an 85-item version for adults (**EDI-A**). [originally developed in 1994 by Elizabeth B. Love and clinical psychologists Stephen Nowicki Jr. (1941– ) and Marshall Duke (1942– ) at Emory University]

**emotion** *n.* a complex reaction pattern, involving experiential, behavioral, and physiological elements, by which an individual attempts to deal with a personally significant matter or event. The specific quality of the emotion (e.g., FEAR, SHAME) is determined by the specific significance of the event. For example, if the significance involves threat, fear is likely to be generated; if the significance involves disapproval from another, shame is likely to be generated. Emotion typically involves FEELING but differs from feeling in having an overt or implicit engagement with the world. —**emotional** *adj.*

**emotional abuse** nonphysical abuse: a pattern of behavior in which one person deliberately and repeatedly subjects another to nonphysical acts that are detrimental to behavioral and affective functioning and overall mental well-being. Researchers have yet to formulate a universally agreed upon definition of the concept, but they have identified a variety of forms that emotional abuse may take, including verbal abuse; intimidation and terrorization;

humiliation and degradation; exploitation; harassment; rejection and withholding of affection; isolation; and excessive control. Also called **psychological abuse**.

**emotional adjustment** the condition or process of personal acceptance of and adaptation to one's circumstances, which may require modification of attitudes and the expression of emotions that are appropriate to a given situation.

**emotional blocking** the inhibition of thought, speech, or other responses due to extreme emotion, often associated with extreme fear. See also **BLOCKING**.

**emotional charge** strong emotion, such as anger, conceived as being bottled up under pressure and ready to explode. The concept also involves the idea that emotions are negatively or positively charged.

**emotional cognition** the ability to recognize and interpret the emotions of others, notably from such cues as facial expression and voice tone, and to interpret one's own feelings correctly. Impairment of emotional cognition is associated with a range of psychological conditions, notably **ASPERGER'S DISORDER**.

**emotional conflict** a state of disharmony between incompatible intense emotions, such as love and hate or the desire for success and fear of failure, that causes distress to the individual.

**emotional contagion** the rapid spread of an emotion from one or a few individuals to others. For example, fear of catching a disease can spread rapidly through a community. See also **BEHAVIORAL CONTAGION**; **MASS CONTAGION**; **SOCIAL CONTAGION**.

**emotional content** themes or characteristics of feelings that tend to elicit strong emotions, especially as they are portrayed in various forms of communication (reading material, motion pictures, etc.) or as they are manifested in specific situations.

**emotional dependence** reliance on others for emotional support, comfort, and nurturance.

**emotional deprivation** lack of adequate interpersonal attachments that provide affirmation, love, affection, and interest, especially on the part of the primary caregiver during a child's developmental years.

**emotional deterioration** an emotional state characterized by carelessness toward oneself, indifference to one's surroundings (including other people), and inappropriate emotional reactions.

**emotional development** a gradual increase in the capacity to experience, express, and interpret the full range of emotions and in the ability to cope with them appropriately. For example, infants begin to smile and frown around 8 weeks of age and to laugh around 3 or 4 months, and older children begin to learn that hitting others is not an acceptable way of dealing with anger. Expressions of delight, fear, anger, and disgust are evident by 6 months of age, and fear of strangers from 8 months. Expressions of affection and jealousy are seen between 1 and 2 years of age, and expressions of rage in the form of temper tantrums appear a year or so later. Cortical control, imitation of others, hormonal influences, home atmosphere, and conditioning play major roles in emotional development. Also called **affective development**.

**emotional disorder** **1.** any psychological disorder characterized primarily by maladjustive emotional reac-

tions that are inappropriate or disproportionate to their cause. Also called **emotional illness**. See also **ANXIETY DISORDER**; **MOOD DISORDER**. **2.** loosely, any mental disorder.

**emotional disposition** a tendency to have a particular type or class of affective experience (e.g., **POSITIVE AFFECT** or **NEGATIVE AFFECT**).

**emotional dissemblance** lack of correspondence between an individual's internal affective state and its outward expression. There are two broad categories of emotional dissemblance: culturally acceptable **DISPLAY RULES** and nonverbal or verbal deception.

**emotional disturbance** a fear-, anxiety-, or other emotionally based condition that results in maladaptive behavior—ranging from withdrawal and isolation to acting out and aggression—and adversely affects an individual's academic and social functioning. Children with a long-standing condition that meets specified criteria, such as the inability to form satisfactory relationships with peers and teachers, are considered to have a **serious emotional disturbance (SED)** that constitutes a disability under the **INDIVIDUALS WITH DISABILITIES EDUCATION ACT**.

**emotional divorce** a marital relationship in which the partners live separate lives, with an absence of normal interaction between them.

**emotional dysregulation** see **DYSREGULATION**.

**emotional engineering** see **KANSEI ENGINEERING**.

**emotional expression** **1.** an outward manifestation of an intrapsychic state. For example, a high-pitched voice is a sign of **AROUSAL**, blushing is a sign of **EMBARRASSMENT**, and so on. See also **AFFECT DISPLAY**. **2.** an emotional response in which the individual attempts to influence his or her relation to the world through the intermediacy of others, rather than directly. For example, a sad face and slumped posture elicit nurturing from others. Expressions differ from **ACTION TENDENCIES**, which influence the world directly, and from **FEELINGS**, which are intrapsychic experiences of the significance of a transaction.

**emotional flooding** an influx of great and uncontrollable emotion that may be overwhelming to the person who experiences it.

**emotional illness** see **EMOTIONAL DISORDER**.

**emotional immaturity** **1.** a tendency to express emotions without restraint or disproportionately to the situation. Compare **EMOTIONAL MATURITY**. **2.** a lay term for **MALADJUSTMENT**.

**emotional incest** a form of child **SEXUAL ABUSE** consisting of nonphysical sexualized interactions between a parent figure and a child. Emotional incest may involve the caregiver commenting on the child's sexual attractiveness, drawing attention to the caregiver's own arousal to the child or the size or shape of the child's secondary sexual characteristics (e.g., breasts, pubic hair), or implying that the child is sexually active (e.g., calling the child a slut). Also called **covert incest**.

**emotional inoculation** the imagining or **COGNITIVE REHEARSAL** of an anxiety-producing experience. Rehearsal lowers anxiety by allowing the individual to anticipate reactions and plan responses.

**emotional insight** **1.** an awareness of one's own emotional reactions or those of others. **2.** in psychotherapy, the client's awareness of the emotional forces, such as internal



conflicts or traumatic experiences, that underlie his or her symptoms. This form of insight is considered a prerequisite to change in many therapeutic approaches.

**emotional instability** a tendency to exhibit unpredictable and rapid changes in emotions. See LABILE AFFECT. Compare EMOTIONAL STABILITY.

**emotional insulation** a defense mechanism characterized by seeming indifference and detachment in response to frustrating situations or disappointing events. The extreme of emotional insulation is found in states of complete apathy and catatonic stupor; in lesser forms, it appears as **emotional isolation**.

**emotional intelligence** a type of intelligence that involves the ability to process emotional information and use it in reasoning and other cognitive activities, proposed by U.S. psychologists Peter Salovey (1958– ) and John D. Mayer (1953– ). According to Mayer and Salovey's 1997 model, it comprises four abilities: to perceive and appraise emotions accurately; to access and evoke emotions when they facilitate cognition; to comprehend emotional language and make use of emotional information; and to regulate one's own and others' emotions to promote growth and well-being. Their ideas were popularized in a best-selling book by U.S. psychologist and science journalist Daniel J. Goleman (1946– ), who also altered the definition to include many personality variables.

**emotional intelligence quotient** an index of EMOTIONAL INTELLIGENCE. Popular writers and the media sometimes abbreviate the term to **EQ** (for **emotional quotient**, nominally similar to IQ).

**emotional isolation** see EMOTIONAL INSULATION.

**emotionality** *n.* the degree to which an individual experiences and expresses emotions, irrespective of the quality of the emotional experience.

**emotionally based persuasion** see AFFECTIVELY BASED PERSUASION.

**emotional maturity** a high and appropriate level of emotional control and expression. Compare EMOTIONAL IMMATURITY.

**emotional memory** memory for events that evoke an emotional response. Emotional memories can be either implicit (nonconscious) or explicit (conscious). In laboratory studies with nonhuman animals, implicit emotional memory is demonstrated through such phenomena as conditioned fear (see AVOIDANCE CONDITIONING) and FREEZING BEHAVIOR; additional paradigms exist to study implicit emotional memory in humans. Explicit emotional memory is manifested when individuals reexperience the original emotions engendered by an event (e.g., terror when describing an accident, joy when describing a close family member's wedding). Functional neuroanatomy suggests that the encoding process for implicit emotional memories centers around the AMYGDALA in the subcortical portions of the limbic system, and ADRENERGIC and DOPAMINERGIC mechanisms in particular. Indeed, a person whose amygdala is damaged may calmly recall the details of a traumatic event without showing any residual fear in relation to that event. In contrast, encoding of explicit emotional memories involves the cortical regions of the limbic system, such as the HIPPOCAMPUS. Emotional memory is distinct from the more general phenomenon of enhanced storage and retrieval of emotional stimuli, which for example is seen when experimental participants recall aversive

nouns from a word list better than they recall neutral items. Also called **affective memory**.

**emotional processing theory** a theory proposing a hypothetical sequence of fear-reducing changes that is evoked by emotional engagement with the memory of a significant event, particularly a trauma. The theory is based on the concept of a **fear structure**, a type of mental framework for reacting to threat that includes information about a feared stimulus (e.g., a snake), about physiological and behavioral responses (e.g., rapid heartbeat, sweating), and about the meaning of the stimulus and response elements (e.g., the snake is poisonous and will bite me and I am afraid of it). Although most fear structures accurately represent legitimate threats, others become distorted: Individuals do not reflect sufficiently upon the event initially and thus do not successfully evoke and cope with the associated emotions, so that harmless stimuli become seen as dangerous and act to trigger excessive physiological reactions, deliberate avoidance of memories of the event, emotional withdrawal, and other maladaptive behaviors.

The existence of such erroneous fear structures originally was proposed in response to the difficulties of traditional learning theories in explaining intrusion symptoms and fear in POSTTRAUMATIC STRESS DISORDER. According to this conceptualization, which has since been expanded to other anxiety disorders, treatment (i.e., PROLONGED EXPOSURE THERAPY) should be designed to provide information that is incompatible with the pathological elements of a specific fear structure. Thus, the repetitive exposure to the event memory in a safe environment in which the threat is not realized gradually decreases emotional responding until the fear structure changes to accommodate this new, more accurate information (e.g., If I am not anxious, the situation cannot be so bad). [proposed in 1986 by U.S. psychologists Edna B. Foa (1937– ) and Michael J. Kozak (1952– )]

**emotional quotient** see EMOTIONAL INTELLIGENCE QUOTIENT.

**emotional reeducation** psychotherapy focused on modifying the client's attitudes, feelings, and reactions by helping him or her gain insight into emotional conflicts and self-defeating behavior arising from affective disturbance or disorder. Typical objectives are an increase in self-confidence, sociability, and self-reliance. The methods used include group discussions, personal counseling, relationship therapy, and self-exploration.

**emotional release** the CATHARSIS or sudden outpouring of emotions that have been pent up or suppressed.

**emotional response** an emotional reaction, such as happiness, fear, or sadness, to a given stimulus.

**emotional security** the feeling of safety, confidence, and freedom from apprehension. In the approach of Karen D. HORNEY, the need for emotional security is the underlying determinant of personality and behavior; in the approach of Harry Stack SULLIVAN, it is itself determined primarily by interpersonal relations. See also SECURITY OPERATIONS.

**emotional stability** predictability and consistency in emotional reactions, with absence of rapid mood changes. Compare EMOTIONAL INSTABILITY.

**emotional stress** the feeling of psychological strain and uneasiness produced by situations of danger, threat, and loss of personal security or by internal conflicts, frustra-

tions, loss of self-esteem, and grief. Also called **emotional tension**.

**emotional stupor** a form of stupor marked by depression or intense anxiety and accompanied by mutism.

**emotional support** the verbal and nonverbal processes by which one communicates care and concern for another, offering reassurance, empathy, comfort, and acceptance. It may be a major factor contributing to the effectiveness of SELF-HELP GROUPS, within which members both provide and receive emotional support, and to ATTACHMENT, in which the caregiver provides emotional support to the child.

**emotional tension** see EMOTIONAL STRESS.

**emotional unconscious** that aspect of the nonconscious mind that consists of unreportable emotional or motivational states. It is suggested that such states may influence thought and action without the individual becoming consciously aware of them. The emotional unconscious is comparable to, but distinct from, the COGNITIVE UNCONSCIOUS, which consists of implicit percepts, memories, and thoughts. The extent to which an individual can be said to have emotions without being conscious of them, however, is controversial. [proposed by U.S. cognitive psychologist John F. Kihlstrom (1948– )]

**emotional valence** the value associated with a stimulus as expressed on a continuum from pleasant to unpleasant or from attractive to aversive. In FACTOR ANALYSIS and MULTIDIMENSIONAL SCALING studies, emotional valence is one of two axes (or dimensions) on which an emotion can be located, the other axis being arousal (expressed as a continuum from high to low). For example, happiness is typically characterized by pleasant valence and relatively high arousal, whereas sadness or depression is typically characterized by unpleasant valence and relatively low arousal.

**emotion-focused coping** a stress-management strategy in which a person focuses on regulating his or her negative emotional reactions to a stressor. Rather than taking actions to change the stressor itself, the individual tries to control feelings using a variety of cognitive and behavioral tools, including meditation and other relaxation techniques, prayer, positive REFRAMING, wishful thinking and other AVOIDANCE techniques, self-blame, seeking SOCIAL SUPPORT (or conversely engaging in SOCIAL WITHDRAWAL), and talking with others (including mental health care professionals). It has been proposed that emotion-focused coping is used primarily when a person appraises a stressor as beyond his or her capacity to change. Compare PROBLEM-FOCUSED COPING. [identified in 1984 by Richard S. LAZARUS and Susan Folkman (1938– ), U.S. psychologists]

**emotion-focused couples therapy** a form of COUPLES THERAPY based on the premise that relationship problems are most often due to thwarted fulfillment of emotional needs, particularly the need for attachment. This intervention involves isolating the conflict over thwarted needs, interrupting the negative interaction cycle, reframing the conflict, and helping the partners to accept each other's emotional experience as valid. Also called **emotionally focused couples therapy**. [developed in the 1980s by South African-born Canadian psychologist Leslie S. Greenberg (1945– ) and Canadian psychologist Susan M. Johnson]

**emotion-focused therapy (EFT)** an integrative INDIVIDUAL THERAPY that focuses on emotion as the key determinant of personality development and of psychotherapeutic change. In sessions, the therapist helps the client to become aware of, accept, make sense of, and regulate emotions as a way of resolving problems and promoting growth. Techniques are drawn from CLIENT-CENTERED THERAPY, GESTALT THERAPY, and COGNITIVE BEHAVIOR THERAPY. A principal proponent of this approach is South African-born Canadian psychologist Leslie S. Greenberg (1945– ).

**emotion regulation** the ability of an individual to modulate an emotion or set of emotions. **Explicit emotion regulation** requires conscious monitoring, using techniques such as learning to construe situations differently in order to manage them better, changing the target of an emotion (e.g., anger) in a way likely to produce a more positive outcome, and recognizing how different behaviors can be used in the service of a given emotional state. **Implicit emotion regulation** operates without deliberate monitoring; it modulates the intensity or duration of an emotional response without the need for awareness. Emotion regulation typically increases across the lifespan. Also called **emotional regulation**. See also PROCESS MODEL OF EMOTION REGULATION.

**emotive** *adj.* related to or arousing emotion.

**emotive imagery** in behavior therapy and cognitive behavior therapy, a procedure in which the client imagines emotion-arousing scenes while relaxing in a comfortable, protective setting. See RECIPROCAL INHIBITION.

**emotive technique** any of various therapeutic techniques designed to encourage clients to express their thoughts and feelings in an intense and animated manner so as to make these more obvious and available for discussion in therapy. Emotive techniques are used, for example, in RATIONAL EMOTIVE BEHAVIOR THERAPY to dispute irrational beliefs in order to move from intellectual to emotional insight.

**empathic failure** **1.** a lack of understanding of another person's feelings, perceptions, and thoughts. In SELF PSYCHOLOGY, a parent or caregiver's repeated empathic failure toward a child is thought to be a potential source of later psychopathology, such as NARCISSISTIC PERSONALITY DISORDER and BORDERLINE PERSONALITY DISORDER. **2.** in psychoanalysis, a situation in which a patient feels misunderstood by the therapist or analyst. Compare ATTUNEMENT; MISATTUNEMENT. [first described in 1966 by Austrian-born U.S. psychoanalyst Heinz Kohut (1913–1981)]

**empathy** *n.* understanding a person from his or her frame of reference rather than one's own, or vicariously experiencing that person's feelings, perceptions, and thoughts. Empathy does not, of itself, entail motivation to be of assistance, although it may turn into SYMPATHY or personal distress, which may result in action. In psychotherapy, therapist empathy for the client can be a path to comprehension of the client's cognitions, affects, motivations, or behaviors. See also PERSPECTIVE TAKING. —**empathic** or **empathetic** *adj.* —**empathize** *vb.*

**empathy-altruism hypothesis** a theory that explains helping behaviors as resulting from feelings of empathy and compassion toward others, which arouse an altruistic motivation directed toward the ultimate goal of improving another person's welfare. [proposed in 1991 by U.S. social psychologist C. Daniel Batson (1943– )]

**empathy training** **1.** a systematic procedure to increase empathetic feeling and communications in an individual. **2.** training to enable convicted abusers to envision their victims' feelings and become sensitive to the pain they have caused, with the aim of decreasing the likelihood that they will commit similar crimes in the future.

**empirical** *adj.* **1.** derived from or denoting experimentation or systematic observations as the basis for conclusion or determination, as opposed to speculative, theoretical, or exclusively reason-based approaches. Many forms of research attempt to gain **empirical evidence** in favor of a hypothesis by manipulating an INDEPENDENT VARIABLE and assessing the effect on an outcome or DEPENDENT VARIABLE. **2.** based on experience.

**empirical construct** see CONSTRUCT.

**empirical-criterion keying** a method for developing personality inventories in which the items (presumed to measure one or more traits) are created and then administered to a criterion group of people known to possess a certain characteristic (e.g., antisocial behavior, significant anxiety, exaggerated concern about physical health) and to a control group of people without the characteristic. Only those items that demonstrate an ability to distinguish between the two groups are chosen for inclusion in the final inventory.

**empirical grounding** the practice or procedure of anchoring theoretical terms to scientifically measurable or observable events. The extent to which this is possible for a particular theory is a measure of the value of that theory. See OPERATIONAL DEFINITION.

**empirical knowledge** **1.** in philosophy, knowledge gained from experience rather than from INNATE IDEAS or DEDUCTIVE REASONING. **2.** in the sciences, knowledge gained from experiment and observation rather than from theory. See EMPIRICISM.

**empirically keyed test** an assessment in which answers are scored in such a way as to establish differences in responses among groups already known to differ. For example, on a test measuring problem solving, the correct alternative among the response choices would be the one preferred by members of a CRITERION GROUP who were administered the test previously. See also EMPIRICAL-CRITERION KEYING.

**empirical method** any procedure for conducting an investigation that relies upon experimentation and systematic observation rather than theoretical speculation. The term is sometimes used as a vague synonym for SCIENTIFIC METHOD.

**empirical psychology** an approach to the study and explanation of psychological phenomena that emphasizes objective observation (see OBSERVATIONAL STUDY) and the EXPERIMENTAL METHOD as the source of information about the phenomena under consideration. Compare RATIONAL PSYCHOLOGY. See also EXPERIMENTAL PSYCHOLOGY.

**empirical-rational strategy** in social psychology, the idea that societal and institutional change can be brought about if the public receives enough convincing factual evidence. The concept holds that reason alone can motivate people to change their attitudes. See also NORMATIVE-REEDUCATIVE STRATEGY; POWER-COERCIVE STRATEGY.

**empirical self** the self that is known by the self, rather than the self as knower. In the psychology of William JAMES, the empirical self is held to consist of the **material**

**self** (everything material that can be seen as belonging to the self), the SOCIAL SELF (the self as perceived by others), and the **spiritual self** (the self that is closest to one's core subjective experience of oneself). The empirical self (or "me") is contrasted with the NOMINATIVE SELF (or "I").

**empirical test** the test of a hypothesis by means of experiments or other systematic observations.

**empirical validity** the degree to which the accuracy of a test, model, or other construct can be demonstrated through experimentation and systematic observation (i.e., the accumulation of supporting research evidence) rather than theory alone.

**empiricism** *n.* **1.** an approach to EPISTEMOLOGY holding that all knowledge of matters of fact either arises from experience or requires experience for its validation. In particular, empiricism denies the possibility of INNATE IDEAS, arguing that the mind at birth is like a blank sheet of paper (see TABULA RASA). During the 17th and 18th centuries, empiricism was developed as a systematic approach to philosophy in the work of John LOCKE, George BERKELEY, and David HUME. These thinkers also developed theories of ASSOCIATIONISM to explain how even the most complex mental concepts can be derived from simple sense experiences. Although there is a strong emphasis on empiricism in psychology, this can take different forms. Some approaches to psychology hold that sensory experience is the origin of all knowledge and thus, ultimately, of personality, character, beliefs, emotions, and behavior. BEHAVIORISM is the purest example of empiricism in this sense. Advocates of other theoretical approaches to psychology, such as PHENOMENOLOGY, argue that the definition of experience as only sensory experience is too narrow; this enables them to reject the position that all knowledge arises from the senses while also claiming to adhere to a type of empiricism. **2.** the view that experimentation is the most important, if not the only, foundation of scientific knowledge and the means by which individuals evaluate truth claims or the adequacy of theories and models. **3.** in philosophy, the position that all linguistic expressions that are not tautologous must be empirically verifiable if they are to be deemed valid or meaningful. This principle was essential to the philosophy of LOGICAL POSITIVISM. See also POSITIVISM. —**empiricist** *adj.*, *n.*

**empiric-risk figure** in genetic counseling, a percentage representing the risk for common disorders, such as schizophrenia and depression, when there is evidence of genetic factors of unknown mechanism. The figure is based upon reports of frequency of occurrence in large series of families (in addition to the approximately 3% risk of birth defects, including intellectual disability, present for every couple having a child).

**employee appraisal** see EMPLOYEE EVALUATION.

**employee assistance program (EAP)** a designated formal function within an organization for helping individual employees with personal problems that affect their job performance (e.g., substance abuse, family difficulties, emotional problems). EAP services include screening, assessment, and referral of employees to community resources, as well as direct clinical treatment by psychologists or other mental health professionals.

**employee comparison technique** any method of EMPLOYEE EVALUATION in which the performance of one employee is compared with that of others, rather than considered in absolute terms. Examples include the RANKING

METHOD, the FORCED DISTRIBUTION method, and the PAIRED COMPARISON method.

**employee evaluation** the judgment of an employee's overall JOB PERFORMANCE and of certain related personal characteristics (e.g., ability to get along with colleagues) that may be relevant. Employee evaluations are usually performed by a supervisor or consultant. Also called **employee appraisal**; **work evaluation**. See CRITERION DIMENSIONS; JOB CRITERION; PERFORMANCE REVIEW.

**Employee Retirement Income Security Act (ERISA)** a federal act, passed in 1974, that established new standards for qualified, private-sector, employer-funded pension and welfare benefits plans within the United States, providing protection for beneficiaries.

**employee training** see PERSONNEL TRAINING.

**employment at will** a common-law doctrine stating that in the absence of an employment contract, neither an employer nor an employee is required to give advance notice of termination or resignation, nor are they required to give a reason for their action. Legal exceptions to the doctrine are provided by whistleblower and antidiscrimination statutes, as well as retribution laws that protect employees against termination for such actions as filing a worker's compensation claim or serving on a jury.

**employment counseling** counseling designed to help an individual with issues related to work, such as job seeking, work compatibility, outside pressures interfering with job performance, termination of employment, and work efficiency. Within an organization, employment counseling is often provided through an EMPLOYEE ASSISTANCE PROGRAM.

**employment discrimination** an employer's use of a person's ethnicity, color, age, religion, gender, sexual orientation, national origin, disability, or other variable unrelated to job qualifications or performance as a factor in differential pay, hiring practices, termination of employment, or working conditions.

**employment interview** a meeting with a job applicant in which a personnel worker, executive, or supervisor (a) imparts information and answers questions about the company, including its products, working conditions, and benefits offered; (b) describes the job in which the applicant is interested; and (c) obtains information about the applicant that will contribute to a judgment of his or her suitability for the job. Despite concerns about its reliability and validity, the employment interview continues to be used far more frequently than any other selection technique (e.g., WORK-SAMPLE TESTS). Also called **job interview**. See PATTERNERD INTERVIEW; STRUCTURED INTERVIEW; UNSTRUCTURED INTERVIEW.

**employment psychology** see INDUSTRIAL AND ORGANIZATIONAL PSYCHOLOGY.

**employment test** any instrument used to assess the KNOWLEDGE, SKILLS, ABILITIES, AND OTHER CHARACTERISTICS of applicants so as to predict their performance in a job. Employment tests can be used to measure a variety of attributes, such as decision-making skills, aptitudes and interests, personality traits, and sensory and motor abilities. See SELECTION TEST. See also INTEGRITY TESTING; OCCUPATIONAL TEST; PERSONNEL TEST; WORK-SAMPLE TEST.

**empowerment** *n.* **1.** the promotion of the skills, knowledge, and confidence necessary to take greater control of one's life. In psychotherapy, the process involves helping clients become more active in meeting their needs and ful-

filling their desires and aims to provide them with a sense of achievement and realization of their own abilities and ambitions. See also ENABLING. **2.** the delegation of increased decision-making powers to individuals or groups in a society or organization. —**empower** *vb.*

**empowerment evaluation** see PARTICIPATORY EVALUATION.

**empty-chair technique** a technique originating in GESTALT THERAPY in which the client conducts an emotional dialogue with some aspect of himself or herself or some significant person (e.g., a parent), who is imagined to be sitting in an empty chair during the session. The client then exchanges chairs and takes the role of that aspect or of that other person. This technique is now sometimes also referred to as the **two-chair technique**.

**empty nest** the family home after the children have reached maturity and left, often creating an emotional void (**empty nest syndrome**) in the lives of the parents (**empty nesters**).

**empty set** in SET THEORY, a collection of entities with no ELEMENTS or members. Also called **null set**.

**empty speech** fluent speech that lacks information or meaningful content.

**empty word** see FUNCTION WORD.

**emphyreumatic** *adj.* in the ZWAARDEMAKER SMELL SYSTEM, denoting an odor quality that is smelled in roasted coffee and creosote.

**EMR** abbreviation for EDUCABLE MENTALLY RETARDED.

**EMSAM** *n.* a trade name for transdermal SELEGILINE.

**emulation** *n.* the ability to comprehend the goal of a model and engage in similar behavior to achieve that goal, without necessarily replicating the specific actions of the model. Emulation facilitates SOCIAL LEARNING.

**enabling** *n.* **1.** a process whereby someone (i.e., the **enabler**) contributes to continued maladaptive or pathological behavior (e.g., child abuse, substance abuse) in another person. The enabler is typically an intimate partner or good friend who passively permits or unwittingly encourages this behavior in the other person; often, the enabler is aware of the destructiveness of the person's behavior but feels powerless to prevent it. **2.** the process of encouraging or allowing individuals to meet their own needs and achieve desired ends. A therapist attempts to enable clients to believe in themselves, have the confidence to act on their desires, and affirm their ability to achieve. See also EMPOWERMENT.

**enaction** *n.* the process of putting something into action. The word is preferred to terms like *execution*, which have computing or machine-based connotations. Enaction thus involves guidance and support; it does not imply complete automation. Much of the literature on process modeling states that models should be **enactable**.

**enactive representation** representation of objects and events through action and movement, which is characteristic of infants and small children. That is, the child understands things in terms of how they can be manipulated, used, or acted upon. The process underlying this emergent understanding is called the **enactive mode** (or **enactive stage**). Compare ICONIC REPRESENTATION; SYMBOLIC REPRESENTATION. [proposed by Jerome Seymour BRUNER]

**enactment** *n.* **1.** the acting out of an important life event rather than expressing it in words. See PSYCHODRAMA. **2.** in some forms of PSYCHOANALYTIC PSYCHOTHERAPY, the patient's reliving of past relationships in the TRANSFERENCE relationship with the therapist and, conversely, the therapist's move away from active neutrality to unwittingly intertwine personal issues into symbolic interactions with the patient (a COUNTERTRANSFERENCE phenomenon). Attunement to the relational patterns that emerge in this therapeutic relationship offers the therapist an opportunity to help the patient acknowledge and work through similar patterns in the patient's relationships with others. See also RELATIONAL PSYCHOANALYSIS; SELF PSYCHOLOGY. **3.** in some forms of COUPLES THERAPY, a technique in which the therapist recreates areas of conflict between partners in order to facilitate bonding moments. **4.** see STRUCTURAL FAMILY THERAPY.

**enantiodromia** *n.* **1.** the conception of Greek philosopher Heraclitus (c. 535–c. 475 BCE) that all things eventually turn into, or are replaced by, their opposite. **2.** in the approach of Carl JUNG, the “necessary opposition” that governs psychic life, as in the interplay between conscious and unconscious, introverted and extraverted tendencies, and the EGO and SHADOW.

**enantiomers** *n.* see ISOMERS.

**encapsulated end organ** see END ORGAN.

**encapsulation** *n.* **1.** the process of separating or keeping separate, particularly the ability of some people experiencing delusions to maintain high levels of functioning and prevent their delusions from pervading everyday behavior and cognitive states (hence called **encapsulated delusions**). **2.** enclosure, as in a sheath or other covering.

**encéphale isolé** a nonhuman animal whose brainstem has been surgically severed at the point where the spinal cord and MEDULLA OBLONGATA meet. The animal is alert but paralyzed, with a normal sleep–wake cycle on an electroencephalogram. See also CERVEAU ISOLÉ. [French, “isolated brain”]

**encephalitis** *n.* inflammation of the brain, typically caused by viral infection. The symptoms may be mild, with influenza-like characteristics, or severe and potentially fatal, with fever, vomiting, confusion or disorientation, drowsiness, seizures, and coma or loss of consciousness. See also ENCEPHALITIS LETHARGICA; HERPES-SIMPLEX ENCEPHALITIS; MENINGOENCEPHALITIS; POLIOENCEPHALITIS. —**encephalitic** *adj.*

**encephalitis lethargica** an epidemic form of encephalitis that was observed globally between 1915 and 1926 and believed to be of viral origin (it appeared following an influenza pandemic of 1914–1918). Symptoms include pathological sleepiness and drowsiness, apathy, and ocular paralysis. Also called **Economo's disease**; **von Economo's disease**.

**encephalization** *n.* a larger than expected brain size for a species, given its body size. For example, an average person weighing 140 lb has an actual brain weight of 2.9 lb instead of the predicted 0.6 lb. This enlargement is the result of evolutionary advancement, with the brains of higher species increasing in anatomical complexity as cognitive functions were transferred from more primitive brain areas to the cerebral cortex (a process called **corticalization**).

**encephalocele** *n.* a congenital hernia (see HERNIATION) of the brain, which protrudes through a cleft in the skull.

**encephalofacial angiomatosis** see STURGE–WEBER SYNDROME.

**encephalomalacia** *n.* softening of the brain, usually due to tissue deterioration resulting from an inadequate blood supply to the area.

**encephalomyelitis** *n.* inflammation of the brain and spinal cord. As with ENCEPHALITIS, it is most often caused by viral infection.

**encephalon** *n.* see BRAIN.

**encephalopathy** *n.* any of various diffuse disorders or diseases of the brain that alter brain function or structure and are characterized primarily by altered mental states, especially confusion.

**encephalopsy** *n.* a condition in which one associates colors with numbers, letters, smells, or other dimensions.

**encoding** *n.* **1.** the conversion of a sensory input into a form capable of being processed and deposited in memory. Encoding is the first stage of memory processing, followed by RETENTION and then RETRIEVAL. **2.** in communications, the conversion of messages or data into codes or signals capable of being carried by a communication channel.

**encoding specificity** the principle that RETRIEVAL of memory is optimal when the retrieval conditions (such as context or cues) duplicate the conditions that were present when the memory was formed. [proposed in 1983 by Endel TULVING]

**encoding strategy** a mental or behavioral strategy that one may use to ensure learning or remembering, such as ELABORATIVE REHEARSAL, mental imagery, or a MNEMONIC.

**encoding variability theory** see SPACING EFFECT.

**encopresis** *n.* repeated defecation in inappropriate places (clothing, floor, etc.) that occurs after the age of 4 and is not due to a substance (e.g., a laxative) or to a general medical condition. Encopresis may or may not be accompanied by constipation and is often associated with poor toilet training and stressful situations. Compare FECAL INCONTINENCE.

**encounter** *n.* a direct confrontation or other involvement of one individual with another or between several people. See also INTERACTION.

**encounter group** a group of individuals in which constructive insight, sensitivity to others, and personal growth are promoted through direct interactions on an emotional and social level. The leader functions as a catalyst and facilitator rather than as a therapist and focuses on here-and-now feelings and interaction rather than on theory or individual motivation.

**encounter movement** a trend toward the formation of small groups in which various techniques, such as CONFRONTATION, GAMES, and REENACTMENT, are used to stimulate awareness, personality growth, and productive interactions. The movement gained popularity in the 1960s but diminished at the end of the 20th century.

**enculturation** *n.* **1.** the processes, beginning in early childhood, by which particular cultural values, ideas, beliefs, and behavioral patterns are instilled in the members of a society. Compare ACCULTURATION. See also CULTURAL HERITAGE; SOCIAL TRANSMISSION. **2.** in anthropology, the rearing of great apes in an environment that includes frequent contact with humans and their artifacts and, usually, human–ape interactions, such as direct teaching, the

use of language, and JOINT ATTENTION. Some investigators have suggested that enculturated great apes may show aspects of social cognitive development that are more like those of children than of mother- or nursery-reared apes. —**enculturate** *vb*.

**endarterectomy** *n.* a surgical procedure in which an atherosclerotic plaque is removed from an artery, most commonly the carotid artery at the level of bifurcation in the neck. By removing the plaque, the bore of the artery is enlarged, allowing a greater flow of blood to the brain and thus decreasing the risk of stroke.

**end-aversion bias** the tendency for individuals to avoid the extreme choices on a scale and instead select a choice in the middle of the scale, closer to neutral. Such an approach results in a narrower range of responses that most likely will not be an accurate representation of the variable being measured. For example, a supervisor assessing employees would show end-aversion bias if his or her ratings generally were around 4 on a 7-point scale. Also called **central-tendency bias**.

**end brush** the finely branched terminal of an axon. Also called **telodendron**.

**endemic** *adj.* occurring in a specific region or population, particularly with reference to a disease or disorder. Compare EPIDEMIC; PANDEMIC.

**end feet** the terminal processes of an AXON or an ASTROCYTE.

**endo-** (**end-**) *combining form* inside or internal.

**endocannabinoid** *n.* see ENDOGENOUS CANNABINOID.

**endocarditis** *n.* inflammation of the **endocardium**, the inner lining of the heart, and often the heart valves. It is typically caused by bacterial or fungal infections. Primary diagnostic symptoms include fever, new or changing heart murmur, and minute hemorrhages (particularly in the extremities and conjunctiva of the eye).

**endocast** *n.* a cast of the cranial cavity of a skull. It is especially useful for studying the size and form of brains of fossils of extinct species.

**endocochlear potential** see ENDOLYMPHATIC POTENTIAL.

**endocrine** *adj.* describing or relating to a type of chemical signaling in which a chemical messenger is released by a cell and is carried (e.g., via the bloodstream) to a distant target cell on which it exerts its effect. Compare AUTOCRINE; PARACRINE.

**endocrine disruptor** a natural or synthetic chemical that blocks, stimulates, mimics, or otherwise affects hormones in the endocrine system (e.g., sex hormones, thyroid hormones). Natural endocrine disruptors may include, for example, phytoestrogens (i.e., ESTROGENS produced by some plants). Examples of synthetic endocrine disruptors are industrial chemicals (e.g., polychlorinated biphenyls [PCBs]), plastics such as BISPHENOL A, plasticizers such as PHTHALATE, pesticides (e.g., dichlorodiphenyltrichloroethane [DDT]), and pharmaceutical agents such as DIETHYLSTILBESTROL. Effects of exposure to endocrine disruptors may include infertility, birth defects, and cancer.

**endocrine gland** any ductless gland that secretes hormones directly into the bloodstream to act on distant targets. Such glands include the PITUITARY GLAND, ADRENAL GLAND, THYROID GLAND, gonads (TESTIS and OVARY), and IS-

LETS OF LANGERHANS. Together, they comprise the **endocrine system**. Compare EXOCRINE GLAND.

**endocrinology** *n.* the study of the morphology, physiology, biochemistry, and pathology of the endocrine glands. See also NEUROENDOCRINOLOGY; PSYCHONEUROENDOCRINOLOGY. —**endocrinological** *adj.* —**endocrinologist** *n.*

**endoderm** *n.* the innermost of the three primary GERM LAYERS of a developing embryo. It gives rise to the gastrointestinal and respiratory tracts and some glands. —**endodermal** *adj.*

**end of life** the variable period during which dying individuals and their families, friends, and caregivers face issues related to the imminent prospect of death. The end-of-life concept is a way of considering the total context of an approaching death, rather than medical factors only. End-of-life issues include decisions relating to the nature of terminal care (hospice or traditional), whether to resuscitate, the distribution of property and assets, funeral and memorial arrangements, and leave taking and possible reconciliations with family and friends. See also ADVANCE DIRECTIVE; INFORMED CONSENT.

**endogamy** *n.* the custom or practice of marrying within one's KINSHIP NETWORK, CASTE, or other religious or social group. Compare EXOGAMY. —**endogamous** *adj.*

**endogenous** *adj.* originating within the body as a result of normal biochemical or physiological processes (e.g., ENDOGENOUS OPIOIDS) or of predisposing biological or genetic influences (e.g., ENDOGENOUS DEPRESSION). Compare EXOGENOUS. —**endogenously** *adv.*

**endogenous attention** see VOLUNTARY ATTENTION.

**endogenous cannabinoid (eCB)** any of several CANNABIS-like substances produced within the bodies of vertebrates. The primary endogenous cannabinoids are **anandamide** (arachidonoyl ethanolamide [AEA]) and **2-arachidonoylglycerol (2-AG)**, small fatty molecules that are synthesized from ARACHIDONIC ACID only when needed and then rapidly degraded by the enzymes **fatty acid amide hydrolase (FAAH)** and **monoacylglycerol lipase (MAGL)**. Although widely distributed throughout the body, endogenous cannabinoids are concentrated particularly within the central nervous system, where they function as NEUROMODULATORS, regulating communication between neurons by influencing the release of GAMMA-AMINOBUTYRIC ACID, GLUTAMATE, and other neurotransmitters at SYNAPSES. Together, the endogenous cannabinoids, their respective synthetic and degradative enzymes, and the different types of CANNABINOID RECEPTORS to which they bind comprise the **endogenous cannabinoid system**.

In addition to regulating synaptic transmission, this system plays an important role in an array of other processes, including those related to immune function, pain perception, learning and memory, energy expenditure and metabolism, appetite control, nausea and vomiting, mood, responses to stress, facilitation of motor behavior, and the motivational and rewarding aspects of numerous behaviors and stimuli (including several recreational drugs). The endogenous cannabinoid system also has NEUROPROTECTIVE properties and performs additional functions within the circulatory, digestive, and respiratory systems. Alterations of this system may be involved in the pathophysiology of a variety of disorders, including multiple sclerosis, glaucoma, chronic pain, substance abuse and dependence, anxiety, bipolar disorder, depression, schizophrenia, eating disorders, and obesity. Indeed, growing research evidence

suggests that manipulation of the endocannabinoid system could be a therapeutic target for these and other neurological and psychiatric conditions. Also called **endocannabinoid**. See also CANNABINOID.

**endogenous cue** a CUE, such as a centered arrow, that instructs a participant in a task to direct attention to a particular location but does not automatically draw attention to that location. It initiates a voluntary movement of attention. Compare EXOGENOUS CUE.

**endogenous depression** depression that occurs in the absence of an obvious psychological stressor and in which a biological or genetic cause is implied. Compare REACTIVE DEPRESSION.

**endogenous opioid** a substance produced in the body that has the analgesic and euphoric effects of morphine. Three families of endogenous opioids are well known: the **enkephalins**, **endorphins**, and **dynorphins**. All are NEUROPEPTIDES that bind to OPIOID RECEPTORS in the central nervous system; they are mostly inhibitory, acting like opiates to block pain. They bind relatively nonselectively to opioid receptors, although enkephalins bind preferentially to the delta opioid receptors and dynorphins to kappa opioid receptors. Three other endogenous opioid peptides have been identified: **nociceptin/orphanin FQ (N/OFQ)** and **endorphins 1 and 2**. Also called **opioid neurotransmitter**.

**endogenous oscillator** a NEURAL CIRCUIT that generates regularly repeating sequences of neural activity or behavior. In the context of chronobiology, it refers to the BIOLOGICAL CLOCK. See also CIRCADIAN OSCILLATOR.

**endogenous research** research that is based on information inherent in a specific area or system, without taking into account outside, independent information.

**endogenous rhythm** see BIOLOGICAL RHYTHM.

**endogenous smile** a spontaneous or reflexive smile that is observed when an infant, early in life, is in a state of REM SLEEP. Characterized by a simple turning up of the corners of the mouth, such smiles are seen from birth and are not elicited by social stimulation. Compare SOCIAL SMILE.

**endogenous thyrotoxicosis** see THYROTOXICOSIS.

**endogenous variable** a DEPENDENT VARIABLE whose values are determined, caused, or explained by factors within the model or system under study. Compare EXOGENOUS VARIABLE.

**endolymph** *n.* the fluid contained in the membranous labyrinth of the inner ear, that is, within the SCALA MEDIA, SEMICIRCULAR CANALS, SACCULE, and UTRICLE. —**endolymphatic** *adj.*

**endolymphatic potential** a DC electric potential of approximately 80 mV measurable with electrodes inserted into the endolymph in the scala media. Also called **endocochlear potential**.

**endometrium** *n.* the layer of cells lining the uterus. It varies in thickness during the MENSTRUAL CYCLE, reaching a peak of cellular proliferation approximately 1 week after ovulation, in preparation for implantation of a fertilized ovum, and sloughing off as menstrual flow 2 weeks after ovulation if the ovum is not fertilized. —**endometrial** *adj.*

**endomorph** *n.* a constitutional type (SOMATOTYPE) in SHELDON'S CONSTITUTIONAL THEORY OF PERSONALITY characterized by a soft, round physique, which—according to this theory—is highly correlated with VISCEROTONIA.

Also called **endomorph body type**. —**endomorph** *adj.* —**endomorphy** *n.*

**endomorphin** *n.* see ENDOGENOUS OPIOID.

**endomusia** *n.* literally, inner music (Greek); the reproduction of a tune or piece of music in the mind.

**endophasia** *n.* literally, inner speech (Greek); the reproduction of spoken language in the mind. See also COVERT SPEECH.

**endophenotype** *n.* a type of BIOLOGICAL MARKER that is simpler to detect than genetic sequences and that may be useful in researching vulnerability to a wide range of psychological and neurological disorders. Endophenotypes may be a useful link between genetic sequences and their external emotional, cognitive, or behavioral manifestations. [coined in the 1970s by U.S. behavioral geneticist and clinical psychologist Irving I. Gottesman (1930– ) and British psychiatrist James Shields (d. 1978)]

**endoplasm** *n.* the relatively less dense CYTOPLASM that fills the bulk of a cell, away from the periphery and excluding the nucleus. Compare ECTOPLASM. —**endoplasmic** *adj.*

**endoplasmic reticulum (ER)** a network of membranous tubules and sacs extending from the nucleus to the outer membrane of a typical animal or plant cell. It is responsible for the processing and modification of proteins and lipids, both for distribution within the cell and for secretion.

**endopsychic** *adj.* pertaining to nonconscious material or intrapsychic processes (i.e., processes occurring within the mind). Compare EXOPSYCHIC.

**endopsychic structure** in psychoanalysis, the internal structure of the mind or psyche. In Sigmund FREUD's formulation, the mind is divided into three components: the ID, EGO, and SUPEREGO. See STRUCTURAL MODEL.

**endoradiosonde** *n.* a miniature instrument consisting of recording devices and a radio transmitter that is implanted in or fed to a nonhuman animal in order to study internal reactions or behaviors.

**end organ** the structure associated with a motor or sensory nerve ending, such as a muscle END PLATE or a sensory receptor. The latter may be **encapsulated end organs**, which are enclosed in a membranous sheath and usually located in peripheral tissue, such as the skin. Kinds of encapsulated end organs include MEISSNER'S CORPUSCLES (sensitive to touch) and PACINIAN CORPUSCLES (sensitive to pressure).

**endorphin** *n.* any of a class of NEUROPEPTIDES, found mainly in the pituitary gland, that function as ENDOGENOUS OPIOIDS. The best known is BETA-ENDORPHIN; the others are **alpha-endorphin** and **gamma-endorphin**. The production of endorphins during intense physical activity is one explanation for the RUNNER'S HIGH or EXERCISE HIGH, as well as for an athlete's ability to feel little or no pain during a competition.

**endosomatic current** an electrical current produced by a living organism.

**endotherm** *n.* an animal whose body temperature is regulated chiefly by internal metabolic processes. The only true endotherms are mammals and birds. Such animals, formerly called **homeotherms**, are popularly described as warm-blooded. Compare ECTOTHERM. —**endothermic** *adj.* —**endothermy** *n.*

**endowment effect** the tendency of people to place a higher value on items once they own them or once these have been associated with the self in some other way. For example, an individual selling goods often prices them above what he or she would be willing to pay to acquire those same goods (i.e., selling prices exceed buying prices). The endowment effect is characterized by increased positive emotions toward the object. [coined in 1980 by U.S. economist Richard Thaler (1945– )]

**end plate** a specialized region of a muscle-cell membrane that faces the terminus of a motor neuron within a NEUROMUSCULAR JUNCTION. The depolarization that is induced in this muscular region when stimulated by a neurotransmitter released from the adjacent motor neuron terminus is called the **end-plate potential (EPP)**. A very small variation in this potential due to the random release of tiny amounts of a neurotransmitter at an axon terminal is called a **miniature end-plate potential**. Also called **motor end plate**.

**end spurt** the increased productivity or gain in performance frequently noted near the end of a task, series of trials, or day's work. It is also commonly observed in athletic endeavors, such as long-distance running. Compare INITIAL SPURT.

**end-stage renal disease** the terminal stage of chronic kidney failure, requiring the individual with the disease to undergo hemodialysis, peritoneal dialysis, or kidney transplant to survive. The psychological effects of living with the condition and its treatment can include depression arising from a sense of lost or limited personal control due to dependence on a dialysis machine, to dialysis-related diet restrictions, and the like. Body-image problems caused by transplantation can develop as well.

**end-stopped cell** a neuron in any VISUAL AREA of the cerebral cortex that is maximally responsive to a line of a certain length or to a corner of a larger stimulus. Such neurons have a reduced or absent response when the line or corner is extended beyond a certain point. End stopping is a characteristic of HYPERCOMPLEX CELLS in striate cortex.

**endurance activity** a physical activity that depends on aerobic capacity, that is, the ability to produce energy for muscles by using oxygen for long periods of time. Sport performances that are endurance activities include marathons, runs over 10,000 m, and triathlons. Also called **aerobic activity**. See AEROBIC EXERCISE; ANAEROBIC EXERCISE.

**enema** *n.* the injection of a liquid into the rectum via the anus or the liquid itself. Enemas are used to empty the bowel, to introduce radiopaque contrast media into the bowel for radiography, and to administer certain drugs in solution for absorption through the rectal mucosa.

**enema addiction** a dependence upon enemas to empty the bowel. This condition is often associated with EATING DISORDERS in which enemas are routinely used for purging. See also KLISMAPHILIA; LAXATIVE ADDICTION.

**energization theory** the theory that the subjective perception of a goal's value or attainability corresponds to the level of energy expended to reach that goal. [proposed by Jack W. BREHM and colleagues]

**energy drink** any of a group of widely available liquids that may contain large quantities of caffeine as well as sugar, taurine, ginseng, ginkgo biloba, B vitamins, antioxidants, and artificial sweeteners and that are used to increase energy, alertness, and endurance. Overuse has been

associated with agitation, anxiety, insomnia, and arrhythmias. Caffeinated alcoholic beverages are also considered to be energy drinks. In 2010, in response to concerns about the safety of these beverages, the U.S. Food and Drug Administration labeled caffeine an "unsafe food additive" to alcohol and effectively banned its use in alcoholic beverages.

**energy-flow system** any system in which the component organisms or entities convert energy into forms that can be used by the other organisms or entities, such that there is a constant energy flow through the entire system. An ECOSYSTEM is perhaps the clearest example of an energy-flow system. In psychology, Sigmund FREUD's early models of the psyche were essentially energy-flow models, in which LIBIDO was employed by the instincts to bring thoughts to consciousness while simultaneously employed by other parts of the psyche to keep them out of consciousness. More recently, a field known as **energy psychology** has emerged, which attempts to treat trauma and emotional problems by intervening in the energy flow of the body.

**enervate** *vb.* **1.** to weaken or deprive of energy. **2.** to surgically remove a nerve or a part of a nerve. —**enervation** *n.*

**engendering psychology** the project of developing an approach to psychological issues that is sensitive to questions of gender. See FEMINIST PSYCHOLOGY; WOMAN-CENTERED PSYCHOLOGY. [introduced by U.S. psychologist Florence L. Denmark (1932– )]

**engineering anthropometry** measurement of the static and dynamic features of the human body, including dimensions, movements, and center of gravity, and the application of these data to the design and evaluation of equipment for human use.

**engineering controls** the avoidance of hazards through redesign of machinery or equipment (e.g., by using guards, ventilation systems, and radiation shields) and the replacement or removal of unsafe systems or practices. Engineering controls are considered the first resort in the creation of a safe working environment, followed by ADMINISTRATIVE CONTROLS and the use of PERSONAL PROTECTIVE EQUIPMENT. See also HAZARD-CONTROL PROTOCOL.

**engineering model 1.** a belief or hypothesis that living organisms, including humans, can be viewed mechanistically, that is, as machines. **2.** in evaluation research, a simple comparison of treatment gains for different groups, some of which have been exposed to the treatment program of interest. Compare MEDICAL MODEL.

**engineering psychology** a subfield of HUMAN FACTORS PSYCHOLOGY concerned with identifying the psychological principles that govern human interaction with environments, systems, and products and applying these principles to issues of engineering and design. **Engineering psychologists** may consult with architects and designers of various industrial and consumer products (e.g., airplanes, automobiles, home appliances, electronics and software applications) while specializing in such areas as ERGONOMICS, human-computer interaction, or USABILITY ENGINEERING. Engineering psychology is often used synonymously with HUMAN FACTORS ENGINEERING. See also EQUIPMENT DESIGN; HUMAN ENGINEERING; TOOL DESIGN; WORKSPACE DESIGN.

**English as a second language (ESL)** education in English for students who are not native English speakers,



most often with an emphasis on language proficiency. When English language proficiency is achieved, the use of English can be applied to the broader curriculum. It was formerly known as **English as a foreign language**.

**engram** *n.* the hypothetical MEMORY TRACE that is stored in the brain. The nature of the engram, in terms of the exact physiological changes that occur to encode a memory, is as yet unknown. The term was introduced by German biologist Richard Semon (1859–1918) in the early 1900s and was popularized by Karl S. LASHLEY in his 1950 paper “In Search of the Engram.” Also called **mneme**; **mnemonic trace**; **neurogram**.

**engulfment** *n.* **1.** extreme distress and anxiety related to feelings of being taken over by an external force. **2.** fear of close interpersonal relationships because of a perceived loss of independence and selfhood. This fear is common in those with feelings of personal insecurity, who experience relationships as overwhelming threats to personal identity. It may also be associated with BORDERLINE PERSONALITY DISORDER. [first described by British psychiatrist R. D. Laing (1927–1989)]

**enhancement** *n.* **1.** the use of genetic technology to produce superior offspring. **2.** more generally, any improvement in the nature or value of an entity.

**enjoyment** *n.* a perception of great pleasure and happiness brought on by success in or simple satisfaction with an activity.

**enkephalin** *n.* see ENDOGENOUS OPIOID.

**Enlon** *n.* a trade name for EDROPHONIUM.

**enmeshment** *n.* a condition in which two or more people, typically family members, are involved in each other's activities and personal relationships to an excessive degree, thus limiting or precluding healthy interaction and compromising individual autonomy and identity.

**enrichment** *n.* **1.** enhancement or improvement by the addition or augmentation of some desirable property, quality, or component. For example, the INSTRUMENTAL ENRICHMENT program was originally designed to help pupils with intellectual disability improve their metacognitive and cognitive skills; JOB ENRICHMENT policies are designed to enhance QUALITY OF WORKLIFE and thus employees' interest in and attitude toward work tasks; and MARRIAGE-ENRICHMENT GROUPS are intended to enhance the interpersonal relationships of married couples. **2.** the provision of opportunities to increase levels of behavioral or intellectual activity in an otherwise unstimulating (i.e., impoverished) environment. For example, the provision of play materials and opportunities for social contacts has been shown to enhance the development of young children. In laboratory studies of animal behavior, the addition of physical features or task requirements to an environment elicits a more natural behavioral repertoire from the animals. Devices, such as puzzle boxes and complex feeders, are used to reduce boredom and STEREOTYPY. Enriched environments have been shown to induce greater brain neuronal growth and complexity in rats than do standard caging environments. Also called **environmental enrichment**.

**enrichment program** **1.** an educational program designed to supplement the academic curriculum and facilitate the intellectual stimulation of children at risk of educational difficulties or failure, particularly those from culturally or economically disadvantaged homes. Activities, such as arts and music instruction, theater, and sci-

ence experiments, are typically provided through special preschool or kindergarten classes and intended to facilitate the acquisition of oral, written, motor, and interpersonal skills. **2.** an educational program designed to provide gifted children with an expanded curriculum. Enrichment programs most often focus on expanding the horizons of learning by means of auxiliary instruction rather than by providing accelerated instruction in the regular curriculum.

**entelechy** *n.* in philosophy and metaphysics, actuality or realization as opposed to potentiality. ARISTOTLE used the word to refer to the soul (psyche), seen as that form within the material being by virtue of which it achieves the actuality of its nature (see ACTUAL). Later philosophers employed the term in a similar vein. Gottfried Wilhelm LEIBNIZ referred to MONADS as being entelechy, or having entelechy, defined as the power to perfect their given nature (see NISUS). In certain vitalist philosophies and theories, entelechy refers to the vital force within an organism that allows for life, development, and self-fulfillment (see ÉLAN VITAL; VITALISM).

**enteric virus infection** a disease produced by one of the polio, Cocksackie, or echoviruses (called **enteroviruses**), which are members of the picornavirus family. Such infections include poliomyelitis, aseptic meningitis, herpangina, and myocarditis. The viruses have been classed as enteric because they multiply in the human gastrointestinal tract. Also called **enteroviral infection**.

**enterogastrone** *n.* a hormone secreted by the small intestine that inhibits the secretion of gastric juice by the stomach. It is released when the stomach contents pass into the small intestine.

**enthusiasm** *n.* a feeling of excitement or passion for an activity, cause, or object. —**enthusiastic** *adj.*

**entitativity** *n.* the extent to which a group or collective is considered by others to be a real entity having unity, coherence, and internal organization rather than a set of independent individuals. In general, groups whose members share a common fate, are similar to one another, and are located close together are more likely to be considered a group rather than a mere AGGREGATION. [first described by Donald CAMPBELL]

**entitlement** *n.* **1.** rights or benefits legally bestowed on a person or group, for example, by legislation or contract. **2.** unreasonable claims to special consideration, especially as a disturbance of self-concept in NARCISSISTIC PERSONALITY DISORDER.

**entitlement program** a program of the U.S. government that provides financial assistance and welfare benefits to individuals who meet requirements set by law (e.g., people with mental or physical disabilities). Entitlement programs are administered through MEDICARE, MEDICAID, SOCIAL SECURITY disability insurance, and similar funding sources.

**entity theory** see IMPLICIT SELF THEORY.

**entoptic** *adj.* originating within the eyeball itself. The term is used particularly to denote visual sensations caused by stimulation within the eye (**entoptic phenomena**), the classic example of which is seeing faint dark specks moving through the visual field when gazing at a clear, blue sky. These are shadows caused by blood cells moving through the vasculature on the surface of the retina.

**entorhinal cortex** a region of cerebral cortex in the

ventromedial portion of the temporal lobe. It has reciprocal connections with the HIPPOCAMPAL FORMATION and various other cortical and subcortical structures and is an integral component of the medial temporal lobe memory system. It is also involved in spatial navigation. Lesions in this area are used to study neural plasticity and working memory; they are also seen in temporal lobe epilepsy and the early stages of Alzheimer's disease.

**entrainment** *n.* the process of activating or providing a timing cue for a BIOLOGICAL RHYTHM. For example, the production of gonadal hormones in seasonally breeding animals can be a result of entrainment to increasing day length. The timing of CIRCADIAN RHYTHMS can be due to entrainment to either sunrise or sunset. See BRAINWAVE ENTRAINMENT.

**entrapment** *n.* **1.** a process in which one makes increasing commitments to a failing course of action or an unattainable goal in order to justify the amount of time and effort already invested, feeling helpless to do otherwise. An example is provided by a company that proceeds with the design and construction of a new building for its employees after economic and other changes significantly reduce profits, halt business growth, and result in staff layoffs that make the new space not only financially burdensome but also no longer necessary. See also ESCALATING COMMITMENT. **2.** a pathological condition in which swelling of surrounding tissue places excessive pressure on a nerve. Fibers located on the surface of the nerve usually bear the brunt of the compression, whereas interior fibers tend to be less affected. Repeated or long-term entrapment can cause nerve damage and muscle weakness. **3.** a law enforcement agent's provocation or inducement of an individual to commit an illegal action when that individual would not necessarily have engaged in the activity otherwise. If entrapment is proved, it can serve as a defense in a criminal prosecution.

**entrepreneurship** *n.* the assumption of all the risks of the creation, organization, and management of a business venture for the reward of future profits. **Social entrepreneurship** is the use of an entrepreneurial approach with similar assumed risks to create, organize, and manage a venture whose profits are used primarily to promote a positive return to society by effecting social change.

**entropy** *n.* **1.** a thermodynamic quantity providing a measure of the unavailability of the energy of a closed system to do work. **2.** in statistics, an indication of the degree of disorder, disequilibrium, or change of a closed system. For example, an **entropy measure** may be used to indicate the quality of classification in a CLUSTER ANALYSIS. Clusters with high similarity would have low entropy, whereas clusters with more DISPERSION would have higher entropy. **3.** in information theory, a measure of the efficiency with which a system transmits information.

**enucleation** *n.* **1.** the removal of an entire organic structure, such as a tumor or a bodily organ, without damaging the surrounding structure. Enucleation often refers to the removal of an eyeball in which the optic nerve and connective eye muscles have been severed so that the eye can be removed wholly and cleanly. See also AUTOENUCLEATION. **2.** the destruction or removal of the nucleus of a cell.

**enuresis** *n.* repeated involuntary urination in inappropriate places (clothing, floor, etc.) that occurs after the chronological age when continence is expected (generally 5 years old) and that is not due to a substance (e.g., a diuretic) or to

a general medical condition. Enuresis may occur during the day (**diurnal enuresis**), night (**nocturnal enuresis**), or both and is frequently associated with delayed bladder development, poor toilet training, and stressful situations. See also BED-WETTING. Compare URINARY INCONTINENCE.

**envelope** *n.* in acoustics, a slowly varying or "smoothed" change in amplitude. Usually it refers to temporal changes, such as those produced by amplitude MODULATION or BEATS, but it can also refer to the shape of a spectrum, as in a **spectral envelope**, or to spatial changes, as in the envelope of the traveling wave (see BASILAR MEMBRANE). "Slowly varying" is not precisely defined but generally refers to fluctuations whose rate is much less, by a factor of at least 0.5, than the highest rates in the temporal, spectral, or spatial representations. For example, the beats created by adding 1000 Hz and 1005 Hz tones have a quasi-sinusoidal envelope with a periodicity of 5 Hz, but there is no envelope created by the addition of 1000 Hz and 2005 Hz. Temporal and spectral envelopes are important in auditory perception.

**environment** *n.* the aggregate of external agents or conditions—physical, biological, social, and cultural—that influence the functions of an organism. The physical environment may be measured in terms of temperature, air pressure, noise, vibration, atmosphere, or sources of nutrients, which in turn may be specified by a range of values (e.g., a temperature scale). See also ECOLOGY. —**environmental** *adj.*

**environmental aesthetics** analysis of the role of natural objects and environmental characteristics in judgments of beauty, scenic quality, or visual preference. Aesthetic judgments may be heightened by moderate levels of complexity as conveyed, for example, by moving water or views from a height.

**environmental agnosia** **1.** the inability of individuals with some brain injuries to recognize familiar places and surroundings, including their homes and neighborhoods. **2.** loss of topographical familiarity. See also TOPOGRAPHICAL DISORIENTATION.

**environmental approach** a therapeutic approach in which efforts are directed either toward reducing external pressures (e.g., employment or financial problems) that contribute to emotional difficulties or toward modifying aspects of the individual's living or working space to improve functioning.

**environmental assessment** the evaluation of situational and environmental variables that influence behavior, based on the theory that disordered functioning may be rooted partly in the social system, or particular social context, rather than wholly in the individual and his or her personal characteristics. In an organizational context, for example, measures of manager support and availability of resources to accomplish a job would likely be used in the environmental assessment of employee job satisfaction.

**environmental attitudes** the beliefs and values of individuals or societies with respect to nature, ecology, or environmental issues. Research in this area examines how such factors as age, gender, and politics relate to people's environmental attitudes, the influence of ENVIRONMENTAL EDUCATION on attitudes, and the role of attitudes in PRO-ECOLOGICAL BEHAVIOR.

**environmental attribution** see SITUATIONAL ATTRIBUTION.

**environmental cognition** information processing in real-world settings, often with regard to memory for geographic location and way finding. See COGNITIVE MAP; LANDMARK.

**environmental constraint** any circumstance of a person's situation or environment that discourages the development of skills, independence, social competence, or adaptive behavior or inhibits the display of skills previously acquired. For example, living in a COMMUNITY RESIDENCE where staff prepare all the meals would act as an environmental constraint for someone who has learned how to make sandwiches, because it would provide no opportunity to display this ability.

**environmental control device** an ASSISTIVE TECHNOLOGY device with the capacity to regulate or manipulate aspects of a person's physical surroundings. Examples include devices that turn on lights, open doors, and operate appliances. Also called **electronic aid to daily living; environmental control unit**. See also CONTROL DEVICE; FEEDBACK DEVICE; SWITCH DEVICE; TARGET DEVICE.

**environmental deprivation** an absence of environmental conditions that stimulate intellectual and behavioral development, such as educational, recreational, and social opportunities. Environmental deprivation is often associated with social isolation and may be so severe that it causes PSEUDORETARDATION.

**environmental design** the creative planning of living and working areas to enhance their HABITABILITY. Environmental design may also be applied to the enhancement of recreational areas. Habitability factors range from simple shelter needs to complex and sophisticated environmental aesthetics and conformance factors, such as the use of specific colors of paint or levels of illumination for the optimum performance of tasks.

**environmental determinism** the view that psychological and behavioral characteristics are largely or completely the result of environmental conditions. Biological factors are considered to be of minor importance, exerting little if any influence. Compare BIOLOGICAL DETERMINISM; GENETIC DETERMINISM. See DETERMINISM; NATURE–NURTURE.

**environmental education** the development of principles and materials to raise awareness and change behaviors with respect to environmental problems. See ENVIRONMENTAL ATTITUDES; PROECOLOGICAL BEHAVIOR; SOCIAL TRAP.

**environmental enrichment** see ENRICHMENT.

**environmental field** in GESTALT PSYCHOLOGY, the entire context in which an event takes place and with which the components of the event interact.

**environmental hazards** environmental factors that pose some danger to an organism or community, such as exposed electrical wiring in a home or workplace and nuclear reactors or lead smelters in a community. Chronic exposure to environmental hazards is linked to both psychological and physiological stress.

**environmentalism** *n.* **1.** the concept that the environment and learning are the chief determinants of behavior and thus are the major cause of interpersonal variations in ability and adjustment; accordingly, behavior is largely modifiable. Compare HEREDITARIANISM. See also NATURE–NURTURE. **2.** a social movement and position that emphasizes the ecological relationship between humans and the

natural environment and strives to protect the environment as an essential resource. —**environmentalist** *n.*

**environmental justice** fair and impartial treatment with respect to the distribution of environmental hazards in the general population, such that no single group is exposed disproportionately to suboptimal environmental conditions at home, work, or school.

**environmental load theory** the theory that human beings have a limited ability to handle environmental stimuli. The limit is determined by the amount of information inputs that can be processed by the central nervous system. When the environmental load exceeds the individual's capacity for processing, the central nervous system reacts by ignoring some of the inputs. See also COGNITIVE OVERLOAD; INFORMATION OVERLOAD; SENSORY OVERLOAD; STIMULUS OVERLOAD.

**environmental manipulation** improving the well-being of people by changing their living conditions, such as by placing an abused or delinquent child in a foster home or by transferring an adult patient from a mental hospital to an ADULT HOME or a HALFWAY HOUSE.

**environmental modifications** changes in the home environment (e.g., installing ramps, grab bars) to accommodate an individual's disabilities and enable him or her to live more independently.

**environmental noise** see DIFFERENTIATION THEORY; NOISE.

**environmental press–competence model** a model of stress and adaptation in which adaptive functioning in the environment depends on the interaction between stimuli in a person's physical and social environment that place demands on that individual (**environmental press**) and the individual's competence in meeting these demands, which is shaped by such personal characteristics as physical health and cognitive and perceptual abilities. See also PERSON–ENVIRONMENT INTERACTION. [proposed in 1973 by U.S. geropsychologists M. Powell Lawton (1923–2001) and Lucille D. Nahemow (1933–2000)]

**environmental psychology** a multidisciplinary field that investigates the effects of the physical environment on human behavior and welfare. Influences studied may include environmental stressors (e.g., noise, crowding, air pollution, temperature); design variables (e.g., lighting); the design of technology (see ERGONOMICS); and larger, more ambient qualities of the physical environment, such as floorplan layouts, the size and location of buildings, and proximity to nature.

**environmental psychophysics** the application of psychophysical methods to problems in real-world environments, such as investigating the magnitude of odor created by a processing plant.

**environmental sounds agnosia** see AUDITORY AGNOSIA.

**environmental stress** any kind of STRESS caused by factors in one's physical and social surroundings.

**environmental stress theory** the concept that autonomic and cognitive factors combine to form an individual's appraisal of stressors in the environment as threatening or nonthreatening. Stressors perceived as threatening may lead to stress reactions involving physiological, emotional, and behavioral elements, which in turn may elicit strategies designed to cope with and potentially adapt to the threat.

**environmental therapy** therapy that addresses the client's interaction with his or her physical or social surroundings (or both) in an effort to promote greater cognitive, affective, and behavioral health. See MILIEU THERAPY; THERAPEUTIC COMMUNITY.

**envy** **1.** *n.* a NEGATIVE EMOTION of discontent and resentment generated by desire for the possessions, attributes, qualities, or achievements of another (the target of the envy). Unlike JEALOUSY, with which it shares certain similarities and with which it is often confused, envy need involve only two individuals—the envious person and the person envied—whereas jealousy always involves a threesome. See also PRIMAL ENVY. **2.** *vb.* to feel such discontent or resentment. —**envious** *adj.*

**enzyme** *n.* a protein that acts as a biological catalyst, accelerating the rate of a biochemical reaction without itself becoming permanently altered. Many enzymes require other organic molecules (COENZYMES) or inorganic ions (cofactors) to function normally. Most enzymes are named according to the type of reaction they catalyze; for example, glucosidases convert glucosides to glucose; acetylcholinesterase (see CHOLINESTERASE) splits and inactivates molecules of the neurotransmitter acetylcholine.

**enzyme induction** the ability of drugs or other substances to increase the activity of enzymes, especially hepatic (liver) enzymes, that are responsible for the metabolism of those drugs or other substances. The CYTOCHROME P450 hepatic enzymes, which are responsible for the metabolism of numerous psychotropic compounds, are susceptible to induction. Barbiturates, alcohol, benzodiazepines, some anticonvulsants, and steroids may induce hepatic enzymes, usually resulting in a decrease in activity of the drug or other substances metabolized via the same enzyme system. Substances contained in cigarette smoke, charbroiled meat, and environmental pollutants are also capable of enzyme induction.

**enzyme inhibition** the ability of drugs or other substances to impair or arrest the ability of enzymes, especially liver (hepatic) enzymes, to metabolize those drugs or other substances. The CYTOCHROME P450 enzymes that are responsible for the metabolism of numerous psychotropic drugs are susceptible to inhibition by psychotropics or other substances. Many of the SSRIs (selective serotonin reuptake inhibitors) inhibit the activity of enzymes for which they are SUBSTRATES, leading to increased concentrations of the SSRIs or other drugs that are metabolized by the same enzyme. Enzyme inhibition can be competitive, when a drug partially inhibits an enzyme by competing for the same binding site as the substrate (the compound on which the enzyme acts), or irreversible, when a drug binds so completely to an enzyme that it fundamentally alters the enzyme and even partial metabolism of other substances cannot take place.

**EOG** **1.** abbreviation for ELECTROOCULOGRAPHY or electrooculogram. **2.** abbreviation for ELECTROOLFACTOGRAPHY or electroolfactogram.

**eonism** *n.* the adoption by a male of a female role, or vice versa, as in TRANSVESTISM. Eonism is named for Charles Eon de Beaumont, a French political adventurer who died in 1810 after posing as a woman for many years.

**EP** abbreviation for EVOKED POTENTIAL.

**epena** *n.* a hallucinogenic snuff prepared from the bark of South American trees of the genus *Virola* and used in

Colombia, Brazil, and Venezuela. The bark is scraped from the trees and boiled to extract a red resin that is dried, ground, and mixed with wood ash. The active agents, which include dimethyltryptamine (see DMT), produce effects that are comparable to those of LSD. Also called **nyakwana**; **parica**; **yakee**.

**ependyma** *n.* the membrane lining the brain VENTRICLES and the CENTRAL CANAL of the spinal cord. —**ependymal** *adj.*

**ependymal cell** a type of nonneuronal central nervous system cell (GLIA) that comprises the ependyma and helps circulate cerebrospinal fluid.

**ependymoma** *n.* see GLIOMA.

**ephebophilia** *n.* sexual attraction to and arousal by adolescent children, usually early adolescents who are just going through puberty.

**ephedra** *n.* a bushy shrub (*Ephedra sinica*), known to Chinese herbalists as ma huang, that is indigenous to arid regions of the world, particularly Mongolia and northern China. The leaves contain significant amounts of the alkaloid stimulants **ephedrine** and **PSEUDOEPHEDRINE** and are traditionally made into a beverage. Both ephedrine and pseudoephedrine are strong sympathomimetic agents and therefore increase blood pressure, alertness, and anxiety, as well as causing peripheral symptoms of sympathetic activity (e.g., tremor, sweating). These agents also relax smooth muscle; hence, the plant and its active components have often been used as a remedy for asthma or other respiratory complaints. In addition, ephedra has been combined into many dietary supplements that are reputed to aid weight loss, increase energy, and enhance athletic performance. There is, however, little evidence of ephedra's effectiveness for these uses except for modest, short-term weight loss without any clear health benefit. It is toxic and potentially fatal, particularly in high doses or when combined with other stimulants, such as CAFFEINE; reported adverse events include headaches, insomnia, rapid or irregular heartbeat, nerve damage, muscle injury, psychosis, memory loss, heart attack, stroke, seizure, and death. In 2004, the U.S. Food and Drug Administration banned the sale of products containing ephedra, the first U.S. government ban of a dietary supplement.

**ephemeral** *adj.* fleeting, transient, or short-lived. The term literally means "lasting only one day." —**ephemera** *n.*

**EPI** abbreviation for EYSENCK PERSONALITY INVENTORY.

**epi-** *prefix* **1.** upon, above, or over. **2.** close or near. **3.** after or in addition to.

**epicritic** *adj.* denoting or relating to cutaneous nerve fibers involved in minute sensory discriminations, particularly those involving very small or near-threshold variations in temperature and touch sensations. Compare PROTOPATHIC.

**epidemic** *adj.* generally prevalent: affecting a significant number of people, particularly with reference to a disease or disorder not ordinarily present in a specific population or present at a much higher rate than is typical. Compare ENDEMIC; PANDEMIC.

**epidemic catalepsy** a situation in which CATALEPSY occurs in a number of individuals at the same time as a result of identification or imitation.

**epidemic hysteria** see COLLECTIVE HYSTERIA.

**Epidemiologic Catchment Area Survey (ECA Survey)** a telephone survey of mental disorders carried out in two waves from 1980 to 1985 using *DSM-III* and the DIAGNOSTIC INTERVIEW SCHEDULE (DIS). More than 20,000 people were surveyed in households, group homes, and long-term care institutions across the United States to obtain information on the prevalence and incidence of mental disorders, the use of services for mental health problems, and the extent to which those with mental disorders were underserved.

**epidemiology** *n.* the study of the incidence and distribution of specific diseases and disorders. The **epidemiologist** also seeks to establish relationships to such factors as heredity, environment, nutrition, or age at onset. Results of epidemiological studies are intended to find clues and associations rather than necessarily to show causal relationships. See also **INCIDENCE**; **PREVALENCE**; **RISK RATIO**. —**epidemiologic** or **epidemiological** *adj.*

**epidermis** *n.* **1.** the outer, protective, nonvascular layer of the skin of vertebrates. **2.** the outer layer of cells of various invertebrates. **3.** the outermost layer of cells covering the leaves and young parts of plants.

**epididymis** *n.* (*pl.* **epididymides**) an elongated tubule running along the top and back of the testis that stores spermatozoa received from seminiferous tubules within the testis. It empties into the VAS DEFERENS. —**epididymal** *adj.*

**epidural hematoma** an accumulation of blood (see **HEMATOMA**) in the space above the DURA MATER caused by rupture of a blood vessel (see **EXTRADURAL HEMORRHAGE**), typically due to trauma.

**epidural hemorrhage** see **EXTRADURAL HEMORRHAGE**.

**epigastric reflex** a SPINAL REFLEX that draws in the upper central region of the abdominal wall, elicited by a quick stroke with a pin from the nipple downward.

**epigenesis** *n.* **1.** the theory, now accepted, that prenatal development is a gradual, complex, and cumulative process involving successive differentiation of morphological structures from fertilized ovum to embryo to fetus. Compare **PREFORMISM**. **2.** the theory that characteristics of an organism, both physical and behavioral, arise from an interaction between genetic and environmental influences rather than from one or the other. See also **NATURE-NURTURE**. **3.** in genetics, the occurrence of a heritable change in gene function that is not the result of a change in the base sequence of the organism's DNA. See also **EPIGENETICS**. **4.** in the theory of Erik ERIKSON, the emergence of different goals at each stage of ego and social development. See ERIKSON'S EIGHT STAGES OF PSYCHOSOCIAL DEVELOPMENT. —**epigenetic** *adj.*

**epigenetic landscape** a visual metaphor that depicts development as a hill with valleys of various depths and steepness, to convey the idea that some aspects of development are directed along certain general pathways and likely to occur under most circumstances but that the exact sequence of paths varies across individuals and can be altered by sudden environmental or genetic change. [proposed by British biologist Conrad Hall Waddington (1905–1975)]

**epigenetics** *n.* the study of heritable chemical modifications to DNA that alter gene activity without changing NUCLEOTIDE sequence. Such modifications instead typically involve the attachment of additional material to the DNA molecule itself (DNA METHYLATION) or the structural altera-

tion of its associated proteins (CHROMATIN remodeling), which disrupt the normal development and functioning of cells by influencing gene activation, deactivation, transcription, and so forth. Epigenetic mechanisms have been proposed as the means by which environmental and psychosocial factors such as toxins and early childhood experiences interact with physiology: They affect neural function through changes in gene expression that lead to individual differences in cognition and behavior (e.g., learning, memory, aggression, affect). Research also suggests that some epigenetic changes of an individual can be passed down to more than one generation of descendants. Additionally, epigenetic abnormalities have been linked to the etiology of many diseases and mental disorders, including autoimmune disturbances, cancer, heart disease, anxiety, autism, depression, intellectual disability, schizophrenia, and substance abuse.

**epigenetic theory** the concept that mind and consciousness developed when living organisms reached a high level of complexity. See **EMERGENCE**.

**epilepsy** *n.* a group of chronic brain disorders associated with disturbances in the electrical discharges of brain cells and characterized by recurrent SEIZURES, with or without clouding or loss of consciousness. **Symptomatic epilepsy** is due to known conditions, such as brain inflammation, brain tumor, vascular disturbances, structural abnormality, brain injury, or degenerative disease; **idiopathic epilepsy** is of unknown origin or is due to nonspecific brain defects. Types of seizure vary depending on the nature of the abnormal electrical discharge and the area of the brain affected (see **ABSENCE SEIZURE**; **GENERALIZED SEIZURE**; **PARTIAL SEIZURE**; **TONIC-CLONIC SEIZURE**). Epilepsy was formerly known as **falling sickness**. Also called **seizure disorder**. See also **STATUS EPILEPTICUS**; **TEMPORAL LOBE EPILEPSY**. —**epileptic** *adj.*

**epilepsy surgery** neurosurgery to remove a part of the brain, often the anterior temporal lobe, that is the focus for intractable (uncontrollable) epileptic seizures. The goal of the surgery is to reduce or eliminate seizures.

**epileptic cry** a momentary cry produced by sudden contraction of the chest and laryngeal muscles during the tonic phase of a TONIC-CLONIC SEIZURE. Also called **initial cry**.

**epileptic furor** see **FUROR**.

**epileptiform** *adj.* resembling epilepsy. Also called **epileptoid**.

**epileptiform seizure** an episode that resembles an epileptic seizure. See also **NONEPILEPTIC SEIZURE**.

**epileptogenic** *adj.* describing any factor or agent that causes or potentially may induce epileptic seizures.

**epileptogenic focus** a discrete area of the brain in which originate the electrical discharges that give rise to seizure activity.

**epileptogenic lesion** an area of tissue damage in the brain that results in epileptic seizures. Epilepsy may result from various brain lesions—for example, head injury, laceration, tumor, or hemorrhage—arising either immediately after the injury or, in some cases, months or years later.

**epimenorrhagia** *n.* see **MENORRHAGIA**.

**epinephrine** *n.* a CATECHOLAMINE neurotransmitter and adrenal hormone that is the end product of the metabolism

of the dietary amino acid tyrosine. It is synthesized primarily in the adrenal medulla by methylation of norepinephrine, which itself is formed from DOPAMINE by the action of the enzyme dopamine  $\beta$ -hydroxylase. As a hormone, it is secreted in large amounts when an individual is stimulated by fear, anxiety, or a similar stress-related reaction. As a neurotransmitter, it is the primary stimulant of both ALPHA-ADRENERGIC RECEPTORS and BETA-ADRENERGIC RECEPTORS. Thus, it increases the heart rate and force of heart contractions, relaxes bronchial and intestinal smooth muscle, and produces varying effects on blood pressure as it acts both as a vasodilator and vasoconstrictor. Also called **adrenaline**.

**epiphany** *n.* a sudden perception of the essential nature of oneself, others, or reality.

**epiphenomenalism** *n.* the position that bodily (physical) events produce mental events, such as thoughts and feelings, but that mental events do not have causal power to produce bodily (physical) events. Thus, causality between the mental and the physical proceeds in one direction only. A more radical form of the same position would add that mental events lack causal efficacy to produce anything, including other mental events. The term was coined in 1902 by James WARD, but the concept itself predates his usage. For example, British philosopher Shadworth H. Hodgson (1832–1912) and British biologist Thomas Henry Huxley (1825–1895) wrote about it some 30 years earlier, with Huxley in 1874 famously likening mental events (e.g., consciousness) to the steam whistle of a locomotive: They are by-products of the locomotive but cannot affect the locomotive itself. Huxley's term for the concept was **conscious automatism**. See also MIND–BODY PROBLEM; REDUCTIONISM.

**epiphenomenon** *n.* (*pl.* **epiphenomena**) a mere by-product of a process that has no effect on the process itself. The term is used most frequently to refer to mental events considered as products of brain processes. Thus, though mental events are real in some sense, they are not real in the same way that biological states and events are real, and not necessary to the explanation of mental events themselves. Epiphenomena are conceived of as having no causal power. See EPIPHENOMENALISM. —**epiphenomenal** *adj.*

**epiphora** *n.* excessive secretion of tears, which is most commonly due to an organic condition causing an insufficient drainage of tears but may be associated with emotional stress, such as chronic anxiety or fear.

**episode** *n.* a noteworthy isolated event or series of events. An episode of an illness is an isolated occurrence, which may be repeated.

**episodic amnesia** a loss of memory only for certain significant events. Episodic amnesia may involve a transient ability to recall an event followed by periods of inability to access the memory.

**episodic buffer** a fourth component added to the 1974 tripartite model of WORKING MEMORY proposed by British cognitive psychologists Alan D. Baddeley (1934– ) and Graham J. Hitch (1946– ). Introduced in 2000 as a further subsidiary of the CENTRAL EXECUTIVE, the episodic buffer is a temporary multimodal store that combines information from the PHONOLOGICAL LOOP and VISUOSPATIAL SKETCHPAD subsystems of working memory with information about time and order to form and maintain an integrated, detailed representation of a given stimulus or event

that can then be deposited into long-term memory as necessary. It is “episodic” in the sense that it holds integrated episodes or scenes and a “buffer” in the sense of providing a limited capacity interface between systems using different representational codes. In addressing certain shortcomings of the original working memory model—particularly the failure to explain the process of CHUNKING and the dilemma of linking the two distinct representational formats of the loop and sketchpad—the episodic buffer provides a means to allow multiple sources of information to be considered simultaneously, thus creating a model of the environment that may be manipulated to solve problems and plan future behavior.

**episodic disorder** any disorder characterized by the appearance of symptoms in discrete, often brief, periods or episodes.

**episodic memory** the ability to remember personally experienced events associated with a particular time and place. As defined in 1972 by Endel TULVING, episodic memory supplements SEMANTIC MEMORY as a form of DECLARATIVE MEMORY. Although Tulving's original description of episodic memory required recollecting the three ‘Ws’ of an event—what, where, and when—it has since been revised to include a sense of self-awareness and a subjective conscious experience as well (termed AUTONOETIC consciousness). In other words, in addition to recalling the facts of a past event, an individual has to engage in “mental time travel” and remember that he or she was the one who lived the event. The hippocampus plays a key role in episodic memory formation and retrieval. Atrophy of this area and structures in the associated HIPPOCAMPAL FORMATION is a hallmark feature of Alzheimer's disease, although episodic memory also declines considerably with normal aging. See also AUTOBIOGRAPHICAL MEMORY.

**epistemic** *adj.* of or relating to knowledge or to EPISTEMOLOGY. The epistemic DRIVE, created by the desire for knowledge, is often considered a fundamental drive. See NEED FOR COGNITION.

**epistemic value** the extent to which a theory, model, or cognitive process (e.g., a sense perception or memory) is capable of providing accurate knowledge; also, any specific attribute of a theory or process that is considered to be a sign of its ability to convey such knowledge. For example, EALSIFIABILITY and EMPIRICAL GROUNDING are important epistemic values in science; consistency and clarity might be considered epistemic values in relation to memory.

**epistemology** *n.* the branch of philosophy concerned with the nature, origin, and limitations of knowledge. It is also concerned with the justification of truth claims. Mainly owing to the work of René DESCARTES, epistemology has been the dominant question in philosophy since the 17th century (see CARTESIANISM; CARTESIAN SELF; MODERNISM). In psychology, interest in epistemology arises from two principal sources. First, as the study of the behavior of human beings, psychology has long had interest in the processes of knowledge acquisition and learning of all sorts. Second, as a science, psychology has an interest in the justification of its knowledge claims. In connection with this concern, most work on epistemology in psychology has concentrated on the scientific method and on the justification of scientifically derived knowledge claims. In general, the guiding epistemology of psychology has been EMPIRICISM, although some approaches to the subject, such as psychoanalysis, the developmental psychology of Jean PIAGET, and the humanistic psychology of Carl ROGERS, are

heavily influenced by RATIONALISM. —**epistemological** *adj.*

**epistemophilia** *n.* the love of knowledge; the impulse to investigate and inquire. See also CURIOSITY.

**epithalamus** *n.* a portion of the DIENCEPHALON that is immediately above and behind the THALAMUS. It includes the PINEAL GLAND and the posterior COMMISSURE.

**epithelioma** *n.* any tumor that originates in cells of the epithelium. Skin cancer may begin as an epithelioma.

**epithelium** *n.* (*pl. epithelia*) the cellular layer covering the outer surface of the body and lining body cavities, such as the lungs and gastrointestinal tract. —**epithelial** *adj.*

**EPP** abbreviation for END-PLATE potential.

**EPPS** abbreviation for EDWARDS PERSONAL PREFERENCE SCHEDULE.

**EPQ** abbreviation for Eysenck Personality Questionnaire. See EYSENCK PERSONALITY INVENTORY.

**EPS** abbreviation for EXTRAPYRAMIDAL SYMPTOMS or syndrome.

**EPSDT** abbreviation for EARLY AND PERIODIC SCREENING, DIAGNOSIS, AND TREATMENT.

**epsilon alcoholism** see JELLINEK'S ALCOHOLISM SPECIES.

**epsilon movement** the perception of motion occurring when a white line on a black background is changed to a black line on a white background. Also called **epsilon motion**.

**EPSP** abbreviation for EXCITATORY POSTSYNAPTIC POTENTIAL.

**Epstein-Barr virus (EBV)** a herpes virus that infects most people, at various ages. Infection during childhood is asymptomatic or produces mild symptoms; in adolescence or young adulthood, EBV leads to infectious mononucleosis in up to half of cases. EBV has been associated with certain cancers (e.g., Burkitt's lymphoma), but its exact role in these diseases is not known. [Michael Anthony **Epstein** (1921– ) and Yvonne M. **Barr** (1932– ), British pathologists]

**EQ 1**, abbreviation for EDUCATIONAL QUOTIENT. **2**, see EMOTIONAL INTELLIGENCE QUOTIENT.

**equal-and-unequal-cases method** see METHOD OF EQUAL AND UNEQUAL CASES.

**equal-appearing-intervals method** see METHOD OF EQUAL-APPEARING INTERVALS.

**Equal Employment Opportunity Commission (EEOC)** a U.S. federal agency, created by the 1964 Civil Rights Act, that is responsible for enforcing the laws and regulations prohibiting discrimination by an employer against job applicants or current employees on the basis of race, sex, age, disability, ethnicity, religion, and national origin. See EQUAL OPPORTUNITY. See also AFFIRMATIVE ACTION; UNIFORM GUIDELINES FOR EMPLOYEE SELECTION PROCEDURES.

**equality law** see LAW OF EQUALITY.

**equality of variance** see HOMOGENEITY OF VARIANCE.

**equality stage** see DISTRIBUTIVE JUSTICE.

**equal loudness contour** the function relating DECIBELS sound-pressure level (dB SPL) to frequency for PURE TONES that have a loudness equal to that of a 1 kHz tone at

a fixed level. For example, a 100 Hz tone presented at 70 dB SPL is as loud as a 1 kHz tone presented at 60 dB SPL. This is a point on the equal loudness contour for a 60-phon reference. This function has been incorporated in audio circuitry as "loudness compensation," primarily in an attempt to correct for the decreased loudness of low frequencies when listening at low levels. See LOUDNESS.

**equal opportunity** under U.S. federal law, the principle that all individuals should have the opportunity to find employment and to succeed in their jobs regardless of race, age, color, religion, sex, disability, and national origin. The principle of equal opportunity also applies to education, health care, and social and other services, and in some states and municipalities, it has been extended to include sexual orientation. See also AFFIRMATIVE ACTION; AGE DISCRIMINATION IN EMPLOYMENT ACT; AMERICANS WITH DISABILITIES ACT; FOUR-FIFTHS RULE; REVERSE DISCRIMINATION; UNIFORM GUIDELINES FOR EMPLOYEE SELECTION PROCEDURES.

**equal rights amendment (ERA)** a proposed amendment to the U.S. Constitution that would guarantee equal rights under the law for both sexes. First proposed in 1923, it was approved by Congress in 1972 but failed to achieve ratification in 1982.

**equal sense-difference method** see METHOD OF EQUAL-APPEARING INTERVALS.

**equal weighting** see WEIGHTING.

**equated score** the score distribution from Measure B transformed to match the distribution of Measure A in one or more features. See TRANSFORMATION.

**equation** *n.* a formal, usually brief, statement showing that two expressions are the same or equal. In mathematics or statistics, an equation is often a statement with *y* on the left of an equal sign and an expression for delineating or modeling *y* on the right side. For example, a commonly used equation for a straight line is  $y = mx + b$ , where *m* stands for the slope of the line, *x* stands for different values along the X-AXIS, and *b* stands for the point where the line crosses the Y-AXIS.

**equilibration** *n.* in PIAGETIAN THEORY, the process by which an individual uses assimilation and accommodation to restore or maintain a psychological equilibrium, that is, a cognitive state devoid of conflicting SCHEMAS.

**equilibratory sense** see SENSE OF EQUILIBRIUM.

**equilibrium** *n.* **1**, a state of physical or mental balance or stability (e.g., in posture, physiological processes, psychological adjustment). See HOMEOSTASIS; SENSE OF EQUILIBRIUM; VESTIBULAR SYSTEM. **2**, a state of stability in any other system. See also DYNAMIC EQUILIBRIUM.

**equilibrium model of group development** in general, any conceptual analysis that assumes that the processes contributing to GROUP DEVELOPMENT fluctuate around, but regularly return to, a resting point where opposing forces are balanced or held in check. For example, U.S. social psychologist Robert Freed Bales (1916–2004) suggested that groups vary over time in the extent to which they stress the accomplishment of group tasks relative to the improvement of interpersonal relationships among group members.

**equilibrium-point model** a model of limb control in which the target of a movement is specified as an equilibrium point between the AGONIST and ANTAGONIST muscle groups acting on the limb. Variants of this model are called

the **mass-spring model** and the **lambda ( $\lambda$ ) model**. See also **IMPULSE-TIMING MODEL**.

**equilibrium potential** the state in which the tendency of ions (electrically charged particles) to flow across a cell membrane from regions of high concentration is exactly balanced by the opposing potential difference (electric charge) across the membrane.

**equine-assisted psychotherapy (EAP)** a form of **ANIMAL-ASSISTED THERAPY** in which a licensed mental health professional, in conjunction with an equine specialist, uses handling, grooming, and other activities with specially trained horses as part of psychological treatment for those with emotional and behavioral problems. Despite its unusual approach, the method is grounded in traditional therapeutic forms, notably **COGNITIVE BEHAVIOR THERAPY**, **EXPERIENTIAL PSYCHOTHERAPY**, and **GESTALT THERAPY**. The goal is to help clients, through attentive interactions with horses, to achieve self-esteem, self-awareness, confidence, trust, and empathy; to gain a sense of responsibility; and to develop better communication, teamwork, leadership, and social skills. The few empirical studies on the efficacy and long-term effects of EAP have been equivocal. Nonetheless, the technique has been applied to both children and adults, individually and in groups, and to a variety of conditions, including behavioral problems, relationship issues, grief, anxiety, anger, depression, posttraumatic stress disorder, attention-deficit/hyperactivity disorder, substance dependence, adjustment disorders, and eating disorders. EAP differs from **HIPPOTHERAPY**, which involves mounted exercises to help people with physical and developmental disabilities improve their balance and motor functions. Also called **equine-facilitated psychotherapy (EFP)**.

**equipercentile method** a procedure for showing how two measures are similar, such that a shared value of  $x$  on the two measurements implies that the probability of a person drawn at random having a score greater than  $x$  is the same for both measures.

**equipment automation** the extent to which equipment can operate without human intervention. For example, progress from manual feeds to fully automated feeds reflects an increasing degree of equipment automation.

**equipment design** an area of **HUMAN ENGINEERING** concerned with the design of work tools, home appliances, and machines of all kinds, including their displays and controls. One particularly important application is the design of transport systems, such as roads, road signs, and the vehicles that use them. The major goal is to see that the equipment is designed with **HUMAN FACTORS** in mind, such as safety, fatigue, convenience, comfort, and efficiency. See **TOOL DESIGN**; **WORKSPACE DESIGN**. See also **ENGINEERING PSYCHOLOGY**; **ERGONOMICS**.

**equipotentiality** **n. 1.** Karl S. LASHLEY's hypothesis that large areas of cerebral cortex have similar potential to perform particular functions, including learning and other complex processes (e.g., maze navigation), so that intact cortical areas may take over functions of damaged or destroyed areas. Proposed in 1929 following experimental observations of the effects of different brain lesions on rats' ability to learn a complex maze, the concept has been challenged by subsequent research showing that areas of cortex have relatively specific functions. Brain plasticity (adaptive shifting of function) is commonly observed after local cortical damage, however. See also **MASS ACTION**. **2.** in learning theory, the principle that any pair of stimuli can

be associated with equal ease, regardless of their nature or origin. Also called **law of equipotentiality**; **principle of equipotentiality**.

**equity stage** see **DISTRIBUTIVE JUSTICE**.

**equity theory** a theory of justice regarding what individuals are likely to view as a fair return from activities involving themselves and a number of other people. The theory posits that people compare the ratio of the outcome of the activity—that is, the benefits they receive from it (e.g., pay, fringe benefits, intrinsic gratifications, recognition)—to their inputs (e.g., effort, seniority, skills, social status) with the outcome-to-input ratios of those engaged in a comparable activity. Outcomes are equitable only when people receive benefits that are proportional to their inputs. See **EXTERNAL INEQUITY**; **INTERNAL INEQUITY**; **OVERPAYMENT INEQUITY**; **UNDERPAYMENT INEQUITY**.

**equivalence** **n.** a relationship between two or more items, scales, variables, or stimuli that permits one to replace another.

**equivalence class** a stimulus group whose members exhibit reflexivity, symmetry, and transitivity in the context of **CONDITIONAL DISCRIMINATIONS**. In other words, the members demonstrate **STIMULUS EQUIVALENCE** and hence may substitute for one another.

**equivalence paradox** the situation in which two different procedures produce very similar outcomes, despite having different initial assumptions or features. For example, two very different psychotherapy procedures may nonetheless produce very similar, positive outcomes, possibly due to the therapeutic relationship instead of the specific treatments. In statistics, the term refers to the fact that **PRINCIPAL COMPONENTS ANALYSIS** and **FACTOR ANALYSIS** often produce a similar pattern of dimensions and loadings, although they each have a different premise.

**equivalency test** an assessment of one's educational level regardless of whether one has completed a specific course of study. For example, by taking the appropriate equivalency test, one may obtain a high school diploma without completing high school state requirements.

**equivalent form** see **ALTERNATE FORM**.

**equivalent-forms reliability** see **ALTERNATE-FORMS RELIABILITY**.

**equivalents method** see **METHOD OF ADJUSTMENT**.

**equivalent stimulus** see **STIMULUS EQUIVALENCE**.

**equivocal death analysis** see **PSYCHOLOGICAL AUTOPSY**.

**equivocal sign** see **SOFT SIGN**.

**ER 1.** abbreviation for **ENDOPLASMIC RETICULUM**. **2.** abbreviation for evoked response (see **EVOKED POTENTIAL**).

**ERA** abbreviation for **EQUAL RIGHTS AMENDMENT**.

**erect** **adj. 1.** upright or vertical. See **PILOERECTION**; **POSTURE**. **2.** tumescent, as an erect penis (see **TUMESCENCE**).

**erectile dysfunction** the lack or loss of ability to achieve an erection. It may be primary, in which a man has never been able to achieve erection sufficient for sexual intercourse; or secondary, in which a man is no longer capable of producing or maintaining an erection or can have one only in some situations (e.g., during masturbation) or with some partners. Causes of erectile dysfunction may be psychological or physical, including the effects of medica-



tions or drug abuse. If a man normally experiences a nocturnal erection or is able to induce an erection by masturbation, but cannot achieve or maintain an erection during sexual intercourse, the dysfunction is assumed to be due largely or solely to psychological factors. See MALE ERECTILE DISORDER.

**eremophilia** *n.* a pathological desire to be alone.

**erethism** *n.* **1.** an abnormally high degree of sensitivity to sensory stimulation in some or all parts of the body. It is associated with a number of conditions and is a major symptom of mercury poisoning. See also MAD HATTER'S DISEASE. **2.** any abnormally high degree of sensitivity, excitability, or irritability in response to stimulation, such as emotional erethism.

**ERF** abbreviation for EVENT-RELATED MAGNETIC FIELD.

**erg** *n.* **1.** a term used by Raymond B. CATTELL, in preference to *drive* or *instinct*, to denote a type of innate DYNAMIC TRAIT that directs an individual toward a goal and provides the motivational energy to obtain it. Examples include curiosity, self-assertion, gregariousness, protectiveness, and hunger. **2.** in physics, a unit of work or energy.

**ERG** abbreviation for electroretinogram. See ELECTRORETINOGRAPHY.

**ergasiology** *n.* see PSYCHOBIOLOGY.

**ergative** *n.* in English and some other languages, a verb that can be used either transitively or intransitively with the same noun to describe the same action. An example is *close* in *I closed the door* or *the door closed*: The direct object of the transitive verb (here *door*) becomes the subject of the intransitive verb. Such constructions are of great interest in CASE GRAMMAR and GENERATIVE GRAMMAR.

**ergic trait** a dynamic trait that motivates an individual to achieve an objective.

**ergodicity** *n.* a principle stating that the average value of a variable over a set of individuals in a defined space or time, such as a SAMPLE, will be the same as the average across a long TIME SERIES of points for a single individual. For example, if ergodicity held for a measure of satisfaction in an organization, the average satisfaction score of all employees in the organization would be the same as the average satisfaction score across a one-year period for one employee. In reality, ergodicity does not always hold, thus giving rise to different streams of NOMOTHETIC and IDIOGRAPHIC research, which focus on the group or the individual, respectively.

**ergograph** *n.* a device used to record the work capacity or fatigue of a muscle or muscle group. The output of an ergograph is called an **ergogram**, indicating the amount of work done or the physical exertion of the muscles.

**ergomania** *n.* see WORKAHOLISM.

**ergometry** *n.* the measurement of physical work performed by the muscles under various task demands. —**ergometric** *adj.*

**ergonomics** *n.* the discipline that applies a knowledge of human abilities and limitations drawn from physiology, BIOMECHANICS, ANTHROPOMETRY, and other areas to the design of systems, equipment, and processes for safe and efficient performance. A practitioner in the field is sometimes called an **ergonomist**. Speciality areas include COGNITIVE ERGONOMICS, COMMUNICATION ERGONOMICS, CULTURAL ERGONOMICS, INDUSTRIAL ERGONOMICS, MACROERGONOMICS,

and OCCUPATIONAL ERGONOMICS. This term is often used synonymously with HUMAN FACTORS. See also HUMAN SYSTEMS INTEGRATION. —**ergonomic** *adj.*

**ergonomic traps** components of a design that contribute to the probability of accidents and human error. Designs that are not intuitive or that violate normal human tendencies in terms of behavior and mental processing contain ergonomic traps. For example, clothes irons with the power cable on the right side present an ergonomic trap to someone who is left-handed. See BEHAVIOR-BASED SAFETY.

**ergonovine** *n.* see ERGOT DERIVATIVE; OXYTOCIC.

**ergot alkaloid** any of a group of pharmacologically active substances derived from the parasitic fungus *Claviceps purpurea*, which grows naturally on rye and other grains. Although highly toxic, ergot alkaloids have been used for centuries by midwives to induce abortion or labor. A number have been isolated, including lysergic acid, and the compounds are sometimes utilized as adrenergic blocking agents (see ERGOT DERIVATIVE). Epidemics of ergot poisoning (**ergotism**) were widespread in Europe until relatively modern times; symptoms included peripheral vasoconstriction (occasionally to the point of gangrene) and changes in mental functioning, including visual hallucinations. Because of the pharmacological relationship between ergot and LSD (lysergic acid diethylamide), the hallucinogenic effects are similar to those of LSD.

**ergotamine** *n.* an alkaloid drug (an ERGOT DERIVATIVE) used in the treatment of vascular headaches, including migraines. The exact nature of its therapeutic action is unknown, but ergotamine is believed to constrict the dilated cranial blood vessels responsible for headache symptoms. U.S. trade name (among others): **Cafergot**.

**ergot derivative** any of a group of ADRENERGIC BLOCKING AGENTS with selective inhibitory activity, derived from ERGOT ALKALOIDS. Ergot derivatives act on the central nervous system in a complex manner and, in various forms and doses, can both stimulate and depress higher brain centers. A circulatory effect is vasoconstriction. Some of these agents, including ERGOTAMINE, are used in the control of migraine headaches, sometimes combined with other drugs (e.g., caffeine). The derivative ergonovine is used as an OXYTOCIC.

**ergotherapy** *n.* treatment of disease by muscular exercise. This term is used in Europe; it is not common in the United States.

**ergotropic** *adj.* related to or concerning a capacity or propensity for expenditure of energy, that is, for activity, effort, or work. Compare TROPHOTROPIC.

**ERG theory** abbreviation for EXISTENCE, RELATEDNESS, AND GROWTH THEORY.

**Erhard Seminar Training (est; EST)** a controversial group therapy technique and personal development training system introduced in 1971. It purports to be consciousness expanding, borrowing from business-world motivation techniques and various theories of psychology. It was renamed **Landmark Forum** in 1985. [Werner Erhard (born John Paul Rosenberg; 1935– ), U.S. consultant and lecturer]

**Erichsen's disease** a disorder characterized by back pain and other spinal symptoms that was first identified in 1866 (at a time when railroad transportation was becoming increasingly popular) and was believed to be a re-

sult of railroad accidents. As the state of medicine advanced, it was realized that these symptoms were not of organic origin but may have indicated either **MALINGERING** or a psychogenic disorder that may have been a precursor to posttraumatic stress disorder. Also called **railway spine**. [John Eric **Ericksen** (1818–1896), British surgeon]

**Ericksonian psychotherapy** a form of psychotherapy in which the therapist works with the client to create, through hypnosis (specifically through indirect suggestion) and metaphors, real-life experiences intended to activate previously dormant, intrapsychic resources. Also called **Ericksonian hypnotherapy**. [Milton H. **ERICKSON**]

**Eriksen flankers task** see **FLANKER TASK**. [Charles W. **Eriksen** (1923– ), U.S. psychologist]

**Erikson's eight stages of psychosocial development** the theory proposed by Erik **ERIKSON** that **EGO IDENTITY** is gradually achieved by facing goals and challenges during eight stages of development across the lifespan. The stages are (a) infancy: **BASIC TRUST VERSUS MISTRUST**; (b) toddler: **AUTONOMY VERSUS SHAME AND DOUBT**; (c) pre-school age: **INITIATIVE VERSUS GUILT**; (d) school age: **INDUSTRY VERSUS INFERIORITY**; (e) adolescence: **IDENTITY VERSUS IDENTITY CONFUSION**; (f) young adulthood: **INTIMACY VERSUS ISOLATION**; (g) middle age: **GENERATIVITY VERSUS STAGNATION**; and (h) older adulthood: **INTEGRITY VERSUS DESPAIR**.

**ERISA** acronym for **EMPLOYEE RETIREMENT INCOME SECURITY ACT**.

**erogenous zone** an area or part of the body sensitive to stimulation that is a source of erotic or sexual feeling or pleasure. Among the primary zones are the genitals, buttocks and anus, the breasts (especially the nipples), and the mouth.

**Eros** *n.* the god of love in Greek mythology (equivalent to the Roman Cupid), whose name was chosen by Sigmund **FREUD** to designate a theoretical set of strivings oriented toward sexuality, development, and increased life activity (see **LIFE INSTINCT**). In Freud's **DUAL INSTINCT THEORY**, **Eros** is seen as involved in a dialectic process with **THANATOS**, the striving toward reduced psychological tension and life activity (see **DEATH INSTINCT**). See also **LIBIDO**.

**erosion** *n.* the deterioration or corrosion of a physical setting from climate effects and from use by organisms, including human beings. For example, the degree of erosion evident in footpaths or trails in a woodland may be taken as an indication of their degree of use. Compare **ACCRETION**.

**erotica** *pl. n.* literature, illustrations, motion pictures, or other artistic material likely to arouse an emotional response through an aesthetic treatment of sexuality and sexual love. The term is sometimes used interchangeably with **PORNOGRAPHY**. However, the distinction is often made that erotica, unlike most pornography, does not involve violence, coercion, or exploitative sexuality, instead depicting sexuality in a positive manner. [from *erotic* (Greek *erotikos*, derived from *eros*: "love")]

**erotic asphyxiation** sexual pleasure associated with restriction of breathing during sexual activity. See **ASPHYXOPHILIA**; **AUTOEROTIC ASPHYXIA**.

**erotic delusion** the false perception or belief that one is loved by or has had a sexual affair with a public figure or

other individual. Also called **erotomania**; **erotomantic delusion**. See **CLÉRAMBAULT'S SYNDROME**; **DELUSIONAL DISORDER**; **EROTIC PARANOIA**; **SIMENON'S SYNDROME**.

**erotic feminism** a type of **FEMINISM** that emphasizes female sexuality and its expression as a means of opposing the exploitation of women and escaping male domination. This contrasts with some other tendencies in mainstream feminism, which can appear wary or even dismissive in their approach to erotic expression.

**erotic instinct** **1.** in psychoanalytic theory, the sex drive or **LIBIDO**. **2.** **EROS**, or the **LIFE INSTINCT**.

**eroticism** *n.* **1.** the quality of being sexually arousing or pleasurable or the condition of being sexually aroused. **2.** a preoccupation with or susceptibility to sexual excitement. **3.** the use of sexually arousing themes, images, or suggestions in entertainment or the arts. **4.** in psychoanalytic theory, the pleasurable sensations associated not only with stimulation of the genitals but also with nongenital parts of the body, such as the mouth or anus (see **ANAL EROTICISM**; **ORAL EROTICISM**). Also called **erotism**. See also **AUTOEROTICISM**; **EROTIZATION**. —**erotic** *adj.*

**eroticization** *n.* see **EROTIZATION**.

**erotic love** a type of love, identified in certain classification systems, that is characterized by strong sexual arousal. See also **LIMERENCE**; **PASSIONATE LOVE**.

**erotic paranoia** a disorder in which the individual experiences **EROTIC DELUSIONS**. Also called **erotomantic-type delusional disorder**. See **DELUSIONAL DISORDER**. See also **CLÉRAMBAULT'S SYNDROME**; **SIMENON'S SYNDROME**.

**erotic plasticity** the degree to which sexual desire and sexual behavior are shaped by social, cultural, and situational factors. See **BEHAVIORAL PLASTICITY**.

**erotic pyromania** see **PYROLAGNIA**.

**erotic type** see **LIBIDINAL TYPES**.

**erotism** *n.* see **EROTICISM**.

**erotization** *n.* the investment of bodily organs and functions with sexual pleasure and gratification. Common examples are the erotization of certain areas of the body, such as the oral or anal **EROGENOUS ZONES**; organs such as the skin; functions such as sucking, defecation, or urination; and olfactory sensations associated with sex. Theoretically, almost any interest or activity can be eroticized by the individual; for example, activities such as dancing and eating are not infrequently seen as erotic or as having erotic components. Also called **eroticization**; **libidinization**; **sexualization**. —**erotize** *vb.*

**erotogenesis** *n.* in classical psychoanalytic theory, the origination of erotic impulses from sources that may include the anal, oral, and genital zones. See **EROTIZATION**.

**erotogenic** *adj.* denoting or relating to any stimulus that evokes or excites sexual feelings or responses.

**erotogenic masochism** see **PRIMARY MASOCHISM**.

**erotographomania** *n.* an obsession with erotic writing that is accompanied by a pathological compulsion to write about sexual matters or draw sexual images, typically expressed through anonymous love letters or graffiti.

**erotolalia** *n.* speech that contains sexual obscenities, particularly as used to enhance gratification during sexual intercourse.

**erotomania** *n.* **1.** compulsive, insatiable sexual activity. **2.** see EROTIC DELUSION. —**erotomaniac** *adj.*

**erotomaniac delusion** see EROTIC DELUSION.

**erotophonophilia** *n.* see LUST MURDER.

**ERP** **1.** abbreviation for EVENT-RELATED POTENTIAL. **2.** abbreviation for EXPOSURE AND RESPONSE PREVENTION.

**ERP measure of attitudes** a physiological measure of attitudes based on electrocortical activity. The procedure makes use of the phenomenon that one component of EVENT-RELATED POTENTIALS (ERPs), the late positive potential (or P300), varies as a function of categorization of stimuli. This component is large when a target stimulus is judged to be inconsistent with the context in which it is encountered and small when it is judged to be consistent with the context. To assess attitudes, the target ATTITUDE OBJECT is evaluated as part of a series of objects that are either positive or negative in nature. If a large late positive potential is produced when the attitude object is evaluated in the negative context and a small positive potential is produced when it is evaluated in the positive context, this indicates a positive attitude. The reverse pattern indicates a negative attitude. [originally developed by U.S. psychologists John T. Cacioppo (1951– ), Stephen L. Crites Jr. (1967– ), and their associates]

**ERP measures of intelligence** measures of intelligence elicited by observing EVENT-RELATED POTENTIALS (ERPs) in the brain in response to various kinds of stimuli. These measures show reliable correlations with traditional measures of intelligence, with the level of the correlation depending on the particular potential being measured. For example, P300, a positive potential observed roughly 300 ms after presentation of a stimulus, tends to be related to effectiveness in coping with novelty and appears to be related to intelligence.

**error** *n.* **1.** a deviation from true or accurate information (e.g., a wrong response, a mistaken belief). **2.** in experimentation, any change in a DEPENDENT VARIABLE not attributable to the manipulation of an INDEPENDENT VARIABLE. **3.** in statistics, a deviation of an observed score from a true score, where the true score is often defined by the mean of the particular group or condition in which the score being assessed for error occurs, or from the score predicted by a model. Errors generally are categorized as SYSTEMATIC ERROR or RANDOM ERROR. See also RESIDUAL.

**error analysis** **1.** the study of HUMAN FACTORS and engineering-design factors that may result in production or operation errors. See also ACCIDENT ANALYSIS; FAILURE MODES AND EFFECTS ANALYSIS; FAULT TREE ANALYSIS; JOB-SAFETY ANALYSIS. **2.** a systematic analysis of the language corpus obtained from second-language learners to identify ways in which the linguistic forms systematically deviate from target-language norms and to make inferences about the learner's state of second-language development. See FOSILIZATION; INTERLANGUAGE; LANGUAGE TRANSFER.

**error-choice technique** an INDIRECT ATTITUDE MEASURE that consists of a series of objective-knowledge multiple-choice questions about an ATTITUDE OBJECT. These questions are constructed so that people are unlikely to know the true answers, but with response options that imply positive or negative evaluations of the attitude object. For example, an error-choice measure of attitudes toward capital punishment might include questions about the percentage of people falsely convicted for capital crimes

and the percentage difference in the number of violent crimes in states with and without capital punishment. The procedure is based on the assumption that participants will use their attitudes as a basis for guessing; that is, they will tend to select answers that support their attitudes. Attitudes are assessed by computing the number of positive response options selected relative to the number of negative response options selected. Also called **information-error technique**.

**errorless learning** a method that prevents the production of incorrect answers during the learning period. Specifically, learning occurs across several sessions but memory is not tested until the last session. It is thought to be more efficient than standard trial-and-error learning because it eliminates INTERFERENCE.

**error method** see METHOD OF ADJUSTMENT.

**error of anticipation** in the METHOD OF LIMITS, an error in which the participant responds *target present* before it is actually detected, based on the knowledge that the stimuli are being presented in an ascending order.

**error of commission** a category of HUMAN ERROR in which an operator performs an incorrect or additional action, such as pressing a control button twice, leading to inappropriate or duplicate performance of a function. Compare ERROR OF OMISSION.

**error of habituation** in the METHOD OF LIMITS, a tendency to continue with the previous response (either *target present* or *target absent*) beyond the point at which a transition in judgments should occur.

**error of omission** a category of HUMAN ERROR in which an operator fails to perform a necessary step or action, such as failing to press a control button, leading to the failure of a function. Compare ERROR OF COMMISSION.

**error of refraction** see REFRACTIVE ERROR.

**error rate** the frequency with which errors are made. Examples include the proportion of an experimenter's data recordings that are wrong or the number of TYPE I ERRORS that occur during SIGNIFICANCE TESTING.

**error score** in CLASSICAL TEST THEORY, the difference between a person's observed measurement or score and his or her expected measurement or score. Also called **residual score**.

**error sum of squares** the difference between a score and the mean score, multiplied by this same difference. It is part of the denominator of the F RATIO in an ANALYSIS OF VARIANCE and represents the amount of variation in the DEPENDENT VARIABLE that cannot be explained by the INDEPENDENT VARIABLES. Also called **residual sum of squares**; **sum of squared errors** (SSE). Compare REGRESSION SUM OF SQUARES.

**error term** the element of a statistical equation that indicates the amount of change in the DEPENDENT VARIABLE that is unexplained by change in the INDEPENDENT VARIABLES. Also called **disturbance term**; **residual term**.

**error variance** the element of variability in a score that is produced by extraneous factors, such as measurement imprecision, and is not attributable to the INDEPENDENT VARIABLE or other controlled experimental manipulations. Error variance usually indicates how much random fluctuation is expected within scores and often forms part of the denominator of test statistics, such as the F RATIO in an

ANALYSIS OF VARIANCE. Also called **residual error**; **residual variance**; **unexplained variance**.

**erythema multiforme major** a skin condition due to hypersensitivity to certain infections and medications. Previously thought to be a form of STEVENS-JOHNSON SYNDROME, it is now generally considered to be a distinct condition.

**erythro-** (**erythr-**) *combining form* red.

**erythropoietin** *n.* a protein produced by the kidneys and liver that stimulates the production of red blood cells (**erythrocytes**) in the bone marrow and maintains erythrocytes in the circulation at an optimal level.

**erythropsia** *n.* see CHROMATOPSIA.

**Esalen Institute** an alternative educational center in California, founded in 1962, where enhancement of well-being is approached through a number of meditative and New Age therapies. Therapists and members of the general public participate in seminars, workshops, experiential programs, and other events that are designed to promote self-exploration and enhance relationships with others.

**ESB** abbreviation for ELECTROSTIMULATION OF THE BRAIN.

**escalating aggression** increasing intensity or severity of hostile or destructive behavior, often to the point of violence. This process is often associated with assaultive behavior, DOMESTIC VIOLENCE, and the CYCLE OF VIOLENCE.

**escalating commitment** continued commitment and increased allocation of resources to a failing course of action, often in the hope of recouping past losses associated with that course of action. It is often associated with expenditures and decision making in the development of new products, when a company increases the allocation of resources to a failing product, regardless of the low probability of its success, in an attempt to recover some of its initial investment.

**escape behavior** any response designed to move away from or eliminate an already present aversive stimulus. Escape behavior may be mental (through fantasy or daydreams) or behavioral (physical withdrawal from a noxious stimulus or a conditioned response, as when an animal taps a lever in order to terminate a shock). See also ACTIVE AVOIDANCE. Compare AVOIDANCE BEHAVIOR.

**escape conditioning** the process by which a subject acquires a response that results in the termination of an aversive stimulus. For example, if a monkey learns that pulling a string eliminates a loud noise, escape conditioning has occurred. Also called **escape learning**; **escape training**. See also AVOIDANCE CONDITIONING.

**escape from freedom** a false solution to an individual's problems of loneliness and isolation, in which he or she seeks refuge in social conformity. See also IDENTITY NEED. [defined by Erich FROMM]

**escape from reality** a defensive reaction involving the use of fantasy as a means of avoiding conflicts and problems of daily living. See also FLIGHT FROM REALITY.

**escape into illness** see FLIGHT INTO ILLNESS.

**escape mechanism** see DEFENSE MECHANISM.

**escape titration** a procedure in which an animal, presented with an aversive stimulus that increases in intensity over time, can give a response to decrease the stimulus intensity by some fixed (usually small) amount. By respond-

ing, therefore, the subject can control the intensity of the stimulus at virtually any level within the range set by the experimenter. Also called **fractional escape**.

**escapism** *n.* the tendency to escape from the real world to the delight or security of a fantasy world. Escapism may reflect a periodic, normal, and common impulse, as might be seen in harmless DAYDREAMS, or it may be evidence of or accompany symptoms of neurosis or more serious mental pathology. —**escapist** *adj.*

**Eskalith** *n.* a trade name for LITHIUM.

**ESL** abbreviation for ENGLISH AS A SECOND LANGUAGE.

**ESM** abbreviation for EXPERIENCE-SAMPLING METHOD.

**esophageal speech** a type of phonation, not involving the larynx, in which the air supply originates in the narrow upper portion of the esophagus, with the pharyngo-esophageal segment (the sphincterlike muscle at the junction of the LARYNGOPHARYNX and the esophagus) acting as a neoglottis (vibratory apparatus). Compare BUCCAL SPEECH.

**esophoria** *n.* an inward deviation of one eye that is due to a muscular imbalance and that interferes with binocular vision. Esophoria is a form of HETEROPHORIA. See also PHORIA.

**esotropia** *n.* see CROSS-EYE; TROPIA.

**ESP** abbreviation for EXTRASENSORY PERCEPTION.

**espanto** *n.* see SUSTO.

**ESP cards** see ZENER CARDS.

**ESP forced-choice test** in parapsychology experiments, a technique in which a participant's "calls," or guesses, are restricted to a predetermined set of TARGETS, as with ZENER CARDS. The main advantages of this procedure are that the success or failure of the participants' calls should be (a) unambiguous and (b) statistically measurable, enabling them to be compared with chance expectations.

**ESP free-response test** in parapsychology experiments, a technique in which a participant's "calls," or guesses, are not restricted to a predetermined set of TARGETS. The calls are then correlated to possible targets by a process of PREFERENTIAL MATCHING.

**esprit de corps** a feeling of unity, commitment, purpose, and COLLECTIVE EFFICACY shared by most or all of the members of a cohesive group or organization. Unlike GROUP MORALE, which can be low when members are dissatisfied or indifferent, esprit de corps implies confidence and enthusiasm for the group. See also GROUP COHESION; GROUP SOLIDARITY.

**ESS** abbreviation for EVOLUTIONARILY STABLE STRATEGY.

**ESSB** abbreviation for electrical self-stimulation of the brain. See INTRACRANIAL STIMULATION.

**essence** *n.* in philosophy, the presumed ontological reality at the core of something that makes it what it is and not something else. There have been various philosophical attempts to define the difference between what something necessarily is and what it merely coincidentally is (see ACCIDENTAL PROPERTY; ESSENTIAL PROPERTY). In psychology, the concept of essence is relevant to discussions of personhood, including questions of human agency and of the SELF. It is thus important for personality theories. The view

that human beings have certain important essential characteristics is known as ESSENTIALISM. —**essential** *adj.*

**essential amino acid** see AMINO ACID.

**essential fatty acid** see FATTY ACID.

**essential hypertension** high blood pressure (see HYPERTENSION) that is not secondary to another disease and for which no obvious cause can be found. It accounts for at least 85% of all cases of hypertension; risk factors include obesity, cigarette smoking, genetic factors, and psychological influences (e.g., aggressive personality, stressful environment).

**essentialism** *n.* in philosophy, the position that things (or some things) have ESSENCES; that is, they have certain necessary properties without which they could not be the things they are. In MARXISM, POSTMODERNISM, POSTSTRUCTURALISM, and certain feminist perspectives, essentialism is the rejected position that human beings have an essential nature that transcends such factors as social class, gender, and ethnicity. See also UNIVERSALISM.

**essential property** a characteristic of an idea or entity that is essential to its nature or existence. For example, being female is an essential property of mothers, whereas being tired is an ACCIDENTAL PROPERTY.

**essential tremor** trembling of the hands, head, or voice that appears to be hereditary. It is the most common type of movement disorder and is thought to be a benign condition, although its etiology and neurological substrates remain unclear. Also called **familial tremor**.

**est** abbreviation for ERHARD SEMINAR TRAINING.

**EST 1.** abbreviation for electroshock therapy or electroconvulsive shock therapy. See ELECTROCONVULSIVE THERAPY. **2.** abbreviation for ERHARD SEMINAR TRAINING.

**establishing operation** any event or procedure that changes the efficacy of a stimulus as a reinforcer or punisher. For example, in an operant-conditioning study where food is used to positively reinforce behavior, the establishing operation may be food deprivation, which sets up food as a rewarding and reinforcing stimulus.

**estazolam** *n.* a high-potency, intermediate-acting BENZODIAZEPINE used for the short-term treatment of insomnia. U.S. trade name: **ProSom**.

**esteem need** any desire for achievement, reputation, or prestige that is necessary for a sense of personal value and SELF-ESTEEM. Comprising the fourth level of MASLOW'S MOTIVATIONAL HIERARCHY, esteem needs are dependent upon the admiration and approval of others.

**Estes-Skinner procedure** another name for CONDITIONED SUPPRESSION. [after William K. ESTES and B. F. SKINNER, who developed the technique in 1941]

**esthesiometry (aesthesiometry)** *n.* the measurement of sensitivity to touch. Classically, two different versions of an instrument called an **esthesiometer** (or **aesthesiometer**) have been used. One is the **Frey esthesiometer** (named after the German physiologist Maximilian von Frey [1852–1932]), which consists of bristles of different lengths and thicknesses (called **von Frey hairs**) that are applied to determine the minimum pressure intensity required to produce a sensation. The other is a compasslike device to determine the smallest separation distance at which two points of stimulation on the skin are perceived as one. More sophisti-

cated techniques have now been developed, such as those involving electrodes.

**estimate 1.** *n.* a best guess of the value of a parameter of a DISTRIBUTION on the basis of a set of empirical observations. **2.** *vb.* to assign a value to a parameter in this way.

**estimating function** a mathematical equation used to approximate values and properties (e.g., bias, consistency, efficiency) for a specific parameter (e.g., regression coefficient) by using information from the sample data and the parameter of interest. This approach is particularly suitable when a LIKELIHOOD FUNCTION is not easily known.

**estimation** *n.* in statistics, the process of approximating a population PARAMETER from sample data while allowing for some degree of uncertainty by giving a range of values within which the parameter will most likely fall. Estimation usually requires a large random sample, from which one can calculate POINT ESTIMATE values, such as the mean and STANDARD DEVIATION, in the larger population of interest. The process of estimation also involves building a CONFIDENCE INTERVAL around the obtained sample value, plus and minus some MARGIN OF ERROR.

**estimator** *n.* a quantity calculated from the values in a sample according to some rule and used to give an approximation of the value in a population. For example, the sample mean or average is an estimator for the population mean; the value of the sample mean is the estimate.

**estimators** *pl. n.* the mental processes involved in judging quantity, as in the ability to recognize that a given set contains six elements rather than five or seven. Compare OPERATORS. [defined in this sense by U.S. statistician Andrew Gelman]

**estradiol** *n.* a naturally occurring steroid hormone that is the most potent of the ESTROGENS. It is secreted mainly by the ovary but also by the placenta and testes.

**estrangement** *n.* **1.** a state of increased distance or separation from oneself or others. See ALIENATION. **2.** a significant decrease or discontinuation of contact with individuals with whom one formerly had close relationships, such as a spouse or family member, due to apathy or antagonism. —**estranged** *adj.*

**estrogen** *n.* any of a class of STEROID HORMONES that are produced mainly by the ovaries and act as the principal female SEX HORMONES, inducing estrus in female mammals and secondary female sexual characteristics in humans. The estrogens occurring naturally in humans are ESTRADIOL, ESTRONE, and **estriol**, secreted by the ovarian follicle, corpus luteum, placenta, testes, and adrenal cortex. Estrogens are also produced by certain plants; these **phytoestrogens** may be used in the manufacture of synthetic steroid hormones. Estrogens are used therapeutically in ESTROGEN REPLACEMENT THERAPY and oral contraceptives and to treat certain menstrual disorders and some types of breast and prostate cancers.

**estrogen antagonist** see ANTIESTROGEN.

**estrogen replacement therapy** the administration of natural or synthetic estrogens, such as estradiol or ethinyl estradiol, for the relief of symptoms associated with menopause, surgical removal of the ovaries, or failure of the ovaries to develop. Although estrogen replacement therapy was once an extremely common therapy in menopausal women, studies have questioned its material long-term benefits, and its use has fallen off considerably in recent years. See HORMONE REPLACEMENT THERAPY.

**estrone** *n.* an ESTROGEN produced by ovarian follicles and other tissues. It is used therapeutically in the treatment of menopausal symptoms, estrogen-deficiency disorders, and certain cases of vaginitis.

**estrous cycle** the cyclical sequence of reproductive activity shown by female mammals except humans and other primates; see MENSTRUAL CYCLE. Animals that experience one estrous cycle per year are called **monestrous**; those that have multiple estrous cycles annually are **polyestrous**. See also DIESTRUS; ESTRUS; PROESTRUS.

**estrus** *n.* the stage in the ESTROUS CYCLE when a female animal is receptive to the male and willing to mate. Also called **heat**. —**estrous** *adj.*

**eszopiclone** *n.* a nonbenzodiazepine HYPNOTIC used for the short-term treatment of insomnia. Like the related drug ZALEPLON, it is relatively selective for a specific subunit on the GABA<sub>A</sub> RECEPTOR complex. Side effects include excessive sedation or confusion, dry mouth, and a bitter taste. U.S. trade name: **Lunesta**.

**eta** (symbol:  $\eta$ ) *n.* **1.** in STRUCTURAL EQUATION MODELING, denoting a LATENT VARIABLE. **2.** see CORRELATION RATIO.

**eta squared** (symbol:  $\eta^2$ ) a measure of the amount of variance in a DEPENDENT VARIABLE that can be explained by one or more INDEPENDENT VARIABLES, as calculated in a variety of statistical procedures. In an ANALYSIS OF VARIANCE, for example, eta squared is calculated as the SUM OF SQUARES for the treatment (i.e., sum of squared differences between a group mean and the GRAND MEAN) divided by the TOTAL SUM OF SQUARES. Eta squared is often used as an EFFECT SIZE measure.

**ethanol** *n.* a substance formed naturally or synthetically by the fermentation of glucose and found in beverages such as beers, wines, and distilled liquors. It is the most frequently used and abused CNS DEPRESSANT in many cultures. When consumed, it primarily affects the central nervous system, mood, and cognitive functions. In small doses, it can produce feelings of warmth, well-being, and confidence. As more is consumed, there is a gradual loss of self-control, and speech and control of limbs become difficult; at high consumption levels, nausea and vomiting, loss of consciousness, and even fatal respiratory arrest may occur. Ethanol has been mistakenly identified as a stimulant, since its stimulating effect derives from an associated loss of cortical inhibition. Also called **ethyl alcohol**. See also ALCOHOL.

**ethchlorvynol** *n.* an ALCOHOL DERIVATIVE introduced in the 1950s as a nonbarbiturate sedative. Ethchlorvynol is an effective, rapidly acting hypnotic, but because of its toxicity in overdose, as well as its ability to induce enzymes involved in drug metabolism (see ENZYME INDUCTION) and its association with blood disorders, it has become clinically obsolete. It is at times a substance of abuse. U.S. trade name: **Placidyl**.

**ether** *n.* a drug introduced into medicine as a general anesthetic in the mid-1800s. The effects of ether include a progressive series of physical and psychological reactions, beginning with a feeling of suffocation, bodily warmth, visual and auditory aberrations, and a feeling of stiffness and inability to move the limbs. A second stage may be marked by some resistance to the sense of suffocation of the anesthetic, but the muscles relax, blood pressure and pulse increase, and pupils dilate. In the third stage, pulse and blood pressure return to normal, pupils contract, and reflexes are

absent. If additional ether is administered beyond the third stage, there is danger of paralysis of the medullary centers, followed by shock and death. In clinical practice, ether has been replaced by safer anesthetics.

**e-therapy** *n.* an Internet-based form of DISTANCE THERAPY used to expand access to clinical services typically offered face-to-face. This therapy can be conducted via webcam, in real-time messaging, in chat rooms, and in e-mail messages. Also called **online therapy**.

**ethereal** *adj.* **1.** in the ZWAARDEMAKER SMELL SYSTEM, denoting an odor quality that is smelled in fruits and wines. **2.** denoting one of the seven classes of odorants in the STEREOCHEMICAL SMELL THEORY.

**ethical code** see CODE OF ETHICS.

**ethical conflict** see BOUNDARY ISSUES; CONFLICT OF INTEREST.

**ethical consumerism** the purchase and consumption of goods and services in accordance with one's social or moral beliefs. For example, an environmentally conscious consumer will prefer GREEN BRANDS and is often willing to pay a premium for them.

**ethical determinism** the position, stated definitively by Greek philosopher PLATO, that one who knows the good will (necessarily) do the good. It is implied that a sense of obligation is the defining feature of knowledge of the good and that this sense will be strong enough to compel, rather than merely suggest, action. This position assumes the essential rationality of human beings. Later modifications of the position have argued that a person will necessarily act in accordance with what he or she perceives to be good, whether or not it really is good, or that a person will act consistently with what he or she perceives to be good, where what is good is what is in that person's self-interest (see EUDEMONISM). Also called **moral determinism**.

**ethical dilemma** a situation in which two moral principles conflict with one another. Fictional or hypothetical dilemmas of this kind are often used to assess the moral beliefs or moral reasoning skills of individuals. Also called **moral dilemma**. See HEINZ DILEMMA.

**ethical imperative** a principle or practice taken to be ethically required of one. The binding character of the principle or behavior may result from a perceived logical or rational necessity, as in the CATEGORICAL IMPERATIVE defined by Immanuel KANT, or it may seem to arise from some set of empirical facts; for example, energy conservation may seem to be an ethical imperative given that one accepts the evidence of global warming.

**ethical judgment** **1.** a moral decision made by an individual, especially a difficult one made in the context of a real or hypothetical ETHICAL DILEMMA. Such judgments often reveal the beliefs that an individual applies in discriminating between right and wrong and the attitudes that comprise his or her basic moral orientation. **2.** the faculty of making moral distinctions. Also called **moral judgment**.

**ethical nihilism** see MORAL NIHILISM.

**ethical principle orientation** see POSTCONVENTIONAL LEVEL.

**ethics** *n.* **1.** the branch of philosophy that investigates both the content of moral judgments (i.e., what is right and what is wrong) and their nature (i.e., whether such

judgments should be considered objective or subjective). The study of the first type of question is sometimes termed **normative ethics** and that of the second **metaethics**. Also called **moral philosophy**. **2.** the principles of morally right conduct accepted by a person or a group or considered appropriate to a specific field. In psychological research, for example, proper ethics requires that participants be treated fairly and without harm and that investigators report results and findings honestly. See CODE OF ETHICS; PROFESSIONAL ETHICS; RESEARCH ETHICS. —**ethical** *adj.*

**ethics of animal research** the complex set of issues relating to the ethics of manipulating nonhuman animals experimentally, holding them in captivity, and using them for the purpose of research. Some argue that any animal research is unethical because animals cannot give informed consent. Others see value in animal research if the animals are well cared for and treated humanely. See ANIMAL CARE AND USE; INSTITUTIONAL ANIMAL CARE AND USE COMMITTEE.

**ethinamate** *n.* see ALCOHOL DERIVATIVE.

**ethmocephaly** *n.* a birth defect involving the olfactory system and often marked by a rudimentary proboscis-shaped nose, which may have imperforate nostrils. The condition is sometimes associated with CEBOCEPHALY and tends to occur as part of TRISOMY 13.

**ethmoid fossa** see FOSSA.

**ethnic** *adj.* denoting or referring to a group of people having a shared social, cultural, linguistic, and sometimes religious background.

**ethnic bias** **1.** discrimination against individuals based on their ethnic group, often resulting in inequities in such areas as education, employment, health care, and housing. **2.** in testing and measurement, contamination or deficiency in an instrument that differentially affects the scores of those from different ethnic groups. Ideally, researchers strive to create CULTURE-FAIR TESTS.

**ethnic cleansing** the methodical removal, detention, or GENOCIDE of an ethnic group or groups to produce an ethnically homogeneous territory or society.

**ethnic drift** **1.** the process by which people belonging to an ethnic minority tend to lose, alter, or redefine their sense of ETHNIC IDENTITY over time, generally as a result of assimilation with the dominant culture, intermarriage, or loss of contact with their culture of origin. See also CULTURAL DRIFT. **2.** the tendency for people of the same ethnicity to gather in or be assigned to the same formal or informal groups, whether as a result of voluntary association or the policies of others. At work, for example, people of the same ethnicity are often assigned to the same work team or supervisor.

**ethnic group** any major social group that possesses a common identity based on history, culture, language, and often religion.

**ethnic identity** an individual's sense of being a person who is defined, in part, by membership in a specific ethnic group. This sense is usually considered to be a complex construct involving shared social, cultural, linguistic, religious, and often racial factors but identical with none of them.

**ethnicity** *n.* a social categorization based on an individu-

al's membership in or identification with a particular cultural or ethnic group.

**ethnic psychology** a branch of psychology that studies how the culture, language, and related phenomena of different ethnic groups within a nation or region affect the attitudes, experiences, and behaviors of group members. Influenced by sociology, the field focuses on the unique sociocultural attributes of those of different races and ethnicities within each society, particularly as related to SOCIAL CLASS distinctions. Also called **ethnopsychology**; **racial and ethnic minority psychology**. See also CROSS-CULTURAL PSYCHOLOGY; MULTICULTURAL PSYCHOLOGY.

**ethnic research** the body of studies that investigates the backgrounds of people from different races and cultures.

**ethnic socialization** the transmission by parents, caregivers, or others of information, values, and perspectives about their ethnic group to the next generation, with the goals of instilling children with pride in their ethnic heritage and providing them with strategies for coping with ethnic discrimination and other barriers to success in mainstream society. This term is used in reference to research with a number of ethnic groups, including African Americans. See also RACIAL SOCIALIZATION.

**ethnocentrism** *n.* **1.** the practice of regarding one's own ethnic, racial, or social group as the center of all things. Just as EGOCENTRISM is a sense of self-superiority, so ethnocentrism is the parallel tendency to judge one's group as superior to other groups. **2.** the tendency, often unintentional, to base perceptions and understandings of other groups or cultures on one's own. Also called **ethnocentricity**. See also INGROUP BIAS; RACISM; SOCIOCENTRISM. —**ethnocentric** *adj.* [first described by U.S. sociologist William G. Sumner (1840–1910)]

**ethnographic approach** a strategy frequently used by anthropologists for studying a community as a way of life. The method requires extensive residence in the community, fluency in the local languages, and active participation in community life to develop insight into its total culture.

**ethnography** *n.* the descriptive study of cultures or societies based on direct observation (see FIELD RESEARCH) and (ideally) some degree of participation. Compare ETHNOLOGY. See also EMIC. —**ethnographer** *n.* —**ethnographic** *adj.*

**ethnolinguistics** *n.* the investigation of language within the context of human cultures or societies, paying attention to cultural influences and incorporating the principles of anthropology and ethnography. See also ANTHROPOLOGICAL LINGUISTICS.

**ethnology** *n.* the comparative, analytical, or historical study of human cultures or societies. Compare ETHNOGRAPHY. See also ETIC. —**ethnological** *adj.* —**ethnologist** *n.*

**ethnomethodology** *n.* the analysis of the underlying conventions and systems of meaning that people use to make sense of commonplace social interactions and experiences. —**ethnomethodological** *adj.* —**ethnomethodologist** *n.* [introduced by U.S. sociologist Harold Garfinkel (1917–2011)]

**ethnopsychology** *n.* see ETHNIC PSYCHOLOGY.

**ethnopsychopharmacology** *n.* the branch of pharmacology that studies ethnic and cultural variations in the

use of and response to psychoactive agents across divergent groups, as well as the mechanisms responsible for such differences. —**ethnopsychopharmacological** *adj.*

**ethogram** *n.* a detailed listing and description of the behavior patterns of a nonhuman animal in its natural habitat. The description is objective rather than interpretative. For example, a vocalization given in response to a predator would be described in terms of its acoustic properties rather than its apparent function of alarm call. An ethogram can be used to determine categories for a BEHAVIOR RECORD and is a prerequisite for observational research. See ETHOLOGY.

**ethologically oriented universal** see PSYCHOLOGICAL UNIVERSAL.

**ethology** *n.* the comparative study of the behavior of nonhuman animals, typically in their natural habitat but also involving experiments both in the field and in captivity. Ethology was developed by behavioral biologists in Europe and is often associated with connotations of innate or species-specific behavior patterns, in contrast with COMPARATIVE PSYCHOLOGY. The theory and methods from both areas are now closely interrelated, and ANIMAL BEHAVIOR is a more neutral and more broadly encompassing term. Increasingly, ethology is used to describe research involving observation and detailed descriptions of human behavior as well. —**ethological** *adj.* —**ethologist** *n.*

**ethos** *n.* the distinctive character or spirit of an individual, group, culture, nation, or period, as revealed particularly in its attitudes and values. See also ORTGEIST; ZEITGEIST.

**ethosuximide** *n.* see SUCCINIMIDE.

**ethotoxin** *n.* see HYDANTOIN.

**ethyl alcohol** see ETHANOL.

**etic** *adj.* **1.** denoting an approach to the study of human cultures based on concepts or constructs that are held to be universal and applicable cross-culturally. Such an approach would generally be of the kind associated with ETHNOLOGY rather than ETHNOGRAPHY. The term is sometimes used critically of studies or perspectives that aspire to objectivity but succeed only in defining social behaviors in terms of the researcher's own cultural values. Compare EMIC. [introduced by U.S. linguist Kenneth Pike (1912–2000); first used in anthropology by U.S. cultural anthropologist Marvin Harris (1927–2001)] **2.** in linguistics, see EMIC–ETIC DISTINCTION.

**etiology** *n.* **1.** the causes and progress of a disease or disorder. **2.** the branch of medical and psychological science concerned with the systematic study of the causes of physical and mental disorders. —**etiological** *adj.*

**Etrafon** *n.* a trade name for a combination of the tricyclic antidepressant AMITRIPTYLINE and the antipsychotic PERPHENAZINE, used for the treatment of concurrent anxiety and depression. Its use has, however, declined because of its association with TARDIVE DYSKINESIA.

**E trisomy** see TRISOMY 18.

**ETS** **1.** abbreviation for EDUCATIONAL TESTING SERVICE. **2.** abbreviation for electrical transcranial stimulation. See ELECTROSLEEP THERAPY.

**etymology** *n.* the study of the origins and historical development of words and MORPHEMES. —**etymological** *adj.*

**eu-** combining form well or good (e.g., EUPHORIA).

**eudaimonic well-being** the type of happiness or contentment that is achieved through SELF-ACTUALIZATION and having meaningful purpose in one's life. Compare HEDONIC WELL-BEING.

**eudemonia (eudaemonia)** *n.* happiness considered as a criterion for what is moral and as a motivation for human action. Modern versions of eudemonia, such as those found in psychology, have most often emphasized its individualist and pleasure-seeking aspects; older theories, particularly that of ARISTOTLE, have given greater emphasis to the notion of one's being drawn by nature toward a higher good or a "flourishing life" as the source of genuine happiness.

**eudemonism (eudaemonism)** *n.* **1.** the position that happiness or EUDEMONIA is the ultimate ground of morality, so that what is good is what brings happiness. Debate then centers on whose happiness is achieved and whether certain means of achieving happiness are immoral. UTILITARIANISM is a eudemonism. **2.** the position that humans will naturally act in ways that bring them happiness. Psychoanalytic, behavioristic, and humanistic psychologies can all be seen as modern eudemonisms. Debate centers on whether humans are compelled to act so as to maximize their happiness, as HEDONISM would suggest, or whether the association between happiness and behavior is more subtle. Older versions of eudemonism suggested that the motives for human action included some altruistic impulses, so that the achievement of the happiness of others or a greater good could also be the cause or source of behaviors.

**euergasia** *n.* normal mental or psychobiological functioning. Also called **orthergasia**. [defined by Adolf MEYER]

**eugenic** *adj.* describing a factor or influence that is favorable to heredity. Compare DYSGENIC.

**eugenics** *n.* a social and political philosophy, based loosely on Charles DARWIN's evolutionary theory and Francis GALTON's research on hereditary genius, that seeks to eradicate genetic defects and improve the genetic makeup of populations through selective human breeding. **Positive eugenics** is directed toward promoting reproduction by individuals with ostensibly superior traits, whereas **negative eugenics** is directed toward preventing reproduction by individuals with traits that are considered to be undesirable. The eugenic position is groundless and scientifically naive, in that many conditions associated with disability or disorders, such as syndromes that increase risk of intellectual disability, are inherited recessively and occur unpredictably. Nevertheless, the philosophy gained popularity in the United Kingdom and United States, where eugenic policies, such as sterilization of people with intellectual disability, persisted into the latter half of the 20th century. Attitudes toward genetics in the 21st century are often influenced by individual and community concerns about prior eugenic abuses.

**Euler diagram** a pictorial image of how entities or situations intersect or overlap. Whereas a VENN DIAGRAM depicts all areas of intersection, a Euler diagram does not necessarily include all areas. For example, a researcher might create a Venn diagram in which a large circle represents a population, a circle inside that represents a sample or subset of the population, and overlapping circles inside the previous one indicate additional subsets. If the image were to leave out some of the inner circles, such as the ones representing different kinds of random samples, it



would be considered a Euler diagram. [Leonhard **Euler** (1707–1783), Swiss-born Russian mathematician]

**eumorphic** *adj.* denoting a constitutional body type characterized by normal shape and structure and roughly equivalent to the NORMOSPLANCHNIC TYPE.

**eunuch** *n.* a male who has been castrated before puberty and who therefore develops the secondary SEX CHARACTERISTICS of a female, such as a higher voice. See also CASTRATION.

**euphenics** *n.* interventions that aim to improve the outcome of a genetic disease by altering the environment to minimize expression of the disease. For example, people with PHENYLKETONURIA can reduce or prevent its expression by eliminating major sources of phenylalanine (e.g., soft drinks sweetened with aspartame) from their diet.

**euphoria** *n.* extreme happiness and an elevated sense of well-being. An exaggerated degree of euphoria that does not reflect the reality of one's situation is common in MANIC EPISODES and HYPOMANIC EPISODES. —**euphoric** *adj.*

**euphoriant** *n.* a substance capable of inducing a strong subjective sense of well-being and happiness.

**euphorogenic** *adj.* describing an event or medication that generates a state of EUPHORIA.

**eureka task** a problem-solving task designed to investigate the phenomenon of sudden insight into a problem's solution. The route to solving the problem is usually not obvious and typically requires a mental leap beyond the sorts of solutions used for everyday problems. See also AHA EXPERIENCE; DISCONTINUITY HYPOTHESIS.

**European Federation of Professional Psychologists' Associations (EFPPA)** a federation of national psychology associations founded in 1981 to provide a forum for European cooperation in a wide range of fields of academic training, psychological practice, and research.

**European Federation of the Psychology of Sport and Physical Activity** a European federation of national organizations in the area of SPORT AND EXERCISE PSYCHOLOGY. The organization is usually called **FEPSAC**, an acronym of its French name (Fédération Européenne de Psychologie des Sports et des Activités Corporelles).

**eurymorph** *n.* see BODY-BUILD INDEX.

**euryplastic** *adj.* denoting a constitutional body type that is roughly equivalent to the PYKNIC TYPE in KRETSCHMER TYPOLOGY.

**eusociality** *n.* a social structure among nonhuman animals in which there is a marked division of labor, with only a few individuals that reproduce and many more nonreproductive individuals that guard the nest, gather food and nest materials, or help to care for the young. Eusociality is a common form of social structure in colonial species of bees and wasps (see SOCIAL INSECTS): The HAPLODIPLOIDY mode of inheritance helps to explain the adaptiveness of nonreproductive helpers caring for the young of the queen. —**eusocial** *adj.*

**eustachian tube** a slender tube extending from the middle ear to the PHARYNX, with the primary function of equalizing air pressure on both sides of the tympanic membrane (eardrum). [Bartolommeo **Eustachio** (1524–1574), Italian anatomist]

**eusthenic** *adj.* denoting a constitutional body type that is

equivalent to the ASTHENIC TYPE and close to the ATHLETIC TYPE in KRETSCHMER TYPOLOGY.

**eustress** *n.* the positive stress response, involving optimal levels of stimulation: a type of stress that results from challenging but attainable and enjoyable or worthwhile tasks (e.g., participating in an athletic event, giving a speech). It has a beneficial effect by generating a sense of fulfillment or achievement and facilitating growth, development, mastery, and high levels of performance. Compare DISTRESS. [first described by Hungarian-born Canadian endocrinologist Hans Selye (1907–1982)]

**euthanasia** *n.* the act or process of terminating a life, usually to prevent further suffering in an incurably or terminally ill individual. Voluntary euthanasia requires the consent of a competent person who has established a valid ADVANCE DIRECTIVE or made his or her wishes otherwise clearly known. Euthanasia is distinguished from the much more widely accepted practice of forgoing invasive treatments, as permitted under natural-death laws throughout the United States. Traditionally, a distinction between PASSIVE EUTHANASIA (withholding treatment) and ACTIVE EUTHANASIA (taking directly lethal action) has been made. In current practice, however, the term *euthanasia* typically is used to mean active euthanasia only. The practice of and debate over euthanasia in various forms have a long history going back to Ancient Greece (the term itself derives from the Greek: *eu*, “good, well,” and *thanatos*, “death”). Worldwide, legal and ethical questions persist to this day about the circumstances under which, in the absence of an advance directive, euthanasia can and cannot be pursued, as famously occurred, for example, in the case of Terri Schaivo, a Florida woman in a permanent VEGETATIVE STATE who died in 2005 after her life support was discontinued following a lengthy court battle. Ethical questions apply as well to the euthanasia of nonhuman animals, particularly concerning whether it is ethical to terminate the lives of healthy animals in shelters and zoos. See also ASSISTED DEATH. —**euthanize** *vb.*

**euthymia** *n.* a mood of well-being and tranquility. The term often is used to refer to a state in patients with a bipolar disorder that is neither manic nor depressive but in between, associated with adaptive behavior and enhanced functioning. —**euthymic** *adj.*

**evaluability assessment** a review that may be carried out before a PROGRAM EVALUATION: The aim is to identify the EVALUATION OBJECTIVE, specific questions to be answered by program-evaluation data, and possible designs, measurements, and analyses to be used in the evaluation.

**evaluation** *n.* a careful examination or overall appraisal of something, particularly to determine its worth, value, or desirability. For example, the evaluation of a particular therapeutic technique refers to a determination of its success in achieving defined goals.

**evaluation apprehension** uneasiness or worry about being judged by others, especially worry experienced by participants in an experiment as a result of their desire to be evaluated favorably by the experimenter or by others observing their behavior. Participants with evaluation apprehension may inhibit reactions (e.g., the display of aggression) that they believe will lead the experimenter to regard them as psychologically unhealthy.

**evaluation interview** an interview conducted as part of an EMPLOYEE-EVALUATION program. An evaluation interview may be a routine or periodic discussion of the individ-

ual's job performance (see PERFORMANCE REVIEW) or may arise from specific circumstances. In some cases, it may involve psychological incentives, such as suggesting that the employee develop a set of personal goals.

**evaluation objective** any of the purposes of an evaluation of a program. For example, the purpose of FORMATIVE EVALUATIONS is to consider implementation problems, program integrity, and program monitoring, whereas the purpose of SUMMATIVE EVALUATIONS is to focus on program impact, program effectiveness, and cost analysis.

**evaluation research** the use of scientific principles and methods to assess the effectiveness of social interventions and programs, including those related to mental health, education, and safety (e.g., crime prevention, automobile accident prevention). Evaluation research is thus a type of APPLIED RESEARCH. See also ASSESSMENT RESEARCH.

**evaluation utilization** an effort to act on the findings of an evaluation program. It involves managing disparate evaluation outcomes as well as generalizing solutions for the problems brought to light by the evaluation process.

**evaluative priming measure** an IMPLICIT ATTITUDE MEASURE based on the phenomenon that the speed of evaluating some target ATTITUDE OBJECT is facilitated by a prime (i.e., the prior presentation of another attitude object) that is evaluatively consistent with the target and inhibited by a prime that is evaluatively inconsistent with the target. For example, if the name of a product is presented as a prime immediately prior to a target word likely to be negative to most people (e.g., *cockroach*), evaluation of the target should be faster if the attitude toward the product is negative and slower if the attitude toward the product is positive. A measure of attitudes toward the prime (i.e., the product) can be created by computing the relative difference in the speed of evaluating a negative target paired with the prime versus a positive target paired with the prime. Also called **bona fide pipeline measure**. See also DIRECT ATTITUDE MEASURE; EXPLICIT ATTITUDE MEASURE; INDIRECT ATTITUDE MEASURE. [originally developed by U.S. psychologist Russell H. Fazio (1952– )]

**evaluative ratings** scores reflecting individuals' judgments of the aesthetic or other qualities of a group of objects. Evaluative ratings may be based on hedonic values, such as the relative pleasantness of a set of paintings, on the relative complexity of a series of patterns, or on other factors.

**evaluative reasoning** a form of CRITICAL THINKING that involves appraisal of the effectiveness, validity, meaning, or relevance of any act, idea, feeling, technique, or object.

**evaluator** *n.* an individual whose role is to assess and provide advice about the progress of a therapy or sensitivity group, a project team, an institution, or an individual. See also EXTERNAL EVALUATOR; INTERNAL EVALUATOR.

**evaluator credibility** the extent to which the evaluator of a program is viewed by the STAKEHOLDERS as trustworthy, technically competent, and knowledgeable enough to execute an evaluation in a fair and responsible manner.

**evasion** *n.* 1. a form of PARALOGIA in which an idea that is logically next in a chain of thought is replaced by another idea closely but not accurately or appropriately related to it. 2. elusion or avoidance.

**evenly hovering attention** see FREE-FLOATING ATTENTION.

**event** *n.* 1. any occurrence or phenomenon that has a definite beginning and end and that involves or produces change. 2. in probability theory, any of the namable things that can be said to result from a single trial of an experiment of chance. For example, in the roll of a single die, the events could include (among others) any of the six individual numbers, any even number, and any odd number.

**event history analysis** see SURVIVAL ANALYSIS.

**event memory** memory for everyday events, which is a form of EPISODIC MEMORY.

**event-related magnetic field (ERF)** a change in the magnetic field of the brain, detected at the scalp through MAGNETOENCEPHALOGRAPHY, that is elicited by a cognitive event, such as determining whether a specific word was part of a recently presented list. ERFs allow more accurate localization of function than do EVENT-RELATED POTENTIALS because they are less influenced by the surrounding brain structures.

**event-related potential (ERP)** a specific pattern of electrical activity produced in the brain when a person is engaged in a cognitive act, such as discriminating one stimulus from another. There are a number of different ERP components, including the highly researched P3 COMPONENT (or P300), and different cognitive operations have been associated with the amplitude and latency of each. Because ERPs provide specific information about the precise timing and (given appropriate caveats) location of mental events, they can yield data about cognitive operations not readily derived from behavioral measures and also serve as an important bridge between psychological function and neural structures. Although the terms are sometimes used synonymously, ERPs are distinct from EVOKED POTENTIALS, which are associated with more elementary sensory stimulation.

**event sampling** a strategy commonly used in DIRECT OBSERVATION that involves noting and recording the occurrence of a carefully specified behavior whenever it is seen. For example, a researcher may record each episode of apnea that occurs within a 9-hour period overnight while a person sleeps.

**event space** a subset of the set of all possible outcomes in a situation (the SAMPLE SPACE). For example, the sample space of working days for a particular organization might comprise Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, and Saturday for all employees, but the event space for working days might include only Monday through Friday for some employees.

**everyday creativity** the ability to think divergently and demonstrate flexibility and originality in one's daily activities. Examples include redecorating a room at home or devising a novel solution to a business problem. Also called **ordinary creativity**. Compare EXCEPTIONAL CREATIVITY.

**everyday intelligence** the intellectual skills used in ordinary activities (e.g., price comparison shopping, using a map to travel unfamiliar streets). Everyday intelligence refers not to a psychometrically validated construct but to a loosely conceptualized kind of intelligence relevant to the problems people face on a daily basis.

**everyday racism** differential treatment of individuals on the basis of their racial group that occurs in common, routine social situations. For example, consider two college students who are pictured in the newspaper for participating as volunteers at an event to clean up a local neighbor-

hood. Everyday racism would be evident if the picture caption identifies the White student as a volunteer and misidentifies the African American student as a community resident.

**evidence-based practice (EBP)** the integration of the best available scientific research from laboratory and field settings with clinical expertise so as to provide effective psychological services that are responsive to a patient's culture, preferences, and characteristics (e.g., functional status, level of social support, strengths). In uniting researchers and practitioners, EBP ensures that the research on psychological assessment, case formulation, intervention strategies, therapeutic relationships and outcomes, and specific problems and patient populations is both clinically relevant and internally valid. Clinical decisions should be made in collaboration with the patient, based on relevant data, and with consideration for the probable costs, benefits, and available resources and options. The ultimate goal of EBP is to promote empirically supported principles that can be used to enhance public health.

**evil eye** a folk belief in the supernatural powers of a malevolent stare or hostile gaze, which is believed to cause adversity, illness, injury, or destruction to the recipient. The term is applied more specifically to a CULTURE-BOUND SYNDROME in Mediterranean countries and other regions (see MAL DE OJO). See also WITCHCRAFT.

**eviration** *n.* 1. castration or emasculation. 2. the delusion of a man that he has been turned into a woman.

**evocative therapy** therapy based on the idea that behavior is aroused by underlying factors. Once the factors underlying a maladaptive or unwanted behavior have been identified, dispositional and environmental changes can be made to affect those factors and therefore alter the behavior. [originated by Jerome D. FRANK]

**evoked potential (EP)** a specific pattern of electrical activity produced in a particular part of the nervous system, especially the brain, in response to external stimulation, such as a flash of light or a brief tone. Different modalities and types of stimuli produce different types of sensory potentials, and these are labeled according to their electrical polarity (positive- or negative-going) and timing (by serial order or in milliseconds). Although the terms are sometimes used synonymously, EPs are distinct from EVENT-RELATED POTENTIALS, which are associated with higher level cognitive processes. Also called **evoked response (ER)**.

**evolution** *n.* 1. the process of gradual change in the appearance of populations of organisms that takes place over generations. Such changes are widely held to account for the present diversity of living organisms originating from relatively few ancestors since the emergence of life on earth. See EVOLUTIONARY THEORY. See also CONVERGENT EVOLUTION; DIVERGENT EVOLUTION. 2. any other process of gradual change. —**evolutionary** *adj.*

**evolutionarily stable strategy (ESS)** a state of equilibrium between two different adaptive strategies that allows both strategies to be maintained within a population. For example, shy animals are less likely than bold animals to behave in a way that attracts predators, but bold animals are more likely to find new food resources or secure additional mates. Within a population, therefore, there will be an optimal balance of costs and benefits for both shy and bold animals so that members of both types can survive. The evolutionarily stable strategy is a mechanism that

accounts for the maintenance of diversity within a population.

**evolutionary aesthetics** the concept that art evolves due to intrinsic forces rather than changing to reflect extra-artistic forces.

**evolutionary developmental psychology** the application of the basic principles of Darwinian evolution, particularly NATURAL SELECTION, to explain human development. Evolutionary developmental psychology involves the study of the genetic and environmental mechanisms that underlie the universal development of social and cognitive competencies and the evolved epigenetic processes (GENE-ENVIRONMENT INTERACTIONS) that adapt these competencies to local conditions. It assumes that not only are behaviors and cognitions that characterize adults the product of selection pressures operating over the course of evolution, but so also are characteristics of children's behaviors and minds. [proposed in 2002 by U.S. developmental psychologists David Bjorklund (1949– ) and Anthony D. Pellegrini (1949– )]

**evolutionary epistemology** any of a number of approaches to EPISTEMOLOGY that seek to explain the origins and development of human knowledge in terms of biological, chiefly Darwinian, evolution. One form suggests that ideas and explanations evolve in a way analogous to the evolution of organisms; that is, they survive as they show themselves to be "fit," or useful. Another form suggests that there is a literal biological origin of ideas and that certain ideas, such as the rules of logic, have enhanced the survival of those in whom they evolved: Thus, the ideas themselves tend to survive and take on importance.

**evolutionary psychology** an approach to psychological inquiry that views human cognition and behavior in a broadly Darwinian context of adaptation to evolving physical and social environments and new intellectual challenges. It differs from SOCIOBIOLOGY mainly in its emphasis on the effects of NATURAL SELECTION on INFORMATION PROCESSING and the structure of the human mind.

**evolutionary theory** any theory to account for the evolution of organisms over successive generations. One early and influential example was the theory of evolution by use or disuse (see LAMARCKISM). Nowadays, the most widely accepted is an updated version of Charles DARWIN's theory of evolution through NATURAL SELECTION, called neo-Darwinism (see DARWINISM). Theories concerning specific aspects of evolution include COEVOLUTION, EXAPTATION, NEOTENY, PUNCTUATED EQUILIBRIUM, and RECAPITULATION THEORY. Opposed to all theories of evolution is the doctrine of CREATIONISM. The application of evolutionary principles permeates different subdisciplines within psychology, including clinical science, cognitive psychology, and neuroscience. For example, the influence of evolutionary theories can be seen in studies conducted to determine whether particular clinical disorders (e.g., depression, anxiety) are in fact psychological adaptations or in assertions that emotions evolved to serve primary functions (particularly to motivate and communicate) that would enhance survival.

**evolution of consciousness** the process by which consciousness arose and developed as a biological adaptation in animals. In mammals, conscious wakefulness, attentional orienting, sensory perception, immediate memory, and so forth are associated with the evolution of the THALAMOCORTICAL SYSTEM of the mammalian brain over

more than 200 million years. Close functional parallels may exist in birds, some cephalopods, and reptiles such as salamanders and crocodilia.

**evolution of intelligence** the process by which intelligence has developed from earlier and generally simpler species to later and generally more complex species. There are many theories of how intelligence has evolved, but most emphasize some kind of Darwinian natural-selection process, in which evolution favored skills that were more useful over the eons for adaptation to environments than skills that were less useful.

**evolution of the brain** the concept that the brains of complex animals have evolved over many millions of years from a network of simple NERVE FIBERS connecting various body areas, as in primitive multicellular animals. At a more advanced stage, a neural axis developed to connect and integrate peripheral neurons and to house cell bodies; this axis became a spinal cord. Still later, collections of neurons with control functions developed at the head end of the spinal cord, as in the brains of higher invertebrates, birds, fish, and reptiles. From those concentrations of brain tissue evolved the FOREBRAIN, with its highly convoluted CEREBRAL CORTEX, of mammals, especially prominent in whales, great apes, and *Homo sapiens*. See also CEPHALIZATION; ENCEPHALIZATION.

**evolved mechanism** a subsystem of the brain (or mind) that is a product of natural selection and is generally seen as having evolved as a result of its success in solving a problem related to survival or reproduction during the evolution of a species. For example, the elements of the brain's visual system that enable organisms to perceive objects in three-dimensional space (despite the fact that vision involves the projection of light onto a two-dimensional surface, the retina) would be seen as an evolved mechanism that solved the problem of determining the distance between oneself and objects in the environment.

**ex-** prefix see EXO-.

**exacerbation** *n.* an increase in the severity of a disease or disorder or of its symptoms.

**exact replication** see REPLICATION.

**exact test** any statistical test in which the probability of finding a result as extreme or more extreme than the one obtained, given the NULL HYPOTHESIS, can be calculated precisely rather than approximated. The FISHER EXACT TEST is an example.

**exaggeration** *n.* the act of embellishing or overstating a quality or characteristic of a person, thing, or situation. It is often a defensive reaction in which the individual justifies questionable attitudes or behavior through overstatement, such as dramatizing the oppressive acts of a parent as a means of justifying rebellious behavior.

**exaltation** *n.* an extreme state of EUPHORIA and PSYCHOMOTOR AGITATION, accompanied by a lack of restraint. It occurs in some MANIC EPISODES.

**examination** *n.* a test, observation, or other means of investigation carried out on a patient to evaluate physical or mental health or detect the presence or absence of signs or symptoms of diseases, disorders, or conditions. See also MENTAL EXAMINATION; NEUROLOGICAL EVALUATION; PSYCHOLOGICAL EXAMINATION.

**exaptation** *n.* a trait that, having evolved to serve one function, is later used for another. For example, feathers

may have evolved as cooling or insulating mechanisms and later aided in flying. Also called **spandrel**. [proposed by U.S. paleontologist Stephen Jay Gould (1941–2002)]

**exceptional child** a child who is substantially above or below the average in some significant respect. Often applied to a child who shows marked deviations in intelligence, the term may also be used to indicate the presence of a special talent or an unusual emotional or social difficulty. See also GIFTEDNESS; SLOW LEARNER.

**exceptional creativity** the capability of individuals to make unique and important contributions to society through their work and the products of their work. Exceptional creativity, as measured by creative output, seems to peak at different points in the adult lifespan depending on the field of activity. Also called **creative genius**. Compare EVERYDAY CREATIVITY.

**exchangeability** *n.* the ability to be used in different circumstances or situations. For example, in measurement and statistics, items that are equally appropriate on different versions of a test and methods or parameters that work well under different conditions show exchangeability.

**exchange relationship** see COMMUNAL RELATIONSHIP.

**exchange theory** see SOCIAL EXCHANGE THEORY.

**excitability** *n.* **1.** the tendency of some individuals to be readily aroused to emotional responses. **2.** in neurophysiology, the capacity of neurons and some muscle cells to respond electrically to external stimulation with a sudden, transient increase in their ionic permeability and a change in the electric potential across their cell membrane. —**excitable** *adj.*

**excitant** *n.* an agent capable of eliciting a response.

**excitation** *n.* the electrical activity elicited in a neuron or muscle cell in response to an external stimulus, specifically the propagation of an ACTION POTENTIAL.

**excitation pattern** a spatial pattern of responses to sound in the auditory system. It usually refers to the ENVELOPE of the displacement pattern on the BASILAR MEMBRANE or its representation in the auditory nerve. See TONOTOPIC ORGANIZATION; TUNING CURVE.

**excitation-transfer theory** the theory that emotional responses can be intensified by AROUSAL from other stimuli not directly related to the stimulus that originally provoked the response. According to this theory, when a person becomes aroused physiologically, there is a subsequent period of time when the person will experience a state of residual arousal yet be unaware of it. If additional stimuli are encountered during this time, the individual may mistakenly ascribe his or her residual response from the previous stimuli to those successive stimuli. [originally proposed in 1971 by U.S. psychologist Dolf Zillmann (1935– )]

**excitatory conditioning** direct CLASSICAL CONDITIONING in which a conditioned stimulus acts as a signal that a particular unconditioned stimulus will follow. Compare INHIBITORY CONDITIONING.

**excitatory field** an area of the brain surrounding and sharing the response of an excited sensory area.

**excitatory gradient (excitation gradient)** see GENERALIZATION GRADIENT.

**excitatory-inhibitory processes** **1.** processes in which the transmission of neuronal signals is activated or inhibited by the effects of neurotransmitters on the post-

synaptic membrane. **2.** antagonistic functions of the nervous system defined by Ivan PAVLOV. **3.** the stimulation of the cortex and the subsequent facilitation of learning, memory, and action (excitatory processes) versus central nervous system processes that inhibit or interfere with perceptual, cognitive, and motor activities (inhibitory processes). Individuals with a predominance of inhibitory over excitatory processes are theorized to be predisposed to a higher degree of EXTRAVERSION, whereas individuals with a predominance of excitatory over inhibitory processes are theorized to be predisposed to a higher degree of INTROVERSION. Introverted-extraverted behaviors are said to serve the function of modulating these excitation and inhibitory processes: That is, individuals who build up excitatory processes slowly and inhibitory processes quickly need to behave in an extraverted fashion to provide “excitement,” whereas introverts are already excited so they do not need to behave in an extraverted way to increase this excitability but tend instead to shy away from excitatory stimuli. [proposed by Hans EYSENCK]

**excitatory neurotransmitter** see NEUROTRANSMITTER.

**excitatory postsynaptic potential (EPSP)** a brief decrease in the difference in electrical charge across the membrane of a neuron that is caused by the transmission of a signal from a neighboring neuron across the synapse (specialized junction) separating them. EPSPs increase the probability that the postsynaptic neuron will initiate an ACTION POTENTIAL and hence fire a nerve impulse. Compare INHIBITORY POSTSYNAPTIC POTENTIAL.

**excitatory synapse** a specialized type of junction at which activity from one neuron (in the form of an ACTION POTENTIAL) facilitates activity in an adjacent neuron by initiating an EXCITATORY POSTSYNAPTIC POTENTIAL. Compare INHIBITORY SYNAPSE.

**excitatory threshold** the stimulus intensity that is just sufficient to trigger a NERVE IMPULSE.

**excitement** *n.* an emotional state marked by enthusiasm, eagerness or anticipation, and general arousal.

**excitement phase** see SEXUAL-RESPONSE CYCLE.

**excitotoxicity** *n.* the property that causes neurons to die when overstimulated (e.g., by large amounts of the excitatory neurotransmitter GLUTAMATE).

**excitotoxic lesion** a lesion caused by paroxysmal overactivity of neurons, which may be associated with seizures or occur after stroke. This is most commonly caused by overstimulation of neurons by excitatory amino acids (see EXCITOTOXICITY).

**exclusion design** tools or systems that have been designed to virtually exclude the possibility of human error. Error triggers or ERGONOMIC TRAPS are first identified and then designed out of the system. See ENGINEERING CONTROLS. See also FAIL-SAFE; PREVENTION DESIGN.

**exclusive** *adj.* completely separate and incompatible. For example, gender has two exclusive categories of male and female. See also MUTUALLY EXCLUSIVE EVENTS.

**excoriation (skin-picking) disorder** in DSM-5, a new diagnosis characterized by recurrent picking at one's own skin, leading to lesions and causing significant distress or impairment.

**excrement** *n.* see FECES.

**exculpatory evidence** evidence supporting a defendant's claim of innocence.

**executive** *n.* a theoretical superordinate mechanism in some models of cognition—particularly those in cognitive science, cognitive neuropsychology, and artificial intelligence—that organizes, initiates, monitors, and otherwise controls information-processing activities and other mental operations. A similar concept specific to working memory is that of the CENTRAL EXECUTIVE.

**executive area** a region of the brain hypothesized to account for higher order brain functions, such as thinking and reasoning (see EXECUTIVE FUNCTIONS). The FRONTAL LOBE is commonly referred to as an executive area.

**executive attention** see SELECTIVE ATTENTION.

**executive coaching** one-on-one, customized counseling and feedback provided to managers in an organization to develop their interpersonal and other managerial skills and enhance their ability to achieve short- and long-term organizational goals. Executive coaching is provided by external consultants or similar professional coaches, rather than by managers, peers, or human resources personnel within the organization. See MANAGEMENT DEVELOPMENT.

**executive control structure** a theoretical mental system governing the use of different cognitive strategies: an internal blueprint. Particularly relevant to problem solving, executive control structures contain representations of situations, their objectives, and the various procedures available for obtaining them. They are one of two mechanisms proposed by Canadian developmental psychologist Robbie Case (1944–2000) as guiding learning and thinking processes in children, the other being the CENTRAL CONCEPTUAL STRUCTURE.

**executive dysfunction** impairment in the ability to think abstractly; plan; solve problems; synthesize information; or start, continue, and stop complex behavior. It is related especially to disorders of the frontal lobe or associated subcortical pathways.

**executive functions** higher level cognitive processes of planning, decision making, problem solving, action sequencing, task assignment and organization, effortful and persistent goal pursuit, inhibition of competing impulses, flexibility in goal selection, and goal-conflict resolution. These often involve the use of language, judgment, abstraction and concept formation, and logic and reasoning. They are frequently associated with neural networks that include the frontal lobe, particularly the prefrontal cortex. Deficits in executive functioning are seen in various disorders, including Alzheimer's disease and schizophrenia. In the latter, for example, selection and maintenance of goals may be impaired, as may the ability to exclude distractions. Also called **central processes; higher order processes**. See also SUPERVISORY ATTENTIONAL SYSTEM.

**executive leadership** the processes by which those occupying the highest level positions of power and authority in an organization structure, direct, coordinate, and motivate others toward achieving certain goals.

**executive organ** the body organ that plays the major role in responding to a stimulus. For example, when the stimulus instigates touching an object, the hand becomes the executive organ. Other organs often play subsidiary roles; for example, the eye that helps direct the hand serves as an **auxiliary organ**.

**executive self** the subjective AGENT to which regulation and implementation of voluntary actions is ordinarily attributed. The concept of an executive self has acquired considerable scientific plausibility, being associated with well-studied functions of the prefrontal cortex and other brain structures. Self-descriptions are vulnerable to a variety of attribution errors, however (see ILLUSION OF AGENCY).

**executive stage** see SCHAIK'S STAGES OF COGNITIVE DEVELOPMENT.

**executive stress** strain experienced by management personnel who are responsible for major decisions, the effectiveness of subordinates, and the success of the company as a competitive organization. See BURNOUT; OCCUPATIONAL STRESS.

**Exelon** *n.* a trade name for RIVASTIGMINE.

**exemplar theory** the hypothesis that categorization depends on specific remembered instances of the category, as opposed to an abstract PROTOTYPE or a feature-based rule that defines category membership. Exemplar theory has also been applied to questions of attention, skill acquisition, and social decision making, among other issues. Exemplar theories of prejudice, for example, suggest that stereotypes are not just abstractions about the typical characteristics of members of a particular group but instead are based on the perceiver's memories of specific individual group members. Also called **instance theory**.

**exemplary damages** see PUNITIVE DAMAGES.

**exemplification** *n.* a strategy for SELF-PRESENTATION that involves inducing other people to regard one as a highly moral, virtuous person whose actions are consistent with positive, shared values.

**exercise** *n.* a form of physical activity that is planned, repetitive in nature, and designed to enhance or maintain physical condition. Physical exercise may also be used as an adjunct to mental health therapy. See also EXERCISE PSYCHOLOGY; TIME-OUT THEORY.

**exercise addiction** the condition of being dependent on or excessively devoted to physical exercise. Stopping exercise will cause the addicted person to experience withdrawal symptoms. Also called **exercise dependence**. See NEGATIVE EXERCISE ADDICTION; POSITIVE EXERCISE ADDICTION.

**exercise adherence** a combination of attending to an exercise program and achieving the set intensity and duration of exercise in the program. Also called **exercise compliance**.

**exercise-behavior model** an adaptation of the HEALTH-BELIEF MODEL that identifies the relationships of the following to likelihood of exercising: (a) personal predispositions, (b) sociodemographic variables, (c) perceived cost and benefits of exercising, and (d) perceived self-efficacy and locus of control. [proposed in 1984 by health education specialists Melody Powers Noland (1952– ) and Robert H. Feldman]

**exercise high** a feeling of euphoria during or immediately after physical exercise. See ENDORPHIN; RUNNER'S HIGH.

**exercise obsession** see NEGATIVE EXERCISE ADDICTION.

**exercise play** play that involves gross, vigorous movement in various directions, such as running or jumping. It

usually begins around 2 years of age and peaks between 5 and 6 years. Exercise play is a form of LOCOMOTOR PLAY and may or may not be social.

**exercise psychology** a combination of exercise science and psychology used to study the psychological circumstances and consequences of involvement in exercise. See also SPORT AND EXERCISE PSYCHOLOGY.

**exercise therapy** the prevention or treatment of disorders and chronic disease through regular, repetitive physical activity that enhances fitness and mobility. This type of therapy is designed to improve the functional capacity of body structures and has been demonstrated to have beneficial effects for many conditions, such as the alleviation of symptoms of depression and multiple sclerosis and the reduction in risk of developing cardiovascular disease and osteoporosis. More generally, there is widespread research evidence for a positive relationship between regular exercise and several indices of mental health and physical well-being.

**exhaustion** *n.* a state of extreme FATIGUE.

**exhaustion death** see LETHAL CATATONIA.

**exhaustion delirium** delirium occurring under conditions of extreme fatigue resulting from prolonged and intense overexertion, particularly when coupled with other forms of stress, such as prolonged insomnia, starvation, excessive heat or cold, or exposure to toxins. It is typically associated with the extreme physical effort required of those who engage in endurance sports or of others facing extreme environmental conditions, as well as with debilitating diseases.

**exhaustion stage** see GENERAL ADAPTATION SYNDROME.

**exhaustive** *adj.* complete or all encompassing. For example, a set of 13 hearts, 13 spades, 13 diamonds, 13 clubs, and two jokers forms an exhaustive set of all possible playing cards that could be drawn.

**exhaustive search** any SEARCH process in which every item of a set is checked before a decision is made about the presence or absence of a target item. This may be a search for particular items in memory, a VISUAL SEARCH, or any problem-solving exercise that involves choosing the best path to a solution from a number of alternative paths. Compare SELF-TERMINATING SEARCH. See also ALGORITHM; HEURISTIC SEARCH.

**exhibitionism** *n.* **1.** the disposition or tendency to draw attention to oneself, particularly through conspicuous behavior. See also ATTENTION-GETTING. **2.** a PARAPHILIA in which the genitals are exposed to an unsuspecting stranger as a means of achieving sexual excitement, but without any attempt at further sexual activity with the stranger. —**exhibitionist** *n.*

**existence** *n.* **1.** being: the quality by virtue of which something is, and which distinguishes it from what is not. **2.** in EXISTENTIALISM, the concrete lived experience of human beings rooted in a concrete world, as opposed to a more abstract concept of a human being, such as an ESSENCE. —**existent** *adj.*

**existence, relatedness, and growth theory (ERG theory)** a variation of MASLOW'S MOTIVATIONAL HIERARCHY as applied in industrial and organizational psychology. The model recognizes three main categories of WORK MOTIVATION: **existence needs**, relating to the physical needs of the individual (food, clothing, shelter); **relatedness needs**,

involving interpersonal relations with others on and off the job; and **growth needs**, in the form of personal development and improvement. [proposed in 1969 by U.S. organizational psychologist Clayton P. Alderfer (1940– )]

**existential analysis** a type of psychoanalysis, or a phase in EXISTENTIAL PSYCHOTHERAPY, that places an emphasis on conscious perception and experience over unconscious motivation and drive in the search for meaning. The therapist typically takes an active, often confrontational, role by posing difficult questions and noting maladaptive decision making. The approach to “being” is future- or growth-oriented, and the goal is to develop and encourage highly conscious decision making on the part of the client. Also called **existential psychoanalysis**.

**existential anxiety 1.** in EXISTENTIALISM, the angst associated with one’s freedom as a human being to make choices; with one’s responsibility for the consequences of those choices; and with the sense that one’s existence is devoid of absolute meaning and purpose given that such choices occur in the absence of rational certainty or structure. See NOTHINGNESS. **2.** a general sense of anguish or despair associated with an individual’s recognition of the inevitability of death.

**existential crisis 1.** in EXISTENTIALISM, a crucial stage or turning point at which an individual is faced with finding meaning and purpose in life and taking responsibility for his or her choices. See EXISTENTIAL NEUROSIS; EXISTENTIAL VACUUM. **2.** more generally, any psychological or moral crisis that causes an individual to ask fundamental questions about human existence.

**existential dread** a profound, deep-seated psychic or spiritual condition of insecurity and despair in relation to the human condition and the meaning of life. See also ANGST.

**existential–humanistic therapy** a form of psychotherapy that focuses on the entire person rather than solely on behavior, cognition, or underlying motivations. Emphasis is placed on the client’s subjective experiences, free will, and ability to decide the course of his or her own life. Also called **humanistic–existential therapy**.

**existential intelligence** a kind of intelligence proposed as a “candidate” intelligence in the MULTIPLE-INTELLIGENCES THEORY. It is involved in understanding larger fundamental questions of existence and the role and place of humans in the universe. At present, there are no developed measures of existential intelligence.

**existentialism** *n.* a philosophical and literary movement that emerged in Europe in the period between the two World Wars and became the dominant trend in Continental thought during the 1940s and 1950s. Existentialism is notoriously difficult to sum up in a single definition—partly because many who might be identified with the movement reject the label, and partly because the movement is itself often a rejection of systematization and classification. The origins of existentialism have been traced to a range of thinkers, including French philosopher and mathematician Blaise Pascal (1623–1662), Danish philosopher Søren Kierkegaard (1813–1855), German philosopher Friedrich Nietzsche, and Russian novelist Fyodor Dostoevsky (1821–1881). However, the first fully developed philosophy of existentialism is usually taken to be the EXISTENTIAL PHENOMENOLOGY elaborated by German philosopher Martin Heidegger (1889–1976) in the 1910s and 1920s. Heidegger’s concept of DASEIN was a key influence on the work

of the French philosopher and author Jean-Paul Sartre (1905–1980), who is usually seen as the existentialist thinker *par excellence*. In the immediate postwar years, Sartre popularized both the term *existentialism* and most of the ideas now associated with it.

Existentialism represents a turning away from systematic philosophy, with its emphasis on metaphysical absolutes and principles of rational certainty, and toward an emphasis on the concrete existence of a human being “thrown” into a world that is merely “given” and contingent. Such a being encounters the world as a subjective consciousness, “condemned” to create its own meanings and values in an “absurd” and purposeless universe. The human being must perform this task without benefit of a fixed ESSENCE or inherent nature, and in the absence of any possibility of rational certainty. However, by accepting the burden of this responsibility, and refusing the “bad faith” of religion and other spurious rationalizations, he or she can achieve AUTHENTICITY. Various forms of EXISTENTIAL PSYCHOLOGY have taken up the task of providing explanations, understandings of human behavior, and therapies based on existentialist assumptions about human existence. They have emphasized such constructs as alienation, authenticity, and freedom, as well as the difficulties associated with finding meaning and overcoming anxiety. —**existential** *adj.* —**existentialist** *n., adj.*

**existential judgment** in philosophy, a judgment having to do with the existence, origin, or nature of a thing (i.e., its factual status), as contrasted with a judgment of the meaning, value, or importance of a thing.

**existential living** the capacity to live fully in the present and respond freely and flexibly to new experience without fear. Existential living is considered to be a central feature of the FULLY FUNCTIONING PERSON. [defined in psychology by Carl ROGERS]

**existential neurosis** a pathological condition characterized by feelings of despair and anxiety that arise from living inauthentically, that is, from failing to take responsibility for one’s own life and to make choices and find meaning in living. See AUTHENTICITY; EXISTENTIAL CRISIS; EXISTENTIAL VACUUM.

**existential phenomenology** a philosophical development from the PHENOMENOLOGY of German thinker Edmund Husserl (1859–1938) that can be seen most clearly in the work of German philosopher Martin Heidegger (1889–1976) and French philosopher Maurice Merleau-Ponty (1908–1961). Phenomenology originally sought to achieve immediate and direct apprehension of phenomena at the most fundamental level, the level of that which manifests itself to pure consciousness. Heidegger’s contribution was to turn the phenomenological method toward the existential, or lived experience, rather than toward mere objects of consciousness. Thus, existential phenomenology seeks to get at the meaning of lived experience through the careful and systematic analysis of lived experience itself. In its fundamental project and subject matter, Heidegger’s work of the 1910s and 1920s anticipated the French EXISTENTIALISM of the postwar era. See BEING-IN-THE-WORLD; DASEIN.

**existential psychoanalysis** see EXISTENTIAL ANALYSIS.

**existential psychology** a general approach to psychological theory and practice that derives from EXISTENTIALISM. It emphasizes the subjective meaning of human experience, the uniqueness of the individual, and personal

responsibility reflected in choice. Such an approach was pioneered by Swiss existential psychologist Ludwig Binswanger (1881–1966). See BEING-IN-THE-WORLD; WORLD DESIGN. See also HUMANISTIC PSYCHOLOGY.

**existential psychotherapy** a form of psychotherapy that deals with the HERE AND NOW of the client's total situation rather than with his or her past or underlying dynamics. It emphasizes the exploration and development of meaning in life, focuses on emotional experiences and decision making, and stresses a person's responsibility for his or her own existence. See also LOGOTHERAPY.

**existential vacuum** the inability to find or create meaning in life, leading to feelings of emptiness, alienation, futility, and aimlessness. Most existentialists have considered meaninglessness to be the quintessential symptom or ailment of the modern age. See EXISTENTIAL CRISIS; EXISTENTIAL NEUROSIS. See also LOGOTHERAPY. [introduced by Viktor E. FRANKL]

**exit interview** **1.** a meeting between a student and a school counselor before the student leaves to begin high school, college, technical school, a vocational program, or a job. Future plans (e.g., future course of study) and the student's degree of preparation are discussed. **2.** an employee's final meeting with a supervisor or personnel staff primarily to discuss the reasons for the employee's resignation or termination of employment. Information from such interviews can be used to reduce TURNOVER of and improve JOB SATISFACTION for remaining staff.

**exo- (ex-)** *prefix* outside or external.

**exocrine gland** any gland that secretes a product onto the outer body surface or into body cavities through a duct. Examples are the tear-producing **lacrimal** (or **lachrymal**) **gland** and the **SALIVARY GLAND**. Compare **ENDOCRINE GLAND**.

**exogamy** *n.* the custom or practice of marrying outside one's **KINSHIP NETWORK** or other religious or social group. Compare **ENDOGAMY**. —**exogamous** *adj.*

**exogenous** *adj.* originating outside the body, referring, for example, to drugs (exogenous chemicals) or to phenomena, conditions, or disorders resulting from the influence of external factors. Compare **ENDOGENOUS**. —**exogenously** *adv.*

**exogenous attention** see **INVOLUNTARY ATTENTION**.

**exogenous cue** a **CUE**, usually the onset of a stimulus in the peripheral visual field, that draws attention automatically to the location of the stimulus. It initiates involuntary movement of attention. Compare **ENDOGENOUS CUE**.

**exogenous depression** see **REACTIVE DEPRESSION**.

**exogenous variable** an **INDEPENDENT VARIABLE** whose value is determined by factors outside the model or system under study. Compare **ENDOGENOUS VARIABLE**.

**exon** *n.* a sequence of DNA within a gene that encodes a part or all of the gene's product or function. Exons are separated by noncoding sequences (see **INTRON**).

**exophoria** *n.* deviation of one eye in an outward direction. See also **PHORIA**.

**exophthalmos** *n.* abnormal protrusion of the eyeball, a condition commonly associated with hyperthyroidism. Exophthalmos combined with a goiter, a swelling in the neck due to an enlarged thyroid gland (**exophthalmic goiter**), is a prominent feature of **GRAVES' DISEASE**. Exophthalmos may

also be the result of a tumor or infection involving the eye. It is often characterized by the appearance of a fixed stare. —**exophthalmic** *adj.*

**exopsychic** *adj.* characterizing mental activity that purportedly produces effects outside the individual. Compare **ENDOPSYPCHIC**.

**exorcism** *n.* the act or practice in which supposed evil spirits are expelled from a person believed to be possessed, or a place thought to be haunted, by means of certain rites, ceremonies, prayers, and incantations. It was once widely believed that such spirits were the major cause of mental disease and other disorders and that exorcism was therefore a suitable form of treatment. The Roman Catholic Church still performs ritual exorcisms in certain very restricted circumstances. See also **INHABITANCE**. —**exorcise** *vb.* —**exorcist** *n.*

**exosomatic method** a technique used in psychogalvanic-response studies in which skin resistance to a small electric current from an external source is measured. See **GALVANIC SKIN RESPONSE**.

**exosystem** *n.* in **ECOLOGICAL SYSTEMS THEORY**, those societal structures that function largely independently of the individual but nevertheless affect the immediate context within which he or she develops. They include the government, the legal system, and the media. Compare **CHRONOSYSTEM**; **MACROSYSTEM**; **MESOSYSTEM**. [introduced by Urie **BRONFENBRENNER**]

**exotropia** *n.* the permanent outward deviation of one eye. Also called **divergent strabismus**; **walleye**. See also **STRABISMUS**; **TROPIA**.

**exp** abbreviation for **EXPONENTIAL FUNCTION**.

**expanded consciousness** a sense that one's mind has been opened to a new or larger kind of awareness, associated particularly with mystical experiences, meditation, or hallucinogenic drug use. See also **ALTERED STATE OF CONSCIOUSNESS**.

**expansion** *n.* a description of a mathematical or statistical function via a series of sums.

**expansive delusion** a less common name for a **DELUSION OF GRANDEUR**.

**expansive mood** a mood that reflects feelings of **GRANDIOSITY**.

**expansiveness** *n.* a personality trait manifested by loquaciousness, overfriendliness, hyperactivity, and lack of restraint.

**ex-patient club** a group that provides individuals discharged from a psychiatric hospital with social and recreational experience, promotes their rehabilitation and readjustment to posthospital life, and maintains their mental health improvement through group support and, in some cases, group therapy. Ex-patient clubs may be organized by former patients or by the discharging hospital as part of its aftercare program. See also **MENTAL HEALTH SUPPORT ORGANIZATION**.

**expectancy** *n.* **1.** the internal state resulting from experience with predictable relationships between stimuli or between responses and stimuli. This basic meaning becomes slightly more specific in some fields. For example, in cognitive psychology, it refers to an attitude or **MENTAL SET** that determines the way in which a person approaches a situation, and in motivation theory, it refers to an individ-



ual's belief that his or her actions can produce a particular outcome (e.g., attainment of a goal). **2.** see EXPECTATION. —**expectant** *adj.*

**expectancy effect** the effect of one person's expectation about the behavior of another person on the actual behavior of that other person (**interpersonal expectancy effect**), or the effect of a person's expectation about his or her own behavior on that person's actual subsequent behavior (**intrapersonal expectancy effect**). See also EXPERIMENTER EXPECTANCY EFFECT.

**expectancy theory 1.** a theory that cognitive learning involves acquired expectancies and a tendency to react to certain objects as signs of other objects previously associated with them. **PURPOSIVE BEHAVIORISM** is a specific form of expectancy theory. **2.** see VALENCE-INSTRUMENTALITY-EXPECTANCY THEORY.

**expectancy-value model** the concept that motivation for an outcome depends on the significance of that outcome and the probability of achieving it.

**expectancy wave** see CONTINGENT NEGATIVE VARIATION.

**expectation** *n.* **1.** a state of tense, emotional anticipation. **2.** in probability and statistics, the long-term average of a **RANDOM VARIABLE**. For example, the expectation is that the mean for a specific random variable obtained with an extremely large sample will equal the mean of the population of interest. Also called **expectancy**. See EXPECTED VALUE.

**expectation-states theory** a sociological explanation of status differentiation in groups proposing that group members allocate status not only to those who possess qualities suggesting competence at a task (**SPECIFIC-STATUS CHARACTERISTICS**) but also to those who have qualities that the members (mistakenly) think are indicators of competence and potential, such as sex, age, wealth, and ethnicity (**DIFFUSE-STATUS CHARACTERISTICS**). See also STATUS GENERALIZATION.

**expected frequency** a **FREQUENCY** predicted from a theoretical model. For example, a university administrator may want to examine the observed frequency of female and male students and compare it to the expected frequency for each gender to determine how similar the pattern is to that in the general population. Expected frequencies are chiefly used in the **CHI-SQUARE TEST**.

**expected value** the value of a random variable or one of its functions as derived by mathematical calculation rather than observation. It is symbolized by  $E(x)$ , with  $x$  varying according to the specific item of interest that is being calculated. Usually, the expected value is a mean or weighted average.

**experience** *n.* **1.** an event that is actually lived through, as opposed to one that is imagined or thought about. **2.** the present contents of **CONSCIOUSNESS**. **3.** a stimulus that has resulted in learning. —**experiential** *adj.*

**experience-dependent process** in brain development, changes in neurochemistry, anatomy, electrophysiology, and neuronal structure following various experiences that are unique to an individual and may occur at any time during the lifespan. The experience of training in certain behavioral and cognitive tasks, for example, has been shown to increase the length of dendrites and spine density, the primary sites of excitatory synapses, on individual neurons, effectively increasing the amount of space available for synaptic connections. Such changes are thought to

be among the primary mechanisms by which the brain adapts to environmental demands and thus may represent an important component of the neural substrate of learning and memory.

**experience-expectant process** in brain development, a predetermined maturational process in which synapses are formed and maintained only when an organism has undergone expected species-typical experiences during a particular **CRITICAL PERIOD**. Such functions as vision will develop for all members of a species if given species-typical environmental stimulation (e.g., light).

**experienter** *n.* in **CASE GRAMMAR**, the entity that experiences the effect of the action, state, or process described in a sentence, such as *John* in *John sees Mary*, *The wind felt soft to John*, and *The walk invigorated John*. Note that experienter case is independent of the grammatical role of *John* in the sentence. The category, which overlaps with that of **PATIENT**, is usually reserved for **ANIMATE NOUNS** capable of sensory or emotional experience. See also **AGENT**; **INSTRUMENTAL**.

**experience-sampling method (ESM)** a procedure for assessing research participants' thoughts and feelings at specific, predetermined points in time. For example, researchers conducting a weight reduction program may check in with participants at various times to assess their dietary intake of healthy food and any urges to eat unhealthy food. The experience-sampling method is believed to provide more reliable input on the inner state of participants than may be obtained via after-the-fact feedback.

**experiential family therapy** an intervention that emphasizes intuition, feelings, and underlying processes in treating families and deemphasizes theoretical frameworks. The work is often characterized by the use of the therapist's own feelings and self-disclosures in interactions with clients. Notable experiential family therapists have included U.S. psychiatrists Carl A. Whitaker (1912–1995) and Virginia M. Satir (1916–1988).

**experiential history** the social, environmental, and behavioral components of an individual's background from birth to death.

**experiential knowledge** understanding and expertise that emerge from life experience rather than from formal education or professional training. For example, members of **SELF-HELP GROUPS** draw upon experiential knowledge in supporting and helping each other.

**experiential learning** learning that occurs by actively performing and participating in an activity.

**experiential psychotherapy** a broad family of psychotherapies originating in the 1950s and 1960s and falling under the umbrella of existential-humanistic psychology. A core belief of the approach is that true client change occurs through direct, active "experiencing" of what the client is undergoing and feeling at any given point in therapy, both on the surface and at a deeper level. Experiential therapists typically engage clients very directly with regard to accessing and expressing their inner feelings and experiencing both present and past life scenes, and they offer clients perspectives for integrating such experiences into realistic and healthy self-concepts. Experiential psychotherapy has its antecedents in the work of U.S. psychiatrists Carl A. Whitaker (1912–1995) and Thomas P. Malone (d. 2000), U.S. psychologist Carl ROGERS, Austrian-born U.S. philosopher and psychologist Eugene T. Gendlin (1926– ), and others.

**experiential subtheory** a subtheory in the TRIARCHIC THEORY OF INTELLIGENCE specifying the kinds of experience to which the components of intelligence (specified in the COMPONENTIAL SUBTHEORY) are applied. According to the experiential subtheory, people are creatively intelligent to the extent that they can cope with relative novelty and automatize routine aspects of tasks so as to devote more resources to novel stimuli in their environment.

**experiment** *n.* a series of observations conducted under controlled conditions to study a relationship with the purpose of drawing causal inferences about that relationship. An experiment involves the manipulation of an INDEPENDENT VARIABLE, the measurement of a DEPENDENT VARIABLE, and the exposure of various participants to one or more of the conditions being studied. RANDOM SELECTION of participants and their RANDOM ASSIGNMENT to conditions also are necessary in experiments. —**experimental** *adj.*

**experimental aesthetics** the use of techniques of experimental psychology in the study of responses to natural objects or art forms and their components. Studies in experimental aesthetics may also involve the use of Gestalt and other concepts in analyzing emotional effects and preferences for colors and patterns.

**experimental analysis of behavior** an approach to experimental psychology that explores the relationships between particular experiences and changes in behavior, emphasizing the behavior of individuals rather than group averages. It is concerned especially with describing how contingencies of reinforcement control the rate of an instrumental response.

**experimental attrition** see ATTRITION.

**experimental condition** a level of the INDEPENDENT VARIABLE that is manipulated by the researcher in order to assess the effect on a DEPENDENT VARIABLE. Participants in an experimental condition receive some form of TREATMENT or experience whereas those in a CONTROL CONDITION do not. For example, patients in an experimental condition may receive a new drug, whereas those in a control condition may receive a pill that looks like the new drug but is only a PLACEBO containing some inert substance.

**experimental control** see CONTROL.

**experimental design** an outline or plan of the procedures to be followed in scientific experimentation in order to reach valid conclusions, with consideration of such factors as participant selection, variable manipulation, data collection and analysis, and minimization of external influences.

**experimental epilepsy** induction of repeated episodes of abnormal neural activity (seizures) in a nonhuman animal through electrical or chemical brain stimulation or through repeated sensory stimulation.

**experimental ethics** see RESEARCH ETHICS.

**experimental group** a group of participants in a research study who are exposed to a particular manipulation of the INDEPENDENT VARIABLE (i.e., a particular treatment or TREATMENT LEVEL). The responses of the experimental group are compared to the responses of a CONTROL GROUP, other experimental groups, or both.

**experimental hypothesis** a premise that describes what a researcher in a scientific study hopes to demonstrate if certain conditions are met, such as RANDOM SELEC-

TION of participants, RANDOM ASSIGNMENT to EXPERIMENTAL GROUPS or CONTROL GROUPS, and manipulation of an INDEPENDENT VARIABLE.

**experimental manipulation** in an experiment, the manipulation of one or more INDEPENDENT VARIABLES in order to investigate their effect on a DEPENDENT VARIABLE. An example would be the assignment of a specific treatment or PLACEBO to participants in a research study in order to control possible CONFOUNDS and assess the effect of the treatment.

**experimental method** a system of scientific investigation, usually based on a design to be carried out under controlled conditions, that is intended to test a hypothesis and establish a causal relationship between independent and dependent variables.

**experimental neuropsychology** the use of empirical methods to study the physiological structures and processes of the nervous system and their relationships to cognition and behavior. For example, an **experimental neuropsychologist** might examine how different probes affect RECOGNITION MEMORY performance in individuals with and without schizophrenia in order to identify which memory processes are most vulnerable to disruption in schizophrenia and to determine how people with the disorder can best remember. Experimental neuropsychology encompasses both healthy functioning and impairment in a variety of areas and relies on numerous techniques, such as laboratory research, NEUROPSYCHOLOGICAL TESTS, BRAIN IMAGING, ELECTROENCEPHALOGRAPHY, and qualitative analysis.

**experimental neurosis** a pathological condition induced in a nonhuman animal during conditioning experiments requiring discriminations between nearly indistinguishable stimuli or involving punishment for necessary activities (e.g., eating). Experimental neurosis may be characterized by a range of behavioral abnormalities, including agitation, irritability, aggression, regressive behavior, escape and avoidance, and disturbances in physiological activity such as pulse, heart, and respiration rates. For example, in one experiment a dog learned to salivate in the presence of a circle, which had been paired with food, but not in the presence of an ellipse, which had not been paired with food. Faced with a difficult discrimination, the dog became agitated, barked violently, and attacked the apparatus, and all simple discriminations that had been learned were lost.

**experimental philosophy 1.** in the late 17th and 18th centuries, a name for the new discipline of experimental science then emerging. Use of the term often went with an optimism about the ability of experimental science to answer the questions that had been posed but unsolved by “natural philosophy.” The systematic work of Isaac NEWTON is often given as a defining example of experimental philosophy. **2.** a late 20th-century movement holding that modern experimental science, particularly neuroscience, will ultimately uncover the biological foundations of thought and thereby provide a material answer to the questions of EPISTEMOLOGY. In other words, experimental philosophy holds that answers to philosophical questions regarding the mind and its activities can, and likely will, be reduced to questions of how the brain functions. See REDUCTIONISM.

**experimental psychology** the scientific study of behavior, motives, or cognition in a laboratory or other controlled setting in order to predict, explain, or influence

behavior or other psychological phenomena. Experimental psychology aims at establishing quantified relationships and explanatory theory through the analysis of responses under various controlled conditions and the synthesis of adequate theoretical accounts from the results of these observations. See also **EMPIRICAL PSYCHOLOGY**.

**experimental realism** the extent to which a controlled study is meaningful and engaging to participants, eliciting responses that are spontaneous and natural. See also **MUNDANE REALISM**.

**experimental research** research utilizing randomized assignment of participants to conditions and systematic manipulation of variables with the objective of drawing causal inference. It is generally conducted within a laboratory or other controlled environment, which in reducing the potential influence of extraneous factors increases **INTERNAL VALIDITY** but decreases **EXTERNAL VALIDITY**. Compare **CORRELATIONAL RESEARCH**; **FIELD RESEARCH**; **QUASI-EXPERIMENTAL RESEARCH**.

**experimental treatment** **1.** in research, the conditions applied to one or more groups that are expected to cause change in some outcome or **DEPENDENT VARIABLE**. **2.** an intervention or regimen that has shown some promise as a cure or ameliorative for a disease or condition but is still being evaluated for efficacy, safety, and acceptability.

**experimental unit** the unit to which an experimental manipulation is applied. For example, if an intervention is applied to a classroom of students, the classroom (not the individual students) is the experimental unit. In **QUASI-EXPERIMENTAL RESEARCH** and other nonexperimental contexts, the term **UNIT OF ANALYSIS** is used instead.

**experimental variable** an **INDEPENDENT VARIABLE** that is manipulated by the researcher to determine its relationship to or influence upon some outcome or **DEPENDENT VARIABLE**.

**experimenter bias** any systematic errors in the research process or the interpretation of its results that are attributable to a researcher's behavior, preconceived beliefs, expectancies, or desires about results. For example, a researcher may inadvertently cue participants to behave or respond in a particular way. See **EXPERIMENTER EFFECT**.

**experimenter drift** a gradual and nonconscious change in the way a researcher conducts or interprets a controlled study, leading to **SYSTEMATIC ERROR** in the results.

**experimenter effect** any influence a researcher may have on the results of his or her research, derived from either interaction with participants or unintentional errors of observation, measurement, analysis, or interpretation. In the former, the experimenter's personal characteristics (e.g., age, sex, race), attitudes, and expectations directly affect the behavior of participants. In the latter, the experimenter's procedural errors (often arising from his or her expectations about results) have no effect on participant responses but indirectly distort the research findings.

**experimenter expectancy effect** a type of **EXPERIMENTER EFFECT** in which a researcher's expectations about the findings of his or her research are inadvertently conveyed to participants and influence their responses. This distortion of results arises from participants' reactions to subtle cues (**DEMAND CHARACTERISTICS**) unintentionally given by the researcher—for example, through body movements, gestures, or facial expressions—and may threaten

the **ECOLOGICAL VALIDITY** of the research. The term is often used synonymously with **ROSENTHAL EFFECT**.

**experiment-wise alpha level** the **SIGNIFICANCE LEVEL** (i.e., the acceptable risk of making a **TYPE I ERROR**) that is established by a researcher for a set of multiple comparisons and statistical tests. It is often set at the conventional level of .05; by setting the alpha for individual tests (the **TESTWISE ALPHA LEVEL**) at a lower rate (e.g., .01), it can be ensured that the whole set of tests does not produce error greater than the desired experiment-wise level.

**experiment-wise error rate** in a test involving **MULTIPLE COMPARISONS**, the probability of making at least one **TYPE I ERROR** over an entire research study. The experiment-wise error rate differs from the **TESTWISE ERROR RATE**, which is the probability of making a Type I error when performing a specific test or comparison.

**expert authority** see **AUTHORITY**.

**expert fallacy** see **FALSE AUTHORITY**.

**expertise** *n.* a high level of domain-specific knowledge and skills accumulated with age or experience.

**expert–novice differences** the ways in which the performance of those skilled in a particular domain will typically differ from that of those who have no experience in that domain.

**expert performance** the perception of small differences between two stimuli. For example, distinguishing between identical twins might require expert performance.

**expert power** a capacity to influence others that is based on the assumption that the influencer is highly skilled.

**expert system** a program, often mimicking expert problem-solving performance, that uses the explicit representation of human knowledge, usually in the form of “if → then” rules. The expert system often employs a certainty-factor algebra to support reasoning in uncertain situations in which there are missing or vague data or unclear alternatives. Expert systems are used in such fields as medical diagnosis and financial prediction. Also called **knowledge-based system (KBS)**.

**expert testimony** evidence given in court by an **EXPERT WITNESS**. Unlike other testimony, this evidence may include the witness's opinions about certain facts to help the **TRIER OF FACT** to make a decision. See **OPINION TESTIMONY**; **ULTIMATE OPINION TESTIMONY**.

**expert witness** an individual who is qualified to testify on scientific, technical, or professional matters and provide an opinion concerning the evidence or facts presented in a court of law. Eligibility to testify as an expert witness is based on the person's special skills or knowledge as judged by the court. In U.S. federal courts, eligibility criteria are established by the Federal Rules of Evidence 702–706; see **DAUBERT TEST**. Mental health professionals often serve as expert witnesses in such cases as those involving insanity pleas and child custody.

**expiatory punishment** a punishment in which the wrongdoer is made to suffer in proportion to the severity of the wrongdoing, but not necessarily in a way that reflects the nature of the transgression. Compare **RECIPROCAL PUNISHMENT**.

**explained variance** the proportion of the variance in a **DEPENDENT VARIABLE** that can be determined or explained

by one or more other variables. In ANALYSIS OF VARIANCE procedures, the explained variance usually is given by ETA SQUARED or OMEGA SQUARED, whereas in prediction methods, such as MULTIPLE REGRESSION, it usually is given by the COEFFICIENT OF MULTIPLE DETERMINATION. Explained variance also is applied in procedures such as PRINCIPAL COMPONENTS ANALYSIS or FACTOR ANALYSIS to describe the proportion of the variance in a measure that can be understood or predicted from a component or FACTOR. Compare ERROR VARIANCE.

**explanation** *n.* an account that provides a meaning for some phenomenon or event in terms of causal conditions, a set of beliefs or assumptions, or a metaphor that relates it to something already understood. See SCIENTIFIC EXPLANATION. —**explanatory** *adj.*

**explanatory research** a study conducted to assess why a particular finding occurred. For example, one might conduct explanatory research to determine why individuals who have been abused as children tend to be at higher risk for negative outcomes as adults. Compare PREDICTIVE RESEARCH.

**explanatory style** an individual's unique way of describing and explaining some phenomenon, event, or personal history.

**explanatory variable** see INDEPENDENT VARIABLE.

**explant** *n.* a small piece of tissue that is isolated from the body and grown in an artificial medium, often for experimental purposes.

**explicit attitude** a relatively enduring and general evaluative response of which a person is consciously aware. Compare IMPLICIT ATTITUDE.

**explicit attitude measure** any procedure for evaluating attitudes in which a person is consciously aware of the fact that his or her attitude toward something or someone is being assessed. Measures of this type are generally DIRECT ATTITUDE MEASURES. Compare IMPLICIT ATTITUDE MEASURE.

**explicit behavior** see OVERT BEHAVIOR.

**explicit emotion regulation** see EMOTION REGULATION.

**explicit memory** long-term memory that can be consciously recalled: general knowledge or information about personal experiences that an individual retrieves in response to a specific need or request to do so. This term, proposed in 1985 by Canadian psychologist Peter Graf and U.S. psychologist Daniel L. Schacter (1952– ), is used interchangeably with DECLARATIVE MEMORY but typically with a performance-based orientation—that is, a person is aware that he or she possesses certain knowledge and specifically retrieves it to complete a task overtly eliciting that knowledge (e.g., a multiple-choice exam). Compare IMPLICIT MEMORY.

**explicit memory test** a memory test that elicits conscious memories of previously experienced events. Such tests (e.g., FREE RECALL, RECOGNITION METHOD) include explicit instructions to participants to recall earlier events. Also called **direct memory test**. Compare IMPLICIT MEMORY TEST. See also CONCEPTUAL TEST; PERCEPTUAL TEST.

**explicit prejudice** a negative attitude against a specific social group that is consciously held, even if not expressed publicly. The person is thus aware of and can report on this type of prejudice, typically via questionnaires that require

participants to indicate whether they agree or disagree with the statements presented. Compare IMPLICIT PREJUDICE.

**explicit process** a COGNITIVE PROCESS that can be described accurately and that is available to introspection. Compare IMPLICIT PROCESS.

**exploitative orientation** in the existential psychoanalysis of Erich FROMM, a character pattern marked by the use of stealth, deceit, power, or violence to obtain what the individual wants. The character type is plagiaristic rather than spontaneously or resourcefully creative. Also called **exploitative character**. Compare HOARDING ORIENTATION; MARKETING ORIENTATION.

**exploratory behavior** the movements made by human beings or other animals in orienting to new environments. Exploratory behavior occurs even when there is no obvious biological reward associated with it. A lack of such behavior in a new environment is often used as a measure of fearfulness or emotionality. See also DIVERSIVE EXPLORATION; INSPECTIVE EXPLORATION.

**exploratory data analysis (EDA)** the analysis of data to generate new research questions or insights rather than to address specific preplanned research questions. Compare CONFIRMATORY DATA ANALYSIS.

**exploratory drive** the motivation that compels an organism to examine its environment. The exploratory drive may be secondary to other drives, such as fear or hunger leading to exploration. Alternatively, EXPLORATORY BEHAVIOR may be a separate and independent drive. Also called **exploration drive**. See also CURIOSITY.

**exploratory factor analysis (EFA)** a method for finding a small set of underlying dimensions from a large set of related measures. The observed data are freely explored in order to discover the underlying (latent) variables that explain the interrelationships among a larger set of observable (manifest) variables. For example, exploratory factor analysis has been conducted to assess whether there are one, two, or more dimensions underlying items used to assess intelligence. The analysis does not yield a unique solution: Although points are fixed in a multidimensional space of underlying factors, the axes according to which one should interpret the factors are not fixed and are infinite in number. These axes may be either ORTHOGONAL (producing uncorrelated factors) or OBLIQUE (producing correlated factors). Compare CONFIRMATORY FACTOR ANALYSIS.

**exploratory procedure 1.** a surgical procedure used to diagnose disease when less invasive methods are inconclusive. **2.** a method used by people for feeling the surfaces of objects. People tend to modify their use of touch to optimize the acquisition of information. Thus, they may push on a surface to judge its hardness or stroke it with the index finger to perceive texture. [described in 1987 by Canadian psychologist Susan J. Lederman and U.S. psychologist Roberta L. Klatzky (1947– )]

**exploratory research** a study that is conducted when not much is known about a particular phenomenon. In exploratory research, one typically seeks to identify multiple possible links between variables. In contrast, in CONFIRMATORY RESEARCH, one tests whether a specific prediction holds under specific circumstances.

**explosive disorder** see INTERMITTENT EXPLOSIVE DISORDER; ISOLATED EXPLOSIVE DISORDER.

**explosive personality** a personality with a pattern of

frequent outbursts of uncontrolled anger and hostility out of proportion to any provocation. See INTERMITTENT EXPLOSIVE DISORDER.

**exponent** *n.* a number shown as a superscript of another number to indicate how many times the base number is to be multiplied by itself. For example, the base number 2 with an exponent of 3 (i.e.,  $2^3$ ) denotes the number formed by multiplying 2 by itself three times (i.e.,  $2 \times 2 \times 2 = 8$ ).

**exponential curve** a graph of a rapidly growing FUNCTION in which the increase is proportional to the size of an *x* variable and the SLOPE is equal to the value of the *y* variable.

**exponential distribution** a theoretical arrangement of survival times, used in parametric SURVIVAL ANALYSIS when the hazard rate is thought to be constant over time. It is a specific type of GAMMA DISTRIBUTION.

**exponential function (exp)** a mathematical expression of the type  $y = a^x$ , where *a* is a constant. A particular type has the form  $y = e^x$ , where *e* is a fundamental mathematical constant that is the base of natural logarithms (with the value 2.718 . . .). Often, functions of this type (e.g.,  $e^{x+a}$ ) are written as  $\exp(x + a)$ .

**ex post facto design** research that examines past occurrences in order to understand a current state. Although this type of design involves both a DEPENDENT VARIABLE and an INDEPENDENT VARIABLE, the investigator cannot manipulate the latter. For example, a researcher who is interested in determining the effectiveness of a particular television advertisement on consumer behavior may recruit a group of participants who saw the advertisement and a group of participants who did not, yet the researcher has no control over which specific people actually viewed the advertisement. Also called **ex post facto study**. [from Latin *ex post facto*, "after the event"]

**ex post facto evaluation** see SUMMATIVE EVALUATION.

**exposure and response prevention (ERP; EX/RP)** an intensive form of BEHAVIOR THERAPY for OBSESSIVE-COMPULSIVE DISORDER, involving exposure to situations or cues that trigger recurrent, intrusive, and distressing thoughts (obsessions) or provoke repetitive behaviors (compulsions), followed by abstinence from the compulsive behavior. Typically, exposures are conducted in a graduated fashion, with moderately distressing situations confronted before more upsetting ones. For example, for a person who fears contact with dirt and germs and repeatedly washes throughout the day, ERP might involve the therapist asking the client first to touch doorknobs and then a well-traveled floor, then to sit on a public toilet seat, and so forth without engaging in compulsive cleaning behavior. An alternative method is FLOODING, in which therapy is started with the most feared situation. Regardless of the approach taken, the exposure exercises are performed multiple times until the client's emotional responses no longer occur or are greatly diminished. Therapists conducting ERP do not, however, actually prevent clients from engaging in compulsive rituals. Instead, they encourage the client to remain in the fear-evoking situation until the urge to perform a ritual decreases noticeably. Empirically demonstrated to be highly effective, ERP is the most commonly used treatment for obsessive-compulsive disorder and has been extended to other conditions as well (e.g., phobias). Also called **exposure and ritual prevention; response prevention**.

**exposure deafness** loss of hearing due to prolonged exposure to loud sounds. The condition may be temporary or

permanent, depending upon the loudness, length of exposure, and sound frequencies. See also AUDITORY FATIGUE.

**exposure therapy** a form of BEHAVIOR THERAPY that is effective in treating anxiety disorders. It involves systematic and repeated confrontation with a feared stimulus, either in vivo (live) or in the imagination, and may encompass any of a number of behavioral interventions, including DESENSITIZATION, FLOODING, IMPLOSIVE THERAPY, and extinction-based techniques. It works by (a) HABITUATION, in which repeated exposure reduces anxiety over time by a process of EXTINCTION; (b) disconfirming fearful predictions; and (c) increasing feelings of self-efficacy and mastery.

**expressed emotion (EE)** negative attitudes, in the form of criticism, hostility, and emotional overinvolvement, demonstrated by family members toward a person with a mental disorder. High levels of expressed emotion have been shown to be associated with poorer outcomes in mood, anxiety, and schizophrenic disorders and an increased likelihood of relapse. [first described in 1972 by British psychiatrists George W. Brown (1930– ), James L. T. Birley, and John K. Wing]

**expression** *n.* an external manifestation of an internal condition or characteristic. For example, **gene expression** is the process by which the instructions encoded in DNA are used to create observable products, such as proteins (and by extension demonstrable physical attributes, such as hair or eye color). The term, however, is most often used in reference to the communication of a thought, behavior, or emotion, as in EMOTIONAL EXPRESSION or FACIAL EXPRESSION.

**expressionism factor** in psychological aesthetics, a dimension of artistic style that emphasizes the artist's emotional experience, especially where this is powerful or intense. According to Daniel E. BERLYNE, the expressionism factor is based on stylistic ratings that are high on such scales as tense–tranquil.

**expressive amimia** see AMIMIA.

**expressive amusia** see AMUSIA.

**expressive aphasia** see APHASIA; BROCA'S APHASIA.

**expressive language** the language produced by a speaker or writer, as opposed to that received by a listener or reader (see RECEPTIVE LANGUAGE). Also called **productive language**.

**expressive language disorder** a developmental disorder, classified in the DSM-IV-TR as a COMMUNICATION DISORDER, that is characterized by impairment in acquiring the ability to use language effectively for communicating with others despite normal language comprehension. Manifestations include below-average vocabulary skills, difficulty producing complete sentences, and problems recalling words.

**expressive suppression** see RESPONSE-FOCUSED EMOTION REGULATION.

**expressive therapy** **1.** a form of psychotherapy in which the client is encouraged to talk through problems and to express feelings openly and without restraint. Compare SUPPRESSIVE THERAPY. **2.** any of a variety of therapies that rely on nonverbal methods (e.g., art, dance, movement) to facilitate change.

**EX/RP** abbreviation for EXPOSURE AND RESPONSE PREVENTION.

**extended care** a service provided at a residential facility where 24-hour nursing care and rehabilitation therapy are available, usually following an acute hospitalization. A facility that provides such a service is known as an **extended care facility (ECF)**. See also CONTINUING CARE UNIT; SKILLED NURSING FACILITY.

**extended Cox regression model** see COX REGRESSION ANALYSIS.

**extended family** **1.** a family unit consisting of parents and children living in one household with other individuals united by kinship (e.g., grandparents, cousins). **2.** in modern Western societies, the NUCLEAR FAMILY together with various other relatives who live nearby and keep in regular touch. **3.** most generally, any family members beyond the nuclear family (e.g., grandparents, cousins, aunts, uncles). Also called **consanguineous family**.

**extended-family therapy** GROUP THERAPY involving not only the nuclear family but also other family members, such as aunts, uncles, grandparents, and cousins.

**extended-release preparation** see SLOW-RELEASE PREPARATION.

**extended-stay review** a review of a continuous hospital stay that has equaled or exceeded the period defined by a hospital or third-party UTILIZATION REVIEW. See also CONTINUED-STAY REVIEW.

**extended suicide** MURDER–SUICIDE in which both the murder and the suicide reflect the suicidal process. The individual first kills those perceived as being a part of his or her identity or extended self and then commits suicide.

**extension** *n.* the straightening of a joint in a limb (e.g., the elbow joint) so that two parts of the limb (e.g., the forearm and upper arm) are drawn away from each other.

**extensional meaning** the meaning of a word or phrase as established by a list of the individual instances to which it applies. For example, the extensional meaning of *cardinal points of the compass* is “north, south, east, and west.” Compare INTENSIONAL MEANING.

**extension reflex** any reflex action that causes a limb or part of a limb to move away from the body. Extension reflexes include the EXTENSOR THRUST, STRETCH REFLEXES, and CROSSED-EXTENSION REFLEXES. Compare FLEXION REFLEX.

**extensor** *n.* a muscle whose contraction extends a part of the body; for example, the triceps muscle group extends, or straightens, the arm. Compare FLEXOR.

**extensor motor neuron** a MOTOR NEURON whose fibers connect with EXTENSOR muscles that extend a part of the body by contracting.

**extensor posturing** see DECEREBRATE RIGIDITY.

**extensor rigidity** rigid contractions of EXTENSOR muscles. The kind of rigidity sometimes indicates the site of the motor neuron lesion associated with the disorder. Injury to the cerebellum produces increased tone of extensor muscles, called **cerebellar rigidity**. See also DECEREBRATE RIGIDITY.

**extensor thrust** a reflex extension of the leg caused by applying a stimulus to the sole of the foot. The reflex normally occurs each time a person takes a step in walking or running, signaling a need for body support and providing the thrust for taking the next step. See also STRETCH REFLEX.

**exteriorization** *n.* **1.** the act of relating one’s inner feel-

ings and attitudes to external, objective reality. **2.** the outward expression of one’s private and personal ideas.

**external aim** see OBJECT OF INSTINCT.

**external attribution** see SITUATIONAL ATTRIBUTION.

**external auditory meatus** the canal that conducts sound through the external ear, from the pinna to the tympanic membrane (eardrum). Also called **auditory canal**; **ear canal**.

**external boundary** in psychoanalytic theory, the boundary between the EGO and external reality, as opposed to the INTERNAL BOUNDARY between the ego and ID.

**external capsule** a thin layer of myelinated nerve fibers separating the CLAUSTRUM from the PUTAMEN. See also EXTREME CAPSULE; INTERNAL CAPSULE.

**external chemical messenger (ECM)** an ODORANT or other substance that is secreted or released by an organism and influences other organisms. PHEROMONES are examples.

**external control** see LOCUS OF CONTROL.

**external ear** the part of the ear consisting of the PINNA, the EXTERNAL AUDITORY MEATUS, and the outer surface of the eardrum (see TYMPANIC MEMBRANE). Also called **outer ear**.

**external evaluator** an individual conducting a PROGRAM EVALUATION who is not a regular full-time employee of the program being evaluated. Such an evaluation is considered more objective and potentially less biased than one produced by an INTERNAL EVALUATOR. External agents are often preferred for SUMMATIVE EVALUATIONS, with possible highly visible consequences, to ensure the validity and credibility of the results.

**external fertilization** see FERTILIZATION.

**external genitalia** see GENITALIA.

**external granular layer** see CORTICAL LAYERS.

**external inequity** the situation in which employers compensate employees at levels that are unfair in relation to the levels of compensation they would receive from other comparable employers. Compare INTERNAL INEQUITY. See EQUITY THEORY.

**externality effect** the tendency of very young infants to direct their attention primarily to the outside of a figure and to spend little time inspecting internal features. The externality effect appears to diminish after the age of 1 month. [initially described in 1979 by I. W. R. Bushnell]

**externalization** *n.* **1.** a DEFENSE MECHANISM in which one’s thoughts, feelings, or perceptions are attributed to the external world and perceived as independent of oneself or one’s own experiences. A common expression of this is PROJECTION. **2.** the process of learning to distinguish between the self and the environment during childhood. **3.** the process by which a drive, such as hunger, is aroused by external stimuli, such as food, rather than by internal stimuli.

**externalizing–internalizing** a broad classification of children’s behaviors and disorders based on their reactions to stressors. Externalizing behaviors and disorders are characterized primarily by actions in the external world, such as acting out, antisocial behavior, hostility, and aggression. Internalizing behaviors and disorders are characterized primarily by processes within the self, such as

anxiety, SOMATIZATION, and depression. See also CHILD BEHAVIOR CHECKLIST. [proposed by U.S. psychologist Thomas M. Achenbach (1940– )]

**external locus of control** see LOCUS OF CONTROL.

**external pyramidal layer** see CORTICAL LAYERS.

**external rectus** see LATERAL RECTUS.

**external reliability** the extent to which a measure is consistent when assessed over time or across different individuals. External reliability calculated across time is referred to more specifically as RETEST RELIABILITY; external reliability calculated across individuals is referred to more specifically as INTERRATER RELIABILITY.

**external respiration** see RESPIRATION.

**external validity** the extent to which the results of research or testing can be generalized beyond the sample that generated them. For example, if research has been conducted only with male participants, it cannot be assumed that similar results will apply to female participants. The more specialized the sample, the less likely will it be that the results are highly generalizable to other individuals, situations, and time periods. Compare INTERNAL VALIDITY.

**external world** the world of real existing things external to and independent of human consciousness. The question of how one can have knowledge of such a world, or even be sure that such a world exists, has been fundamental to philosophy since the time of René DESCARTES. See ABSOLUTE REALITY; OBJECTIVE REALITY. See also CARTESIAN SELF; EGOCENTRIC PREDICAMENT; SOLIPISM.

**exteroception** *n.* sensitivity to stimuli that are outside the body, resulting from the response of specialized sensory cells called **exteroceptors** to objects and occurrences in the external environment. Exteroception includes the five senses of sight, smell, hearing, touch, and taste, and exteroceptors thus take a variety of forms (e.g., photoreceptors—retinal rods and cones—for sight; cutaneous receptors—Pacinian corpuscles, Meissner's corpuscles, Merkel's tactile disks—for touch). Compare INTEROCEPTION. —**exteroceptive** *adj.*

**exteroceptive stimulus** a stimulus that arises in the external world and is sensed by an organism through any of the five senses of sight, smell, hearing, touch, and taste. Compare INTEROCEPTIVE STIMULUS; PROPRIOCEPTIVE STIMULUS.

**exteroceptor** *n.* see EXTEROCEPTION.

**extinction** *n.* **1.** in biology, the loss of a species or subspecies either completely or within a particular environment. For example, the passenger pigeon is globally extinct, and condors and whooping cranes were extinct in many places where previously they had been found but have been reintroduced after successful captive breeding. **2.** see PERCEPTUAL EXTINCTION. **3.** in CLASSICAL CONDITIONING, (a) a procedure in which PAIRING of stimulus events is discontinued, either by presenting the CONDITIONED STIMULUS alone or by presenting the conditioned stimulus and the UNCONDITIONED STIMULUS independently of one another; or (b) the result of this procedure, which is a gradual decline in the probability and magnitude of the CONDITIONED RESPONSE. **4.** in OPERANT CONDITIONING, (a) a procedure in which reinforcement is discontinued, that is, the reinforcing stimulus is no longer presented; or (b) the result of this procedure, which is a decline in the rate of the formerly reinforced response. —**extinguish** *vb.*

**extinction burst** see BURST.

**extirpation** *n.* see ABLATION.

**extra-** (**extr-**) *prefix* outside of or beyond (e.g., EXTRASENSORY PERCEPTION).

**extracellular space** the fluid-filled space in an organism that lies outside the plasma membrane of cells.

**extradural hemorrhage** bleeding that occurs outside the dura mater, the outermost of the three protective membranes (meninges) that cover the brain. It usually involves a ruptured artery resulting from a severe head injury, such as a skull fracture. There may be a brief lucid period after the injury, then severe headaches, dizziness, confusion, loss of consciousness, and finally death if the hemorrhage is not controlled. Also called **epidural hemorrhage**.

**extrafusar fiber** any of the muscle fibers that lie outside MUSCLE SPINDLES and provide most of the force for muscle contraction. Compare INTRAFUSAL FIBER.

**extraneous variable** a measure that is not under investigation in an experiment but may potentially affect the outcome or DEPENDENT VARIABLE and thus may influence results. Such potential influence often requires that an extraneous variable be controlled during research. See also CONFOUND.

**extrapair mating** in socially monogamous species, mating that occurs with individuals other than the mate. In many monogamous bird species, genetic evidence of paternity suggests extensive extrapair mating, with the result that many chicks are not sired by the male that cares for them. Extrapair mating might also occur at times when conception is not possible, either to test other potential mates or to strengthen social relationships with others. See also CUCKOLDRY.

**extrapolation** *n.* the process of estimating or projecting unknown score values on the basis of the known scores obtained from a given sample. For example, a researcher might estimate how well students will do on an achievement test on the basis of their current performance, or estimate how well a similar group of students might perform on the same achievement test.

**extrapsychic** *adj.* pertaining to that which originates outside the mind or that which occurs between the mind and the environment. Compare INTRAPSYCHIC.

**extrapsychic conflict** conflict arising between the individual and the environment, as contrasted with INTRAPSYCHIC CONFLICT.

**extrapunitive** *adj.* referring to the punishment of others: tending to direct anger, blame, or hostility away from the self toward the external factors, such as situations and other people, perceived to be the source of one's frustrations. Compare INTROPUNITIVE.

**extrapyramidal dyskinesia** any of various distortions of voluntary movement (DYSKINESIAS), such as tremors, spasms, tics, rigidity, or gait disturbances, associated with some lesion of the EXTRAPYRAMIDAL TRACT. These dyskinesias can occur in neurological disorders or as a side effect of antipsychotic drugs, which produce such conditions as AKATHISIA, ACUTE DYSTONIA, and TARDIVE DYSKINESIA.

**extrapyramidal symptoms (EPS)** a group of adverse drug reactions attributable to dysfunction of the EXTRAPYRAMIDAL TRACT, such as rigidity of the limbs, tremor, and

other Parkinson-like signs; dystonia (abnormal facial and body movements); and akathisia (restlessness). Extrapyramidal symptoms are among the most common side effects of the HIGH-POTENCY ANTIPSYCHOTICS and have also been reported with use of other drugs (e.g., SSRIs). Also called **extrapyramidal syndrome (EPS)**.

**extrapyramidal tract** a motor portion of the central nervous system that includes the BASAL GANGLIA and some closely related structures (e.g., the SUBTHALAMIC NUCLEUS) and descending pathways to the midbrain. It regulates muscle tone and body posture and coordinates opposing sets of skeletal muscles and movement of their associated skeletal parts. Also called **extrapyramidal motor system**; **extrapyramidal system**.

**extrasensory perception (ESP)** alleged awareness of external events by other means than the known sensory channels. It includes TELEPATHY, CLAIRVOYANCE, and PRECOGNITION. Despite considerable research, the existence of any of these modalities remains highly controversial. Also called **paranormal cognition**. See PARAPSYCHOLOGY. [coined by German physician Gustav Pagenstecher (1855–1942) in his 1924 text, *Aussersinnlicher wahrnehmung (Extrasensory Perception)*; the English term was adopted in 1934 by Joseph B. RHINE]

**extraspective perspective** a methodological approach based on objective, empirical observation of actions and reactions, as contrasted with an introspective, first-person account of experience. The approach of BEHAVIORISM is based on an extraspective perspective.

**extraspectral hue** a hue composed of a mixture of wavelengths, and thus not falling along the visible spectrum (compare SPECTRAL COLOR). Two examples are purple and white: Purple is a mixture of long and short wavelengths, whereas white is a mixture of all wavelengths. Also called **nonspectral hue**.

**extrastriate cortex** see PRESTRIATE CORTEX.

**extrastriate visual area** any of the visually responsive regions of cerebral cortex that are located outside the primary visual cortex (striate cortex), that is, in the PRESTRIATE CORTEX. Extrastriate visual areas include V2, V3, V4, and V5.

**extraterrestrial kidnapping** see ALIEN ABDUCTION.

**extrauterine pregnancy** see ECTOPIC PREGNANCY.

**extraversion (extroversion)** *n.* one of the elements of the BIG FIVE and FIVE-FACTOR PERSONALITY MODELS, characterized by an orientation of one's interests and energies toward the outer world of people and things rather than the inner world of subjective experience. Extraversion is a broad personality trait and, like INTROVERSION, exists on a continuum of attitudes and behaviors. Extraverts are relatively outgoing, gregarious, sociable, and openly expressive. Extraversion is also one of the three personality dimensions in EYSENCK'S DIMENSIONS. —**extraversive** *adj.* —**extraverted** *adj.* —**extravert** *n.*

**extreme capsule (EmC)** a long fiber pathway of white matter that connects the inferior frontal region and superior temporal gyrus with the inferior parietal lobe. The anatomical association with regions that regulate speech (BROCA'S AREA in the frontal region and WERNICKE'S AREA in the inferior parietal and temporal lobes) indicates that the extreme capsule may convey language information. See also EXTERNAL CAPSULE; INTERNAL CAPSULE.

**extreme environments** extreme living conditions (e.g., space habitats, polar regions, offshore oil platforms) as they affect human health and well-being. Salient issues in the analysis of extreme environments include PRIVACY, CROWDING, social support, and levels of stimulation.

**extremely low birth weight (ELBW)** see LOW BIRTH WEIGHT.

**extremity of an attitude** the extent to which a person's evaluation of an ATTITUDE OBJECT deviates from neutrality. Extremity is related to ATTITUDE STRENGTH.

**extrinsic eye muscles** see EYE MUSCLES.

**extrinsic motivation** an external incentive to engage in a specific activity, especially motivation arising from the expectation of punishment or reward (e.g., completing a disliked chore in exchange for payment). Compare INTRINSIC MOTIVATION.

**extrinsic reinforcement** provision of a reward for performing an action, such as giving a child candy for reading. The reward itself is called an **extrinsic reinforcer**. Some evidence suggests that extrinsic reinforcement decreases later involvement in the action unless the reward is given only to induce interest. Compare INTRINSIC REINFORCEMENT.

**extrinsic religion** a religious orientation in which RELIGIOSITY is largely a means to other ends, such as social morality or individual well-being, rather than an end in itself. Compare INTRINSIC RELIGION. [introduced by Gordon W. ALLPORT]

**extrinsic reward** a reward for behavior that is not a natural consequence of that behavior. For example, winning a trophy for finishing first in a race and receiving praise or money in the work setting are extrinsic rewards. Compare INTRINSIC REWARD.

**extroversion** *n.* see EXTRAVERSION.

**ex vivo** referring to procedures taking place outside of a living organism. For example, during surgery an organ may be removed, treated *ex vivo*, and returned to the body. *Ex vivo* research uses living cells or tissue in a laboratory setting soon after their removal from the organism. These *ex vivo* cells or tissue are not necessarily cultured, as in *IN VITRO* experiments. Compare *IN VIVO*. [Latin, literally: "out of life"]

**eye** *n.* the organ of sight. The human eye is a layered, globular structure whose shape is maintained by fluid filling its interior. There are three layers: (a) the outer corneal coat, which includes the transparent CORNEA in front and continues as the fibrous SCLERA over the rest of the globe; (b) the middle layer, called the **uveal tract**, which includes the IRIS, the CILIARY BODY, and the CHOROID LAYER; and (c) the innermost layer, the RETINA, which is sensitive to light. RETINAL GANGLION CELLS within the retina communicate with the central nervous system through the OPTIC NERVE, which leaves the retina at the OPTIC DISK. The eye has three chambers. The **anterior chamber**, between the cornea and the iris, and the **posterior chamber**, between the ciliary body, LENS, and posterior aspect of the iris, are filled with a watery fluid, the AQUEOUS HUMOR. The anterior and posterior chambers are in continuity through the PUPIL. The third chamber, the **vitreous body**, is the large cavity between the lens and the retina filled with VITREOUS HUMOR. See also EYE MUSCLES; VISUAL SYSTEM.

**eye bank** a repository for corneas or other parts of the



human eye to be used for surgical transplantation in medical and immunologically appropriate recipients.

**eye contact** a direct look exchanged between two people who are interacting. Maintaining eye contact is considered essential to communication between therapist and client during face-to-face interviews. Social psychological studies of eye contact generally find that people look more at the other person when listening to that person than when they themselves are talking; that people tend to avoid eye contact when they are embarrassed; and that the more intimate the relationship, the greater the eye contact. Also called **mutual gaze**.

**eye dominance** a preference for using one eye rather than the other. Preference is often for the right eye and is caused mainly by the differential acuity of the two eyes.

**eye-hand coordination** the integration of visual information-processing skills and appropriate motor responses of the hands in grasping and exploring objects and performing specific tasks. By 6 months of age, most infants can grasp an object within reach, although full use of the thumb develops later, between 8 and 12 months.

**eyelash sign** a reaction of eyelid movement to the stimulus of stroking the eyelashes. It can be used as part of a diagnostic test for LOSS OF CONSCIOUSNESS due to a functional or psychogenic disorder. If the loss of consciousness is due to a neurological disease or injury, the reflex will not occur.

**eyelid conditioning** a procedure for studying CLASSICAL CONDITIONING in which the UNCONDITIONED STIMULUS (usually an electrical stimulus or a puff of air) elicits an eyeblink.

**eye-movement camera** a device that video-records eye movements to study rapid foveal fixations during perceptual, cognitive, or social information processing. See also EYE TRACKER.

**eye-movement desensitization and reprocessing (EMDR)** a treatment methodology used to reduce the emotional impact of trauma-based symptoms such as anxiety, nightmares, flashbacks, or intrusive thought processes. The client incorporates simultaneous visualization of the traumatic event while concentrating on the rapid lateral movements of a therapist's finger. [developed in the late 1980s by U.S. psychologist Francine Shapiro]

**eye movements** movements of the eyes caused by contraction of the extrinsic eye muscles. These include movements that allow or maintain the fixation of stationary targets; SMOOTH-PURSUIT EYE MOVEMENTS; VERGENCE movements; saccadic movements (see SACCADE), and reflexive movements of the eyes, such as the OPTOKINETIC REFLEX and VESTIBULO-OCULAR REFLEX.

**eye muscles 1. (extrinsic eye muscles)** the muscles that move the eye within the eye socket. There are three

pairs: (a) the SUPERIOR RECTUS and INFERIOR RECTUS, (b) the LATERAL RECTUS and MEDIAL RECTUS, and (c) the SUPERIOR OBLIQUE and INFERIOR OBLIQUE. **2. (intrinsic eye muscles)** the muscles that move structures within the eye itself. They include the CILIARY MUSCLES, which alter the shape of the lens during ACCOMMODATION, and the muscles of the iris, which change the size of the pupil.

**eye preference** see DOMINANT EYE; EYE DOMINANCE.

**eye-roll sign** the tendency of the eyes to roll upward in their sockets during the onset of sleep; the eye roll can also occur when people close their eyes during hypnotic induction. It has been proposed that the degree of eye roll is an index of hypnotic suggestibility, though whether the eye roll is a correlate to or plays a causal role in suggestibility is unknown.

**eye span** see READING SPAN.

**eye structure** see EYE.

**eye tracker** a device that measures the successive targets of an individual's visual fixations as he or she observes displays. See also EYE-MOVEMENT CAMERA.

**eye-voice span** in oral reading, the distance in terms of characters between the word being spoken and the word the eye is focused on. See also READING SPAN.

**eyewitness memory** an individual's recollection of an event, often a crime or accident of some kind, that he or she personally saw or experienced. The reliability of eyewitness memory is a major issue in FORENSIC PSYCHOLOGY, given the existence of such phenomena as the MISINFORMATION EFFECT and WEAPON-FOCUS EFFECT.

**eyewitness testimony** evidence given under oath in a court of law by an individual who claims to have witnessed the facts under dispute.

**EYM Project** abbreviation for EARLY YEARS OF MARRIAGE PROJECT.

**Eysenck Personality Inventory (EPI)** a self-report personality test for use with adolescents and adults. It originally comprised 57 yes-no questions designed to measure two of EYSENCK'S DIMENSIONS—extraversion and neuroticism—and included a Lie scale intended to detect response distortion. The EPI was revised and expanded following its initial publication in 1963 to become the **Eysenck Personality Questionnaire (EPQ)**, the most recent version of which (the **EPQ-R**) includes 90 questions and measures the additional personality dimension of psychoticism. [Hans EYSENCK and British psychologist Sybil B. G. **Eysenck**]

**Eysenck's dimensions** a system for classifying personality types in which individual differences are described according to three dimensions: PSYCHOTICISM, EXTRAVERSION, and NEUROTICISM (referred to as **PEN**). See also FACTOR THEORY OF PERSONALITY. [Hans EYSENCK]

# Ff

**f** in mathematics, symbol for FUNCTION.

**f** **1.** in an ANALYSIS OF VARIANCE or an ANALYSIS OF COVARIANCE, an EFFECT SIZE index that represents the STANDARD DEVIATION of a set of group means divided by the average standard deviation of scores across the set of groups. Its value ranges from 0 to 1, with small, medium, and large effect size values suggested as .10, .25, and .40, respectively. **2.** in a table or distribution, symbol for FREQUENCY. **3.** in vision science, symbol for FOCAL LENGTH.

**F** symbol for F RATIO.

**F1** abbreviation for first FILIAL GENERATION.

**F2** abbreviation for second FILIAL GENERATION.

**FA** abbreviation for FACTOR ANALYSIS.

**FAAH** abbreviation for fatty acid amide hydrolase. See ENDOGENOUS CANNABINOID.

**FABBS** abbreviation for FEDERATION OF ASSOCIATIONS IN BRAIN AND BEHAVIORAL SCIENCES.

**fabrication** *n.* **1.** the act of concocting or inventing a whole or part of a story, often with the intention to deceive. **2.** a story concocted in this way.

**fabulation** *n.* random speech that includes the recounting of imaginary incidents by a person who believes these incidents are real. See also DELUSION. [first described by Adolf MEYER]

**face-hand test** a test of tactile extinction (see DOUBLE-SIMULTANEOUS TACTILE SENSATION) in which the examiner touches the individual's face and the back of his or her hand at the same time.

**face-ism** *n.* the alleged tendency for advertisements and other visual media to represent men by their faces (symbolizing their intellectual nature) but women by their whole bodies (symbolizing their sensual nature). It is thus a form of SEXISM. —**face-ist** *adj.*

**face perception** neurocognitive processes involved in the recognition of individual faces and the interpretation of FACIAL EXPRESSION. Face perception is an early and highly developed human social skill. See also FACIAL ACTION CODING SYSTEM.

**face recognition** the identification of a specific face. A specialized face-recognition region in the temporal lobe has been demonstrated by brain imaging; injury to this region results in such deficits as PROSOPAGNOSIA, a failure to recognize previously familiar faces.

**face saving** an act in which one attempts to uphold one's dignity, as by redressing a social blunder or compensating for a poor impression one has made. Face-saving behavior is an aspect of IMPRESSION MANAGEMENT. See also FACEWORK.

**face-to-face group** any group whose members are in personal contact and, as a result, are able to perceive each other's needs and responses and carry on direct interaction. Examples include T-GROUPS and psychotherapy groups. Also called **direct-contact group**.

**face-to-face interaction** a direct encounter between

two or more individuals, as opposed to one involving communication by writing, telephone, or some other medium or intercession by third parties.

**face validity** the apparent soundness of a test or measure. The face validity of an instrument is the extent to which the items or content of the test appear to be appropriate for measuring something, regardless of whether they actually are. A test with face validity, however, may lack EMPIRICAL VALIDITY.

**facework** *n.* **1.** in social interactions, a set of strategic behaviors by which people attempt to maintain both their own dignity ("face") and that of the people with whom they are dealing. Facework strategies include politeness, deference, tact, avoidance of difficult subjects, and the use of half-truths and "white lies." The conventions governing facework differ widely between cultures. **2.** formal face-to-face interactions between people engaged in business, politics, diplomacy, and other goal-directed activities. Such interactions may involve a certain amount of small talk and personal conversation as well as discussion of the official agenda.

**Facial Action Coding System (FACS)** a coding system for classifying facial expressions in terms of the movements of particular facial muscles, such as the orbicularis oculi (the muscle encircling each eye) and the zygomaticus major (the muscle pulling the corners of the lips upward). Elaborations of this system have been used in attempts to identify the emotional state of a person. True happiness, for example, is said to be indicated by contraction of the orbicularis oculi muscle, which is not under conscious control. Compare MAXIMALLY DISCRIMINATIVE FACIAL MOVEMENT CODING SYSTEM. See also DUCHENNE SMILE; FACIAL EXPRESSION. [first published in 1978 by U.S. psychologists Paul Ekman (1934– ) and Wallace V. Friesen (1933– )]

**facial affect program** a hypothetical set of central nervous system structures that accounts for the patterning of universal, basic facial expressions of emotion in humans. Such a program could provide the link between a specific emotion and a given pattern of facial muscular activity.

**facial angle** any of various angles that quantify facial protrusion, established by using a set of craniometric reference points, such as the juncture of the frontal and nasal bones, the foremost projection point of the chin, and the horizontal eye-ear plane.

**facial disfigurement** any distortion, malformation, or abnormality of facial features due to injury, disease, or congenital anomaly. Because of a common tendency to assign traits to individuals on the basis of their facial features, people with facial disfigurements are particularly vulnerable to social, psychological, and economic discrimination and unfavorable stress effects.

**facial electromyography** a technique for measuring the endogenous electrical activity of any muscle or muscle group in the face by the appropriate placement of electrodes (see ELECTROMYOGRAPHY). This procedure is usually carried out to detect subtle facial movements related to emotion or speech.

**facial expression** a form of nonverbal signaling using the movement of facial muscles. An integral part of communication, facial expression also reflects an individual's emotional state. Charles DARWIN suggested that facial expressions are innate reactions that possess specific survival value; for example, a baby's smile evokes nurturing responses in parents. Although controversial, this theory has been supported by cross-cultural research, which indicates that certain facial expressions are spontaneous and universally correlated with such primary emotions as surprise, fear, anger, sadness, and happiness. DISPLAY RULES, however, can modify or even inhibit these expressions, as can physical conditions such as parkinsonism, which produces an expressionless, masklike countenance.

**facial feedback hypothesis** the hypothesis that sensory information provided to the brain from facial muscle movements is a major determinant of intrapsychic feeling states, such as fear, anger, joy, contempt, and so on. This idea was introduced by Charles DARWIN and developed by Silvan S. TOMKINS and Carroll E. IZARD.

**facial muscle** any one of the numerous muscles in the human face that control not only functional movements (e.g., biting, chewing) but also a variety of facial expressions.

**facial nerve** the seventh CRANIAL NERVE, which innervates facial musculature and some sensory receptors, including those of the external ear and the tongue. Also called **cranial nerve VII**. See GREATER SUPERFICIAL PETROSAL NERVE.

**-facient** suffix making or causing.

**facies** *n.* facial characteristics, particularly those of an unusual nature or associated with a medical condition (e.g., Williams syndrome, parkinsonism). [Latin, "face"]

**facilitated communication** **1.** communication that is made more effective or efficient (e.g., easier to understand, faster), often with the aid of a technological device or process. Examples include the captioning of TV broadcasts for the benefit of viewers with hearing loss (see CLOSED-CAPTIONED TELEVISION) and the use of SPEECH SYNTHESIZERS by people who are unable to talk. See also AUGMENTATIVE COMMUNICATION. **2.** a controversial method of communication in which a person with a severe developmental disability (e.g., AUTISM) is assisted by a **facilitator** in typing letters, words, phrases, or sentences on a keyboard. Facilitated communication involves a graduated manual prompting procedure, with the intent of supporting a person's hand sufficiently to make it more feasible to strike the keys he or she wishes to strike, without influencing the key selection. The procedure is often claimed to produce unexpected literacy, revealed through age-normative or superior communication content, syntax, and fluency. Scientific research findings, however, indicate that the content of the communication is being determined by the facilitator via nonconscious movements. [developed in the 1970s by Australian educator Rosemary Crossley (1945– )]

**facilitation** *n.* **1.** the strengthening or increased occurrence of a response resulting from environmental support for the response. See also SOCIAL FACILITATION. **2.** in neuroscience, the phenomenon in which the threshold for propagation of the action potential of a neuron is lowered because of repeated signals at a synapse or the SUMMATION of subthreshold impulses. **3.** see OCCASION SETTING. —**facilitate** *vb.*

**facilitative anxiety** a level of anxiety that an individual (e.g., a musician, an athlete) perceives as assisting performance.

**facilitator** *n.* **1.** a professionally trained or lay member of a group who fulfills some or all of the functions of a group leader. The facilitator encourages discussion among all group members, without necessarily entering into the discussion. **2.** see FACILITATED COMMUNICATION.

**FACM** abbreviation for FUNCTIONAL ANALYTIC CAUSAL MODEL.

**FACS** acronym for FACIAL ACTION CODING SYSTEM.

**fact finder** see TRIER OF FACT.

**factitious disorder** in DSM-IV-TR, a disorder in which the patient intentionally produces or feigns physical or psychological symptoms solely so that he or she may assume the SICK ROLE. Physical symptoms may include pain, vomiting, blackouts, seizures, or infections (see MÜNCHAUSEN SYNDROME). Psychological symptoms may include depression, suicidal thoughts following the (unconfirmed) death of a spouse, hallucinations, or delusions. DSM-5 defines the disorder similarly but divides it into two subtypes characterized by (a) the falsification of symptoms or induction of injury or disease imposed on oneself, and (b) the same deceptions or harm imposed on others (e.g., a dependent). The latter is a proxy disorder that is synonymous with MÜNCHAUSEN SYNDROME BY PROXY. Compare MALINGERING.

**factitious disorder by proxy** see MÜNCHAUSEN SYNDROME BY PROXY.

**fact memory** memory for specific items of factual knowledge. Compare SOURCE MEMORY.

**factor** *n.* **1.** anything that contributes to a result or has a causal relationship to a phenomenon, event, or action. **2.** an underlying influence that accounts in part for variations in individual behavior. **3.** in ANALYSIS OF VARIANCE and other statistical procedures, an INDEPENDENT VARIABLE. **4.** in FACTOR ANALYSIS, an underlying, unobservable LATENT VARIABLE thought (together with other factors) to be responsible for the interrelations among a set of variables. **5.** in mathematics, a number that divides without remainder into another number.

**factor analysis (FA)** a broad family of mathematical procedures for reducing a set of interrelations among MANIFEST VARIABLES to a smaller set of unobserved LATENT VARIABLES or factors. For example, a number of tests of mechanical ability might be intercorrelated to enable factor analysis to reduce them to a few factors, such as fine motor coordination, speed, and attention. See CONFIRMATORY FACTOR ANALYSIS; EXPLORATORY FACTOR ANALYSIS; PRINCIPAL COMPONENTS ANALYSIS.

**factor-comparison method** a method of evaluating jobs for the purpose of setting wage or salary levels in which positions are compared to certain BENCHMARK JOBS in terms of COMPENSABLE JOB FACTORS. The factors usually include mental requirements, skill requirements, physical requirements, responsibility, and working conditions. Compare CLASSIFICATION METHOD; HAY METHOD; JOB-COMPONENT METHOD; POINT METHOD; RANKING METHOD. See JOB EVALUATION.

**factorial analysis of covariance** a statistical procedure to understand the effect on a DEPENDENT VARIABLE of two or more INDEPENDENT VARIABLES that are CATEGORICAL in nature, plus one or more additional correlated variables

that are QUANTITATIVE in nature. For example, a researcher may use a factorial analysis of covariance to understand reading performance by examining the effect of phoneme training (i.e., yes vs. no) and gender (male vs. female), after taking into account the intelligence scores of the research participants.

**factorial analysis of variance** a statistical procedure to understand the effect on a DEPENDENT VARIABLE that is QUANTITATIVE in nature of two or more INDEPENDENT VARIABLES that are CATEGORICAL in nature. For example, a health researcher may use a factorial analysis of variance to examine the effects of diet (e.g., high vs. low carbohydrates) and exercise (e.g., 3 hours per week vs. 1 hour per week) on weight.

**factorial design** an experimental study in which two or more CATEGORICAL VARIABLES are simultaneously manipulated or observed in order to study their joint influence (INTERACTION EFFECT) and separate influences (MAIN EFFECTS) on a separate DEPENDENT VARIABLE. For example, a researcher could use a factorial design to investigate treatment type (e.g., new exercise procedure vs. traditional procedure) and age (< 40 vs. > 40). The primary advantages of factorial designs are that they allow for the evaluation of interrelationships and that they are more efficient than conducting multiple studies with one variable at a time. See also FRACTIONAL FACTORIAL DESIGN; TWO-BY-TWO FACTORIAL DESIGN.

**factorial invariance** the situation in which the pattern of FACTOR LOADINGS on a LATENT VARIABLE in a FACTOR ANALYSIS remains identical from sample to sample. For example, if the same factor loading values were obtained for a measure of general intelligence whether a researcher tested men or women, the general intelligence test would be said to demonstrate factorial invariance by gender. In other contexts, factorial invariance is referred to more broadly as MEASUREMENT INVARIANCE.

**factor loading** in FACTOR ANALYSIS, the correlation between a MANIFEST VARIABLE and a LATENT VARIABLE (factor). The factor loading reflects the degree to which a manifest variable is said to be “made up of” the factor being examined.

**factor method** any means by which LATENT VARIABLES (factors) are extracted or identified in FACTOR ANALYSIS. Widely used factor methods include PRINCIPAL COMPONENTS ANALYSIS, which seeks to find a set of LINEAR combinations called *components* that help explain the correlations among variables; and PRINCIPAL-AXIS FACTOR ANALYSIS, in which underlying dimensions or factors are sought to explain the correlations among variables after separating out COMMUNALITY and putting aside the ERROR VARIANCE in a set of variables.

**factor of similarity** see SIMILARITY.

**factor reflection** changing the signs of a set of FACTOR LOADINGS from positive to negative, or vice versa. For example, researchers studying a newly revised scale to measure a positive emotion such as happiness might use factor reflection to change a negative sign on the factor loadings for positive items as well as to change a positive sign for sadness items. The resulting pattern of loadings thus shows positively focused items as having a positive sign and sadness-focused items as having a negative sign, such that the entire scale could accurately be said to measure the positive state of happiness.

**factor rotation** in FACTOR ANALYSIS, the repositioning of LATENT VARIABLES (factors) to a new, more interpretable configuration by a set of mathematically specifiable TRANSFORMATIONS. Factors initially are extracted to meet a mathematical criterion of maximal variance explanation, which often does not result in a scientifically meaningful representation of the data. Indeed, for any one factor solution that fits the data to a specific degree, there will exist an infinite number of equally good mathematical solutions. Thus, rotation is required to obtain a solution that is both mathematically viable and logically sound. See OBLIQUE ROTATION; ORTHOGONAL ROTATION.

**factor score** an estimate of the quantitative value that an individual would have on a LATENT VARIABLE were it possible to measure this directly; the latent variable or factor is determined through FACTOR ANALYSIS.

**factor theory** in CLASSICAL TEST THEORY, the supposition that a set of correlated variables can be reduced to a smaller set of underlying dimensions or FACTORS. It follows that each person's observed score can be represented by a FACTOR LOADING times a factor plus ERROR VARIANCE.

**factor theory of intelligence** any of various theories postulating that intelligence consists of a number of LATENT VARIABLES (factors) that cannot be measured directly but whose existence is proposed on the basis of FACTOR ANALYSIS; it is the individual's ability in these factors that underpins his or her test scores. For example, a factor theory of intelligence might hold that underlying scores on the many different tests of intelligence are verbal and non-verbal factors.

**factor theory of personality** an approach to the discovery and measurement of personality components through FACTOR ANALYSIS. The components are identified primarily by a statistical study of the differences between people as revealed by tests covering various aspects of behavior. The factor-analytic method is central to such personality models as the BIG FIVE PERSONALITY MODEL, CATTELL'S PERSONALITY TRAIT THEORY, and EYSENCK'S DIMENSIONS.

**fact retrieval** the retrieval of a fact directly from long-term memory without using great mental effort.

**factual knowledge** knowledge of specific factual items of information, without memory of when each fact was learned. Factual knowledge is technically referred to as SEMANTIC KNOWLEDGE or generic knowledge.

**facultative polyandry** see POLYANDRY.

**faculty** *n.* **1.** generally, any intrinsic mental or physical power, such as reason, sight, or will. See also COGNITIVE FACULTY. **2.** the body of the teaching, research, and administrative staff of an educational institution.

**faculty psychology** any approach to psychological issues based on the idea that mental processes can be divided into separate specialized abilities or powers, which can be developed by mental exercises in the same way that muscles can be strengthened by physical exercises. Faculty psychology was formulated in the 18th century by Scottish philosophers Thomas Reid (1710–1796) and Dugald Stewart (1753–1828), who held that will, judgment, perception, conception, memory, and so forth could be explained simply by referring to their active powers; for example, individuals remember because they possess the faculty of memory.

**fad** *n.* an abrupt but short-lived change in the opinions, behaviors, or lifestyles of a large number of widely dispersed individuals. Preoccupations with new products, dances, television programs, and fashions can be considered fads when many people quickly embrace the trend but then lose interest just as rapidly. Fads often pertain to relatively trivial matters and thus disappear without leaving any lasting impact on society. Extremely irrational, expensive, or widespread fads are termed **crazes**.

**fading** *n.* in conditioning, the gradual changing of one stimulus to another, which is often used to transfer STIMULUS CONTROL. Stimuli can be faded out (gradually removed)—as in, for example, the gradual removal of extrinsic feedback so that an athlete becomes more dependent on sensory feedback while learning a skill—or faded in (gradually introduced).

**FAE** abbreviation for fetal alcohol effects (see FETAL ALCOHOL SYNDROME).

**fail-safe** *adj.* **1.** describing or relating to a feature by which the failure of a component or subsystem of a machine or work system results in automatic shutdown or switch to a safer mode of operation. This **fail-safe design** reduces the chance that an operator will be exposed to hazards related to the malfunction or that machinery will be damaged. Fail-safe designs do not, however, reduce the likelihood of an accident or failure. See also EXCLUSION DESIGN; PREVENTION DESIGN. **2.** more generally, having no or an extremely low probability of failure.

**failure modes and effects analysis (FMEA)** a method of qualitative safety or ACCIDENT ANALYSIS in which the components of a system are listed along with the possible safety consequences that may occur should each of them fail or should the system as a whole go into failure mode.

**failure-to-inhibit hypothesis** a theory of COGNITIVE AGING that attributes attention and memory problems in older adults to their increasing inability to select relevant information and suppress irrelevant information when performing a cognitive task. [developed by U.S.-born Canadian psychologist Lynn Ann Hasher (1944– ) and U.S. psychologist Rose T. Zacks (1941– )]

**failure to thrive (FTT)** significantly inadequate gain in weight and height by an infant. It reflects a degree of growth failure due to inadequate release of GROWTH HORMONE and, despite an initial focus on parental neglect and emotional deprivation, is currently believed to have multifactorial etiology, including biological, nutritional, and environmental contributors. The condition is associated with poor long-term developmental, health, and socioemotional outcomes.

**fainting** *n.* see SYNCOPHE.

**faintness** *n.* **1.** absence of loudness, distinctness, or intensity, especially with reference to auditory stimuli. **2.** a sudden sensation of dizziness and weakness. See SYNCOPHE.

**Fairbairnian theory** the psychoanalytic concepts of British psychoanalyst W. Ronald D. Fairbairn (1889–1964), which form a part of OBJECT RELATIONS THEORY. Fairbairn saw personality structure developing in terms of object relationships rather than in terms of Sigmund FREUD's ID, EGO, and SUPEREGO. Fairbairn proposed the existence of an ego at birth, which then splits apart during the PARANOID-SCHIZOID POSITION to form the structures of personality. In response to frustrations and excitement ex-

perienced in the relationship with the mother, the infant's ego is split into (a) the central ego, which corresponds to Freud's concept of the ego; (b) the libidinal ego, which corresponds to the id; and (c) the ANTILIBIDINAL EGO, which corresponds to the superego.

**fairness** *n.* the equitable treatment of test takers in order to eliminate systematic variance in outcome scores among people with different racial or cultural experiences and other background influences. Fundamentally a sociocultural (rather than a technical) issue, fairness is a broad area encompassing quality management in test design, administration, and scoring; adequate coverage of relevant content; sufficient work to establish CONSTRUCT VALIDITY; equal learning opportunities and access to testing; and items measuring only the skill or ability under investigation without being unduly influenced by construct-irrelevant variance introduced through test-taker background factors. See also CULTURE-FAIR TEST.

**faith** *n.* unwavering loyalty, belief, and trust. See also RELIGIOUS FAITH. —**faithful** *adj.*

**faithful participant** a research participant who cooperates fully with the explicit and implicit wishes of the experimenter. Also called **faithful subject**.

**faith healing** **1.** the treatment of physical or psychological illness by means of religious practices, such as prayer or "laying on of hands." Adherents hold that this may be effective even when those being prayed for have no knowledge of the fact and no belief in the process themselves. Also called **faith cure**; **religious healing**; **spiritual healing**. **2.** any form of unorthodox medical treatment whose efficacy is said to depend upon the patient's faith in the healer or the healing process (see PLACEBO EFFECT). In such cases, any beneficial effects may be attributed to a psychosomatic process rather than a paranormal or supernatural one. See also MENTAL HEALING; PSYCHIC HEALING.

**faking** *n.* the practice of some participants in an evaluation or psychological test who either (a) "fake good" by choosing answers that create a favorable impression, as may occur, for example, when an individual is applying for a job or admission to an educational institution; or (b) "fake bad" by choosing answers that make them appear disturbed or incompetent, as may occur, for example, when an individual wishes to be exempted from military service or exonerated in a criminal trial. —**fake** *vb.*

**fallacy** *n.* **1.** an error in reasoning or argument that leads to a conclusion that may appear valid but is actually invalid. A fallacy may be formal or informal. A **formal fallacy** involves a violation of a principle of formal logic. An **informal fallacy** leads to an invalid conclusion because it is misleading in its language or appears to apply to a situation when it does not really apply. See also EITHER-OR FALLACY; FALSE ANALOGY; FALSE AUTHORITY; FALSE CAUSE; HISTORICAL FALLACY. **2.** more generally, any mistaken idea. —**fallacious** *adj.*

**fallacy of personal validation** see BARNUM EFFECT.

**falling out** a CULTURE-BOUND SYNDROME found in the United States and the Caribbean. Symptoms include sudden collapse, sometimes preceded by feelings of dizziness or "swimming" in the head. Although their eyes are usually open, patients claim to be unable to see; they usually hear and understand what is occurring around them but feel powerless to move. The condition may be associated with CONVERSION DISORDER or DISSOCIATIVE DISORDER. Also called **blacking out**.

**falling sickness** see EPILEPSY.

**fallopian tube** either of the slender fleshy tubes in mammals that convey ova (egg cells) from each ovary to the uterus and where fertilization may occur. [Gabriele Fallopius (1523–1562), Italian anatomist]

**fallopian-tube pregnancy** see TUBAL PREGNANCY.

**false alarm** in signal detection tasks, an incorrect observation by the participant that a signal is present in a trial when in fact it is absent. The **false-alarm rate** is the proportion of incorrect *yes* responses in such a task. See also SIGNAL DETECTION THEORY. Compare MISS.

**false analogy** a type of informal FALLACY or a persuasive technique in which the fact that two things are alike in one respect leads to the invalid conclusion that they must be alike in some other respect. For example, *The brain is in some respects like a computer: Computers receive and store input in discrete bits: Therefore, ideas in the brain are formed from discrete bits of information.* See ANALOGY.

**false authority** a type of informal FALLACY or a persuasive technique in which it is assumed that the opinions of a recognized expert in one area should be heeded in another area. For example, *Mr. X should know how to deal with government deficits because he is a successful businessman.* Also called **expert fallacy**.

**false belief** a mental proposition that is asserted with high confidence but lacks a basis in reality.

**false-belief task** a type of task used in THEORY OF MIND studies in which children must infer that another person does not possess knowledge that they possess. For example, children shown that a candy box contains pennies rather than candy are asked what someone else would expect to find in the box. Children of about 3 years or younger would say pennies, whereas older children would correctly reply candy.

**false cause** a type of informal FALLACY or a persuasive technique in which a temporal sequence of events is assumed to be a causal sequence of events. Thus, because B follows A, A is considered the cause of B. For example, *Because Smith became angry after being frustrated, Smith's frustration caused Smith's anger.* See also CAUSAL ORDERING; REVERSE CAUSALITY.

**false-consensus effect** the tendency to assume that one's own opinions, beliefs, attributes, or behaviors are more widely shared than is actually the case. A robustly demonstrated phenomenon, the false-consensus effect is often attributed to a desire to view one's thoughts and actions as appropriate, normal, and correct. Compare FALSE-UNIQUENESS EFFECT.

**false dementia** a condition that mimics the symptoms of dementia but is a normal response to certain environmental conditions, such as sensory deprivation, restricted movement, or institutionalization with prolonged administration of medication.

**false detection** the incorrect detection of a signal in the presence of NOISE. See also FALSE ALARM.

**false memory** a distorted recollection of an event or, most severely, recollection of an event that never actually happened. False memories are errors of commission, because details, facts, or events come to mind, often vividly, but the remembrances fail to correspond to prior events. Even when people are highly confident that they are remembering "the truth" of the original situation, experi-

mental evidence shows that they can be wrong. For example, one quarter of adults in a particular experiment who were told an untrue story about being lost in a mall as a child—ostensibly obtained from their family members—adopted the story, sometimes embellishing it with vivid sensory detail (e.g., the clothes that the rescuer was wearing). The phenomenon is of particular interest in legal cases, specifically those involving eyewitness memories and **false memory syndrome (FMS)**, in which adults seem to recover memories of having been physically or sexually abused as children, with such recoveries often occurring during therapy. The label is controversial, as is the evidence for and against recovery of abuse memories; false memory syndrome is not an accepted diagnostic term, and some have suggested using the more neutral phrase **RECOVERED MEMORY**. Also called **illusory memory**; **paramnesia**; **pseudomemory**.

**false negative** a case that is incorrectly excluded from a group by the test used to determine inclusion. In diagnostics, for example, a false negative is an individual who, in reality, has a particular condition but whom the diagnostic instrument indicates does not have the condition. In INFERENCE STATISTICS, a false negative is also referred to as a TYPE II ERROR.

**false positive** a case that is incorrectly included in a group by the test used to determine inclusion. In diagnostics, for example, a false positive is an individual who, in reality, does not have a particular condition but whom the diagnostic instrument indicates does have the condition. In INFERENCE STATISTICS, a false positive is also called a TYPE I ERROR.

**false pregnancy** see PSEUDOCYESIS.

**false rejection** the inability to detect a signal when it is presented with NOISE. In SIGNAL DETECTION THEORY, false rejection is known as a MISS. Compare FALSE ALARM.

**false self** in the OBJECT RELATIONS THEORY of British psychoanalyst Donald Winnicott (1896–1971), the self that develops as a defense against IMPINGEMENTS and in adaptation to the environment. This contrasts with the **TRUE SELF**, which develops in an environment that adapts to the infant and allows him or her to discover and express true impulses.

**falsestto** *n.* a thin, high-pitched voice in which vocal register is extended upward beyond the normal range when a reduced surface of the expanded and separated vocal cords is activated by the airstream. This quality of vocal resonance can be used by men to extend the normal range of their singing voice.

**false-uniqueness effect** the tendency to underestimate the extent to which others possess the same beliefs and attributes as oneself or engage in the same behaviors, particularly when these characteristics or behaviors are positive or socially desirable. It is often attributed to a desire to view one's thoughts and actions as unusual, arising from personal, internal causes. Compare FALSE-CONSENSUS EFFECT.

**falsifiability** *n.* the condition of admitting falsification: the logical possibility that an assertion, hypothesis, or theory can be shown to be false by an observation or experiment. The most important properties that make a statement falsifiable in this way are (a) that it makes a prediction about an outcome or a universal claim of the type "All Xs have property Y" and (b) that what is predicted or claimed is observable. Austrian-born British philosopher

Karl Popper (1902–1994) argued that falsifiability is an essential characteristic of any genuinely scientific hypothesis. Also called **disconfirmability**; **refutability**. See RISKY PREDICTION. —**falsifiable** *adj.*

**falsificationism** *n.* the position that (a) the disproving, rather than proving, of hypotheses is the basic procedure of scientific investigation and the chief means by which scientific knowledge is advanced; and (b) FALSIFIABILITY is the property that distinguishes scientific claims from truth claims of other kinds, such as those of metaphysics or political ideology. [introduced by Austrian-born British philosopher Karl Popper (1902–1994)] —**falsificationist** *adj.*

**familial dysautonomia** an autosomal recessive disorder (see RECESSIVE ALLELE) affecting nerve function throughout the body and characterized by insensitivity to pain, feeding difficulties, seizures, deficient tear production, excessive sweating, drooling, and blotchy skin. Mental impairment may be associated with the disorder, but most patients have normal intelligence. Also called **Riley-Day syndrome**.

**familial factor** an element or condition in a family that accounts for a certain disease, disorder, or trait. A familial factor may or may not be inherited.

**familial Portuguese polyneuritic amyloidosis** see ANDRADE'S SYNDROME.

**familial tremor** see ESSENTIAL TREMOR.

**familial Turner syndrome** see NOONAN SYNDROME.

**familiar** *n.* in folklore and DEMONOLOGY, a supernatural spirit that supposedly lives with somebody and acts as a servant, often taking the form of an animal (e.g., a witch's cat).

**familiarity** *n.* a form of remembering in which a situation, event, place, person, or the like provokes a subjective feeling of recognition and is therefore believed to be in memory, although it is not specifically recalled.

**familism** *n.* a cultural value common in collectivist or traditional societies that emphasizes strong interpersonal relationships within the EXTENDED FAMILY, together with interdependence, collaboration, and the placing of group interests ahead of individual interests. —**familistic** *adj.*

**family** *n.* **1.** a kinship unit consisting of a group of individuals united by blood or by marital, adoptive, or other intimate ties. Although the family is the fundamental social unit of most human societies, its form and structure vary widely. See BIOLOGICAL FAMILY; EXTENDED FAMILY; NUCLEAR FAMILY; PERMEABLE FAMILY; STEPFAMILY. **2.** in BIOLOGICAL TAXONOMY, a main subdivision of an ORDER, consisting of a group of similar, related genera (see GENUS). **3.** a collection of mathematically or statistically related entities. For example, a set of statistical tests conducted when there are more than two groups for an INDEPENDENT VARIABLE within an ANALYSIS OF VARIANCE constitutes a family of tests. See also FAMILY-WISE ALPHA LEVEL; FAMILY-WISE ERROR RATE. —**familial** *adj.*

**Family and Medical Leave Act** see FAMILY LEAVE.

**family bed** see BED-SHARING.

**family constellation** the total set of relationships within a particular family, as characterized by such factors as the number and birth order of members and their ages, roles, and patterns of interaction. The term is associated with Alfred ADLER.

**family counseling** counseling of parents or other family members by psychologists, social workers, licensed counselors, or other professionals, who provide information, emotional support, and practical guidance on problems faced in the family context, such as raising a child who is disabled, family planning, or substance abuse. See also GENETIC COUNSELING.

**family dynamics** see INTRAFAMILY DYNAMICS.

**family group psychotherapy** therapeutic methods that treat a family as a system rather than concentrating on individual family members. The various approaches may be psychodynamic, behavioral, systemic, or structural, but all regard the interpersonal dynamics within the family as more important than individual intrapsychic factors.

**family interaction method** a study technique for investigating family behavior by observing the interaction of its members in a controlled situation, such as a clinic or laboratory.

**family intervention** **1.** a synonym for FAMILY THERAPY. **2.** an intervention taught by a therapist to one family member (e.g., parent) who then delivers the intervention to another family member (e.g., child) in the home. It is frequently used as an early intervention for a variety of disorders, such as autism, attention-deficit/hyperactivity disorder, speech and language pathology, and disruptive behavior disorders. **3.** see INTERVENTION.

**family leave** time off (paid or unpaid) from work to address family responsibilities, such as the birth or adoption of a child or the care of an immediate family member with a serious health condition. In the United States, the **Family and Medical Leave Act** of 1993 provides eligible full-time employees with up to 12 weeks of unpaid, job-protected leave per year. Globally, the majority of developed countries have legislated **parental leave** policies with varying periods of paid time off to care for children after birth.

**family life cycle** the series of stages that occur in the life history of any given family, with such stages typically including marriage (or coupling), raising children to independent young adulthood, and retirement.

**family life education** any initiative or effort intended to ameliorate widespread societal issues by fostering healthy relationships within families. The approach is preventive; it provides family members at risk of various problems (e.g., substance abuse, domestic violence, teenage pregnancy, school or career failure) with information and resources to encourage, for example, good communication, strong decision-making and problem-solving skills, positive self-esteem, and understanding of others' differences and respect for their points of view. For example, a family life education program for stepfamilies might use behavior-modeling videos to demonstrate effective parenting practices, and a program for low-achieving students in families might use a job-shadowing exercise to aid in vocational planning. Professionals in the field, known as **family life educators**, are not licensed but may be certified from any of several organizations worldwide.

**family mediation** a structured process in which a neutral third party, typically an attorney or a mental health practitioner with training in negotiation, helps individuals or families to resolve conflicts and reach agreements in such areas as divorce and child custody.

**family medicine** the practice of treating a wide variety

of illnesses and disorders in individuals and family members of all ages. Physicians now specializing in this area (called **family practice doctors**) must first undergo special training and become certified or board-eligible in family medicine in order to practice; such requirements did not apply until the 1970s. Family physicians trained before family medicine became a certifiable specialty are usually called **general practitioners** or **GPs** (labels sometimes also used by osteopaths). Both types of family physician are considered **PRIMARY CARE PROVIDERS**.

**family mythology** the shared stories, norms, and beliefs within a family system. The mythology can be used to deny trauma or pathology within the family or to ascribe meaning to events in ways that suggest their inevitability or importance.

**family of origin** the family in which an individual was raised, which may or may not be the individual's **BIOLOGICAL FAMILY**.

**family pattern** a characteristic quality of the relationship between the members of a particular family (e.g., between parents and children). Family patterns vary widely in emotional tone and in the attitudes of the members toward each other. Some families are warm, others cool; some are extremely close and symbiotic, in others the members keep each other at a distance; some are open to friends and relatives, others are not; in some, one or more children are accepted and loved, in others one or more children are distanced or otherwise rejected. Such patterns or elements of such patterns may range from nonconscious to fully realized. See also **PATHOGENIC FAMILY PATTERN**.

**family planning** controlling the size of the family, especially through the use of **BIRTH-CONTROL** measures for determining the number and spacing of children. See also **POPULATION RESEARCH**.

**family psychology** a basic and applied specialty in psychology that focuses on interactions within the family and developmentally influential contexts (e.g., neighborhoods, schools). Research and clinical intervention in this specialty are taught in doctoral psychology programs, either within a specified family curriculum or more often within broader programs, such as clinical research and applied clinical and counseling programs.

**family resemblance** in studies of **CATEGORIZATION**, the idea that a set of instances may form a category or give rise to a concept even though there is no single attribute common to all the instances: It is sufficient that each instance should have one or more attributes in common with one or more other instances. The members of the category that have the most attributes in common with other members are said to have the highest family resemblance. The category **PROTOTYPE** will be based on those members with the highest family resemblance and the lowest resemblance to members of other categories. See also **DISJUNCTIVE CONCEPT**.

**family romance** a common childhood fantasy in which a child imagines that he or she is the offspring not of his or her biological parents but of a noble or royal personage. Sigmund **FREUD** saw this as rooted in the **OEDIPUS COMPLEX**. See **FOSTER-CHILD FANTASY**.

**family sculpting** a technique in **FAMILY THERAPY** in which the therapist asks one or more members of the family to arrange the other members (and lastly themselves) in relation to one another in terms of posture, space, and atti-

tude so as to portray the arranger's perception of the family, either in general or with regard to a particular situation or conflict. This technique often reveals family dynamics visually in a way that may not be adequately captured in verbal descriptions by family members.

**family study** research conducted among siblings, parents, or children to assess evidence for genetic links for characteristics or outcomes, often related to health or disease. For example, a family study might be conducted to assess whether individuals from the same family who share a similar genetic structure also have similar responses to a health-promotion intervention such as diet, exercise, or medication. The extent to which performance on a given measure varies as a function of genetic similarity is used as an indication of the **HERITABILITY** of that measure.

**family support services** periodic services provided to families of a person with a disability or chronic illness for the purpose of enhancing their ability to care for the person or alleviating stress associated with family living. Examples include day and overnight **RESPIRE CARE**, caregiver training and education, behavioral consultation, transportation to appointments, and sibling services (e.g., counseling).

**family systems theory** a broad conceptual model that focuses on the relationships between and among interacting individuals in a family and combines core concepts from **GENERAL SYSTEMS THEORY**, **CYBERNETICS**, family development theory, **OBJECT RELATIONS THEORY**, and **SOCIAL LEARNING THEORY**. Underlying various family therapies, the theory stresses that therapists must see the whole family, rather than work only with individual members, to create constructive, systemic, and lasting changes in the family. Also called **Bowen family systems theory**; **family systems model**. [developed by U.S. psychiatrist Murray Bowen (1913–1990)]

**family therapy** a form of psychotherapy that focuses on the improvement of interfamilial relationships and behavioral patterns of the family unit as a whole, as well as among individual members and groupings, or subsystems, within the family. Family therapy includes a large number of treatment forms with diverse conceptual principles, processes and structures, and clinical foci. Some family therapy approaches (e.g., **OBJECT RELATIONS THEORY**) reflect extensions of models of psychotherapy with individuals in the interpersonal realm, whereas others (e.g., **STRUCTURAL FAMILY THERAPY**) evolved in less traditional contexts. Most approaches emphasize contexts in which clinical problems arise. This accompanying systemic view potentially allows clinical attention to all levels of the organization of behavior, from the individual, to the family, and to the community. Family therapy models vary enormously in terms of length, past versus present orientation, techniques used, and treatment goals. See also **CONJOINT THERAPY**; **COUPLES THERAPY**; **FAMILY GROUP PSYCHOTHERAPY**; **FAMILY SYSTEMS THEORY**.

**family values** moral and social values attributed to the traditional **NUCLEAR FAMILY**. In some Christian contexts, for example, these typically include discipline, respect for authority, heterosexuality, and sexual abstinence outside marriage. The term is now primarily associated with political or religious conservatism.

**family-wise alpha level** a set value of the probability of making a **TYPE I ERROR** when carrying out a set of hypothesis tests (e.g., when conducting **MULTIPLE COMPARI-**



SONS within a data set). In many studies, family-wise alpha is kept at .05, such that there is only a 5% total chance of rejecting a NULL HYPOTHESIS when it should be retained over a set of tests.

**family-wise error rate** the probability of making a TYPE I ERROR when conducting MULTIPLE COMPARISONS among groups within a data set. Although similar to the FAMILY-WISE ALPHA LEVEL, which is a predetermined probability value to keep the amount of FALSE-POSITIVE errors at a manageable level, the family-wise error rate is assessed after a set of hypothesis tests have been conducted. Researchers often like to keep this value at .05. See also TEST-WISE ERROR RATE.

**Fanapt** *n.* a trade name for ILOPERIDONE.

**fanaticism** *n.* excessive and often irrational zeal or devotion to a cause or set of beliefs. —**fanatic** *adj., n.*

**fan effect** the finding that as the number of relations between one concept and others increases, the time required to make a decision about one of those relations increases. For example, if John has one brother and Bill has six, it would take longer to verify that Joe is Bill's brother than it would to verify that Ted is John's brother.

**fantasy** *n.* 1. any of a range of mental experiences and processes marked by vivid imagery, intensity of emotion, and relaxation or absence of logic. Fantasizing is normal and common and often serves a healthy purpose of releasing tension, giving pleasure and amusement, or stimulating creativity. It can also be indicative of pathology, as in delusional thinking or significant disconnection from reality. 2. in psychoanalytic theories, a figment of the imagination: a mental image, night DREAM, or DAYDREAM in which a person's conscious or unconscious wishes and impulses are fulfilled (see WISH FULFILLMENT). Followers of Melanie KLEIN use the spelling PHANTASY to denote specifically unconscious wishes. —**fantasize** *vb.*

**fantasy play** pretend or make-believe play that includes an as-if orientation to actions, objects, and peers. It often involves playing a distinct role, such as mother, teacher, or doctor. Fantasy play also involves taking a stance that is different from reality and using a mental representation of a situation as part of an enactment. Also called **pretend play**. See also SYMBOLIC PLAY.

**FAP 1.** abbreviation for FIXED ACTION PATTERN. 2. abbreviation for FUNCTIONAL ANALYTIC PSYCHOTHERAPY.

**FAR** abbreviation for FETUS AT RISK.

**Farber's lipogranulomatosis** a disorder of lipid metabolism characterized by the development of nodules and pigmentation of the skin. The upper extremities are affected, with arthritic swelling and erosion of the bones. Normal body tissues are infiltrated and replaced by foam cells. Respiratory distress and intellectual disability appear at a very early age. [Sydney **Farber** (1903–1973), U.S. pediatric pathologist]

**far point** the farthest point at which an object can be seen clearly under conditions of relaxed ACCOMMODATION. Compare NEAR POINT.

**farsightedness** *n.* see HYPEROPIA.

**fartlek training** athletic training or exercise characterized by alternating intervals of intense activity (e.g., running) followed by periods of less intense activity (e.g., walking), creating both aerobic and anaerobic stress. The length and speed of each interval are determined by the in-

dividual according to his or her perceived endurance and needs. [Swedish *fartlek*, “speed play”]

**FAS** abbreviation for FETAL ALCOHOL SYNDROME.

**fascia** *n.* (*pl. fasciae*) a sheet or band of fibrous tissue covering, separating, or binding together muscles, organs, and other soft-tissue structures of the body. —**fascial** *adj.*

**fasciculus** *n.* (*pl. fasciculi*) a bundle of nerve fibers, muscle fibers, or tendon fibers. —**fascicular** *adj.*

**fasciculus cuneatus** see CUNEATE FASCICULUS.

**fasciculus gracilis** see GRACILE FASCICULUS.

**fascination** *n.* 1. profound interest in, attraction to, or enchantment with a person, object, activity, or phenomenon. 2. in psychoanalytic theory, an infant's primitive attempt to master what is perceived (e.g., a light) by identifying with it. —**fascinate** *vb.*

**fasciolus gyrus** a brain convolution that is a part of the HIPPOCAMPAL FORMATION, appearing as a delicate band of tissue that communicates with a thin sheet of gray matter, the indusium griseum, on the surface of the corpus callosum. It is associated with olfactory functions. Also called **gyrus fasciolaris**.

**Fascism Scale** see F SCALE.

**fashion** *n.* the styles of artistic and cultural expression, garments, manners, and customs prevalent in a particular time and place. Fashion may be transient and irrational but often reflects the ZEITGEIST or mood of society.

**FAS Test** see CONTROLLED ORAL WORD ASSOCIATION TEST.

**fastigial nucleus** a nucleus deep in the cerebellum that projects to the VESTIBULAR NUCLEI and the RETICULAR FORMATION of the pons and midbrain.

**fast mapping** the ability of young children to learn new words quickly on the basis of only one or two exposures to these words. See also QUINIAN BOOTSTRAPPING. [coined in 1978 by U.S. developmental psychologist Susan E. Carey (1942– ) and Elsa Bartlett]

**fast muscle fiber** a type of muscle fiber found in SKELETAL MUSCLE that contracts rapidly but fatigues readily. Compare SLOW MUSCLE FIBER.

**fat** *n.* a mixture of lipids, mainly triglycerides, that is typically solid at room temperature. In mammals (including humans), it serves as the most concentrated store of food energy and is deposited primarily beneath the skin and around certain organs. In many animals, it also serves as a primary source of insulation. See ADIPOSE TISSUE; BROWN FAT; FAT METABOLISM.

**fatal familial insomnia** a genetic disorder caused by a mutation of the PRION protein in the brain. It affects the thalamus, causing progressive insomnia and eventually dementia; death occurs about 18 months after onset of symptoms.

**fatalistic suicide** one of four types of suicide proposed in 1897 by Émile DURKHEIM, involving excessive social regulations that restrict individuation. Feeling controlled by the values and norms of society, the person becomes hopeless and despairs of ever escaping these oppressive external forces. Durkheim associated fatalistic suicide with preindustrial social orders, citing suicides of slaves and of older childless married women as examples, and believed it to be of little contemporary relevance. Indeed, fatalistic suicide often is omitted from modern discussions of Durkheim's ty-

pology. See also ALTRUISTIC SUICIDE; ANOMIC SUICIDE; EGOISTIC SUICIDE.

**fat cell** see ADIPOCYTE.

**fate control** the circumstance in which a person or group has absolute control over the fate or outcomes of another person or group. Fate control exists when the other's behavior plays no role in determining what outcomes are to be received. This is in contrast to **behavior control**, in which the other's behavior does affect outcomes and the other is induced to behave in the desired direction. Fate control can, under certain circumstances, induce LEARNED HELPLESSNESS. [introduced by Harold H. KELLEY and John W. THIBAUT in their INTERDEPENDENCE THEORY]

**fate neurosis** in psychoanalytic theory, a compulsive, unconscious, and self-punitive need to arrange life experiences in such a way that failure and defeat are inevitable.

**father figure** see FATHER SURROGATE.

**father fixation** in psychoanalytic theory, an abnormally strong emotional attachment to the father.

**father-ideal** *n.* in psychoanalytic theory, the father component of the EGO-IDEAL, which is formed through identification with the parents.

**father surrogate** a substitute for a person's biological father, who performs typical paternal functions and serves as an object of identification and attachment. Father surrogates may include such individuals as adoptive fathers, stepfathers, older brothers, teachers, and others. Also called **father figure**; **surrogate father**.

**fatigability** *n.* the susceptibility of an organ or an individual to fatigue, as compared with other organs or individuals.

**fatigue** *n.* **1.** a state of tiredness and diminished functioning. Fatigue is typically a normal, transient response to exertion, stress, boredom, or inadequate sleep but also may be unusually prolonged and indicative of disorder (e.g., chronic fatigue syndrome, anemia, hypothyroidism). **2.** reduced response of a receptor cell or sense organ resulting from excessive stimulation.

**fatigue checklist** a list of symptoms and causes of fatigue developed to assess a person's ability to carry out a job or task safely. Fatigue checklists may survey lack of energy, poor endurance, difficulty concentrating, muscle weakness, moodiness, number of hours worked, difficulty of work, and so on. They have been developed for nurses, drivers of heavy vehicles, soldiers, and pilots, among others.

**fatigue effect** a decline in performance on a prolonged or demanding research task that is generally attributed to the participant becoming tired or bored with the task. The fatigue effect is an important consideration when administering a lengthy survey or test in which participants' performance may worsen simply due to the challenges of an extended task.

**fatigue studies** research on factors that cause both mental and physical fatigue, such as job stress, caregiving, chronic illness, and ergonomic design.

**fat metabolism** all the biochemical processes involved in the breakdown, manufacture, or storage of fat in the body. Excess dietary carbohydrates (in the form of glucose) can be converted to fat (in the form of glycerides) and stored in specialized ADIPOSE TISSUE at sites distributed

around the body. Excess dietary fat is also stored in this way. Following a meal, uptake of glucose into fat cells (ADIPOCYTES) and manufacture of fat are promoted by the hormone INSULIN. Mobilization of fat occurs during fasting, exercise, and in response to stress and is triggered by the hormone EPINEPHRINE and by norepinephrine released by nerve endings of the sympathetic nervous system. Stored fat is mobilized by being broken down to its constituents—FATTY ACIDS and glycerol—which are released into the bloodstream to provide fuel for other tissues, especially liver and muscle. Here, the fatty acids are converted into the energy carrier ATP by means of beta oxidation. However, fatty acids cannot be converted (at least in appreciable amounts) into glucose, which is the fuel required by the brain.

**fatty acid** an organic acid with a long, usually unbranched hydrocarbon chain and an even number of carbon atoms. Fatty acids are the fundamental constituents of many important lipids, including triglycerides. Some fatty acids can be synthesized by the body, but others—the **essential fatty acids**, such as linoleic acid—must be obtained from the diet. See FAT METABOLISM.

**fatty acid amide hydrolase (FAAH)** see ENDOGENOUS CANNABINOID.

**fault tree analysis (FTA)** a method of qualitative or quantitative safety or ACCIDENT ANALYSIS in which logic symbols are used to analyze the possible factors contributing to an accident or hazardous system state. The accident or hazardous state forms the "root" of the tree, and the logic symbols representing the possible contributing factors form the "branches."

**FBA** abbreviation for FUNCTIONAL BEHAVIORAL ASSESSMENT.

**FDA** **1.** abbreviation for FUNCTIONAL DATA ANALYSIS. **2.** abbreviation for U.S. FOOD AND DRUG ADMINISTRATION.

**F distribution** a theoretical PROBABILITY DISTRIBUTION widely used in the ANALYSIS OF VARIANCE, MULTIPLE REGRESSION, and other statistical tests of hypotheses about population variances. It is the ratio of the variances of two independent random variables each divided by its DEGREES OF FREEDOM. In an analysis of variance, for example, the *F* distribution is used to test the hypothesis that the variance between groups is significantly greater than the variance within groups, thus demonstrating evidence of some differences among the means. See *F* RATIO; *F* TEST.

**fear** *n.* a basic, intense emotion aroused by the detection of imminent threat, involving an immediate alarm reaction that mobilizes the organism by triggering a set of physiological changes. These include rapid heartbeat, redirection of blood flow away from the periphery toward the gut, tensing of the muscles, and a general mobilization of the organism to take action (see FEAR RESPONSE; FIGHT-OR-FLIGHT RESPONSE). Fear differs from ANXIETY in that the former is considered an appropriate short-term response to a present, clearly identifiable threat, whereas the latter is a future-oriented, long-term response focused on a diffuse threat. Some theorists characterize this distinction more particularly, proposing that fear is experienced when avoiding or escaping an aversive stimuli and that anxiety is experienced when entering a potentially dangerous situation (e.g., an animal foraging in a field where there might be a predator). Whatever their precise differences in meaning, however, the terms are often used interchangeably in common parlance. See also FRIGHT.

**fear appeal** a persuasive message that is designed to alter attitudes by producing fear in the recipient. Such messages are most effective when they provide compelling arguments for the likelihood of negative outcomes if a certain advocated measure is not adopted, and when the arguments make a strong case that adopting the measure will eliminate the threat. See also AFFECTIVELY BASED PERSUASION.

**fear drive** the learned aversion to a situation or other stimulus that motivates escape from or avoidance of the stimulus.

**feared self** in analyses of self-concept, a mental representation of psychological attributes that one might possess in the future, in which thoughts about the acquisition of these attributes elicit a sense of anxiety or dread.

**fearful attachment** an adult attachment style characterized by a negative INTERNAL WORKING MODEL OF ATTACHMENT of oneself and of others. Individuals with fearful attachment doubt both their own and others' competence and efficacy and are presumed not to seek help from others when distressed. Compare DISMISSIVE ATTACHMENT; PREOCCUPIED ATTACHMENT; SECURE ATTACHMENT.

**fear-induced aggression** a form of aggression in which an animal attacks after it has been severely threatened or cornered.

**fear of commitment** feelings of anxiety and uncertainty related to the decision to become bound to a course of action. Such feelings are commonly aroused by the decision to become emotionally or legally committed to a long-standing relationship with another person and often stem from problems with intimacy and attachment; in an extreme form, fear of commitment may lead to social maladjustment.

**fear of darkness** normal or pathological anxiety about darkness or night. Fear of darkness is associated with feelings of helplessness and a sense of unfamiliarity. The fear first occurs normally at about 3 years of age but may develop into a SPECIFIC PHOBIA in which darkness is associated with danger and threat.

**fear of failure** persistent and irrational anxiety about failing to measure up to the standards and goals set by oneself or others. This may include anxiety over academic standing, losing a job, sexual inadequacy, or loss of face and self-esteem. Fear of failure may be associated with PERFECTIONISM and is implicated in a number of psychological disorders, including eating disorders and some anxiety disorders.

**fear of flying** a persistent and irrational fear of traveling by airplane or other airborne vehicle, also called **aviophobia** (although this name is now seldom used). In *DSM-IV-TR* and *DSM-5*, fear of flying is classified as a SPECIFIC PHOBIA, situational type.

**fear of rejection** a persistent and irrational fear of being socially excluded or ostracized, which is often a feature of SOCIAL PHOBIA.

**fear of strangers** see STRANGER ANXIETY.

**fear of success** a fear of accomplishing one's goals or succeeding in society, or a tendency to avoid doing so. Fear of success was originally thought to be experienced primarily by women, because striving for success was held to place a woman in conflict between a general need for achievement and social values that tell her not to achieve

"too much." It is now thought that men and women are equally likely to experience fear of success. Also called **fear of success syndrome**; **Horner effect**. See also JONAH COMPLEX. [first proposed in 1969 by U.S. psychologist Matina Horner (1939– )]

**fear response** a response to a threat in which the threatened organism attempts to guard vulnerable vital organs and to protect itself. In addition to these protective functions, the fear response is aimed at removing the person or animal from the threatening situation, by overt withdrawal, by coping behaviors (e.g., shutting the eyes to avoid seeing the fear stimulus), or by remaining motionless. Physiological responses vary depending on the situation and the proximity of the threat. See also FIGHT-OR-FLIGHT RESPONSE; FREEZING BEHAVIOR.

**fear structure** see EMOTIONAL PROCESSING THEORY.

**Fear Survey Schedule (FSS)** a questionnaire designed to measure fear, phobic behavior, and generalized anxiety. It is currently available in numerous versions, with the 72-item **FSS-III** being the most commonly used, particularly in SYSTEMATIC DESENSITIZATION. These items consist of fear- or anxiety-producing objects or situations, grouped into six classes (animal fears, social fears, etc.), to which participants respond on a scale from 0 (*not at all*) to 4 (*very much*) regarding their degree of discomfort. [originally published in 1964 by Joseph Wolpe and U.S. clinical psychologist Peter J. Lang (1930– )]

**feasibility standards** criteria used to judge the practical, feasible, and cost-effective nature of any enterprise or project. For example, the feasibility of an evaluation research study is determined on the basis of its pragmatic implementation, its political viability among various STAKEHOLDERS, and the cost of the resources necessary to carry out the research. See also ACCURACY STANDARDS; PROPRIETY STANDARDS; UTILITY STANDARDS.

**feasibility test** an investigation conducted prior to a study in order to establish properties of response measures and to determine the successfulness of the study's design. It is used to establish the validity of response measures, to provide early information on the probable level of effects, or to try out new methodologies. See also EVALUABILITY ASSESSMENT; FEASIBILITY STANDARDS.

**feature** *n.* **1.** an attribute of an object or event that plays an important role in distinguishing it from other objects or events and in the formation of category judgments. For example, a particular nose is a feature of one person's face, wings are a feature of the category *bird*, particular lines and angles are features of a particular shape, line segments of various types are features of letters, and so on. **2.** in phonemics, an attribute of a speech sound, such as whether it is VOICED or UNVOICED, that plays a critical role in distinguishing one PHONEME from another. See BINARY FEATURE; MINIMAL PAIR.

**feature abstraction** a hypothetical process by which people learn from their experience with exemplars of different categories to determine the features that might be used to define membership in these categories.

**feature attention** a form of SELECTIVE ATTENTION in which the unit of selection is a distinguishing feature or property of a target item (e.g., the red hair of the person one is looking for in a crowd). Numerous studies have confirmed that focusing on one such feature enhances the discriminability of the item being sought. See also FOCAL ATTENTION.

**feature detection theory** the theory that all complex stimuli can be broken down into individual parts (features), each of which is analyzed by a specific FEATURE DETECTOR.

**feature detector** any of various hypothetical or actual mechanisms within the human information-processing system that respond selectively to specific distinguishing features. For example, the visual system has feature detectors for lines and angles of different orientations as well as for more complex stimuli, such as faces. Feature detectors are also thought to play an important role in speech perception, where their function would be to detect those BINARY FEATURES that distinguish one PHONEME from another. Also called **feature analyzer**.

**feature indicator** any aspect of an object that provides visual cues to FEATURE DETECTORS in the visual cortex. Examples of feature indicators include boundaries between dark and light regions, straight or curved edges or surfaces, and connecting features (e.g., crossbars).

**feature-integration theory (FIT)** a two-stage theory of VISUAL ATTENTION. In the first (preattentive) stage, basic features (e.g., color, contrast, location in space, shape) are processed automatically, independently, and in parallel. In the second (attentive) stage, other properties, including relations between features of an object, are processed serially, one object (or group) at a time, and are “bound” together to create a single object that is consciously perceived. Also called **feature-integration hypothesis**. See BINDING HYPOTHESIS. See also TEXTONS. [proposed in 1980 by British psychologist Anne Marie Treisman (1935– )]

**feature model** a model of general knowledge or SEMANTIC MEMORY suggesting that information can be described as sets of features (e.g., the features that define *bird*).

**feature-negative discrimination** a GO/NO-GO discrimination procedure, based on a distinctive feature of one of two similar stimuli, in which the feature is part of the negative, or no-go, stimulus—that is, the stimulus associated with EXTINCTION.

**feature-positive discrimination** a GO/NO-GO discrimination procedure, based on a distinctive feature of one of two similar stimuli, in which the feature is part of the positive, or go, stimulus—that is, the stimulus associated with REINFORCEMENT.

**febrile delirium** delirium associated with or caused by fever.

**febrile seizure** a seizure arising from a high fever. It is the most common type of seizure in childhood and 20% to 30% of them recur. Febrile seizure is a benign condition for most children, but experiments with nonhuman animals and neuroimaging studies in humans suggest some febrile seizures may damage the hippocampus.

**fecal incontinence** the involuntary passage of flatus and feces in inappropriate places (clothing, floor, etc.) resulting from loss of bowel control due to an injury or physiological condition. Also called **bowel incontinence**. Compare ENCOPRESIS.

**feces** *n.* waste matter expelled from the bowels. In psychoanalytic theory, a child’s interest in feces is one of the earliest expressions of curiosity, and withholding feces is one of the earliest expressions of the drive for aggression and independence. Also called **excrement**; **fecal matter**. See also ANAL PERSONALITY; ANAL STAGE; SPHINCTER CONTROL. —**fecal** *adj.*

**Fechner’s colors** illusory sensations of color that arise when a disk with black and white sectors is spun about its axis. The appearance of these subjective colors is widely believed to be governed by local interactions in early, and likely retinal, mechanisms. See also BENHAM’S TOP. [Gustav Theodor FECHNER]

**Fechner’s law** a mathematical formula relating subjective experience to changes in physical stimulus intensity: Specifically, the sensation experienced is proportional to the logarithm of the stimulus magnitude. It is derived from WEBER’S LAW and expressed as  $\Psi = k \log S$ , where  $\Psi$  is the sensation,  $k$  is a constant, and  $S$  is the physical intensity of the stimulus. Also called **Weber–Fechner law**. See also STEVENS LAW. [Gustav Theodor FECHNER]

**Fechner’s paradox** the apparent increase in the brightness of a figure caused by closing one eye after viewing the figure with both eyes open. [Gustav Theodor FECHNER]

**fecundity** *n.* **1.** in biology, a measure of the number of offspring produced by an individual organism over a given time. **2.** in demography, the general capacity of a human population to have offspring. A below-average capacity is termed **subfecundity**. Compare BIRTH RATE; FERTILITY. —**fecund** *adj.*

**Federation of Associations in Brain and Behavioral Sciences (FABBS)** an association of scientific societies whose mission is to promote human potential and well-being by advancing the sciences of mind, brain, and behavior. It was founded in 1980 as the Federation of Behavioral, Psychological, and Cognitive Sciences, changing to its present name in 2009. The federation’s efforts focus on legislative and regulatory advocacy, education, and the communication of information to the federal government, public, and the scientific community.

**feble-mindedness** *n.* an obsolete name for intellectual disability or learning disability.

**feedback** *n.* information about a process or interaction provided to the governing system or agent and used to make adjustments that eliminate problems or otherwise optimize functioning. It may be stabilizing NEGATIVE FEEDBACK or amplifying POSITIVE FEEDBACK. The term’s origins in engineering and cybernetics lend it a distinct connotation of input–output models that is not as strictly applicable to the wide variety of usages found in psychology, such as BIOFEEDBACK, INFORMATION FEEDBACK, and SOCIAL FEEDBACK. Compare FEEDFORWARD.

**feedback device** a device that presents a visual, auditory, or tactile signal to communicate to the operator of an ENVIRONMENTAL CONTROL DEVICE the status of actions taken. See also CONTROL DEVICE; SWITCH DEVICE; TARGET DEVICE.

**feedback evaluation** see FORMATIVE EVALUATION.

**feedback loop** in CYBERNETIC THEORY, a self-regulatory model that determines whether the current operation of a system is acceptable and, if not, attempts to make the necessary changes. Its operation is summarized by the acronym TOTE (test-operate-test-exit). The two test phases compare the current reality against the goal or standard. The operate phase involves any processes or interventions designed to resolve unacceptable discrepancies between the reality and the standard. In the exit phase, the supervisory feedback loop is closed down because the circumstances have been brought into agreement with the standard. Also called **TOTE model**. See also NEGATIVE FEEDBACK.

**feedback system** a circuit in which output information (e.g., biological, mechanical) is used to modulate the input to the same circuit. In a **NEGATIVE FEEDBACK** system, the output is used to reduce the input; such systems play important roles in maintaining equilibrium of processes within organisms. See **HOMEOSTASIS**; **POSITIVE FEEDBACK**.

**feedforward** *n.* **1.** information or control signals sent to a part of the body or other system in order to prepare it for future motor activity or expected sensory input. **2.** information that can be used to forecast the performance of a person, group, product, or system so that adjustments can be made to avoid problems before they occur. Compare **FEEDBACK**.

**feeding and eating disorders of infancy or early childhood** in *DSM-IV-TR*, a category of disorders characterized by pathological feeding or eating behaviors that are usually first diagnosed in infancy, childhood, or adolescence. They include **PICA**, **RUMINATION**, and **FEEDING DISORDER OF INFANCY OR EARLY CHILDHOOD**.

**feeding behavior** the behavior involved in taking nourishment. In humans, the development of feeding behavior includes (a) stimulation and coordination of the sucking and swallowing reflexes in early infancy, (b) adaptation to breast or bottle and to scheduled or self-demand feeding, (c) biting at about the 4th month, (d) anticipatory chewing movements, (e) actual chewing when the teeth are developed, and (f) transferring from finger feeding to the use of various utensils.

**feeding center** a traditional name for the region of the **LATERAL HYPOTHALAMUS** in the brain that, when stimulated, produces eating behavior. Also called **hunger center**.

**feeding disorder of infancy or early childhood** in *DSM-IV-TR*, a disorder with an onset before the age of 6 (but typically within the 1st year following birth), characterized by persistent failure to eat adequately that results in significant failure to gain weight or significant loss of weight over a period of 1 month or more. The cause of the disorder is unknown.

**feeding problem** a form of behavior disorder in children that is characterized by refusal to eat, persistent failure to eat adequate amounts or types of food, or failure to hold down the food ingested. It is not due to a gastrointestinal or other medical condition or lack of available food, and it is not an eating disorder. Also called **feeding disturbance**. Compare **ORAL-MOTOR FEEDING PROBLEM**. See also **RUMINATION**.

**fee-for-service** *adj.* denoting the traditional method of payment for health care services, in which physicians or other providers set their own fees for services, and patients or insurance companies pay all or a percentage of these charges. This is the system of reimbursement used by indemnity insurance plans. Compare **PAY-FOR-PERFORMANCE**.

**feeling** *n.* **1.** a self-contained phenomenal experience. Feelings are subjective, evaluative, and independent of the sensations, thoughts, or images evoking them. They are inevitably evaluated as pleasant or unpleasant, but they can have more specific intrapsychic qualities, so that, for example, the **AFFECTIVE TONE** of fear is experienced as different from that of anger. The core characteristic that differentiates feelings from cognitive, sensory, or perceptual intrapsychic experiences is the link of **AFFECT** to **APPRAISAL**. Feelings differ from **EMOTIONS** in being purely mental,

whereas emotions are designed to engage with the world. **2.** any experienced sensation, particularly a tactile or temperature sensation (e.g., pain, coldness).

**feeling of knowing (FOK)** a sense of conviction that one possesses certain information despite being unable to retrieve it from memory at a given time. FOKs meet the empirical definition of conscious events in that they are accurately reportable. However, they typically lack such qualities as visual images, inner speech, imagined actions, and the like. The classic case of an FOK is the **TIP-OF-THE-TONGUE PHENOMENON** during word retrieval. See also **FRINGE CONSCIOUSNESS**.

**feeling of reality** the sense that the world is actual, which may be lost in mild dissociative conditions (e.g., derealization) and in more serious disorders (e.g., posttraumatic stress disorder, psychosis).

**feeling of unreality** see **DEPERSONALIZATION**; **DEREALIZATION**.

**feeling tone** see **AFFECTIVE TONE**.

**feeling type** in Carl JUNG's **ANALYTIC PSYCHOLOGY**, a **FUNCTIONAL TYPE** characterized by a dominance of feeling or affects. Feeling types evaluate their experiences and the world in terms of how these make them feel. The feeling type is one of Jung's two **RATIONAL TYPES**, the other being the **THINKING TYPE**. See also **INTUITIVE TYPE**; **SENSATION TYPE**.

**Feighner criteria** a set of formal diagnostic descriptions published in 1972 for 15 mental disorders. Developed to improve reliability in psychiatric diagnosis by standardizing the definition of specific disorders, the Feighner criteria were the first symptom-based diagnostic system to be used in psychiatric research and signaled a major shift away from the then-dominant psychoanalytic approach to mental illness. They became widely cited and used in research and played an influential role in the revival of biological thinking in U.S. psychiatry. See **RESEARCH DIAGNOSTIC CRITERIA**. [developed by a team of researchers led by U.S. psychiatrist John P. Feighner (1937– ) at Washington University, St. Louis]

**felbamate** *n.* an **ANTICONSULSANT** drug, structurally related to **MEPROBAMATE**, that is thought to work by both enhancing the effects of the inhibitory neurotransmitter **GAMMA-AMINOBUTYRIC ACID** and inhibiting the effects of the excitatory amino acid **GLUTAMATE** (see **NMDA RECEPTOR**). Due to the increased incidence of aplastic anemia and hepatitis associated with this drug, it is less commonly used than other anticonvulsants; it is generally reserved for patients with severe epilepsy who respond inadequately to other treatments. U.S. trade name: **Felbatol**.

**Feldenkrais method** a system of body movements that are designed to enhance psychological functioning. The method is used by certified practitioners and may be interpreted in numerous ways, but it always involves a dynamic interaction between bodily movements and psychological awareness. [Moshe Feldenkrais (1904–1984), physicist and engineer]

**fellatio** *n.* the use of the mouth in sexual stimulation of the penis. Also called **fellation**; **oral coitus**. See also **OROGENITAL ACTIVITY**. —**fellate** *vb.*

**felt need** a consciously experienced need that may relate to a sense of deprivation or a discrepancy with an affective ideal.

**felt sense** in FOCUSING therapy, vague bodily feelings that are thought to correspond to unresolved emotional conflicts, which tend to resolve when one simply pays attention to them. [defined by Austrian-born U.S. philosopher and psychologist Eugene T. Gendlin (1926– )]

**female choice** the selectivity displayed by females in choosing a mate. Because females often expend much more energy than males in the production and care of the young, females are thought to be more careful than males in choosing their mates. See also CRYPTIC FEMALE CHOICE; MATE SELECTION; MULTIPLE MATING.

**female circumcision** see FEMALE GENITAL MUTILATION.

**female ejaculation** expulsion of a lubricating fluid by the VESTIBULAR GLANDS of a woman during sexual stimulation and orgasm. The fluid may reach peak flow before orgasm, often increasing when stimulation is prolonged. Some researchers deny the existence of female ejaculation; however, it has been written about since the 4th century, and many women attest to having experienced it. See also GRAEFENBERG SPOT.

**female–female competition** see MALE–MALE COMPETITION.

**female genitalia** see GENITALIA.

**female genital mutilation (FGM)** any nontherapeutic procedure performed to modify or remove any part of the external genitalia in females, associated with cultural norms of femininity, chastity, and religious observance in certain countries, particularly in Africa. FGM takes one of four forms: excision of the clitoral hood only; excision of the entire clitoris (CLITORIDECTOMY) and often the labia minora; excision of the clitoris, labia minora, and most of the labia majora, with the sewing together of the remaining tissue to leave only a small vaginal opening (INFIBULATION); and any other injurious procedure, such as incising or burning of the clitoris, cutting of the vagina, and insertion of substances to cause vaginal bleeding. FGM may have numerous adverse consequences, such as severe pain, excessive bleeding, infection, reduced sexual sensitivity, less frequent orgasm, decreased enjoyment of sexual intercourse, and obstetrical complications. Also called **clitoral circumcision**; **female circumcision**; **female genital cutting**.

**femaleness** *n.* the quality of being female in the anatomical and physiological sense by virtue of possessing the female complement of a pair of X CHROMOSOMES. Compare FEMININITY.

**female Oedipus complex** see OEDIPUS COMPLEX.

**female orgasmic disorder** in DSM–IV–TR and DSM–5, a condition in which a woman recurrently or persistently has difficulty obtaining orgasm or is unable to reach orgasm at all following sexual stimulation and excitement, causing marked distress or interpersonal difficulty.

**female sexual arousal disorder** in DSM–IV–TR, a condition in which a woman recurrently or persistently is unable to attain or maintain adequate vaginal lubrication and swelling during sexual excitement, causing marked distress or interpersonal difficulty. It is a prevalent sexual problem for women and has a complex etiology involving a variety of physiological and psychological factors. It is identified as **female sexual interest/arousal disorder** in DSM–5.

**female sexual dysfunction (FSD)** any of various con-

ditions experienced by women that involve sexual difficulties and associated distress significant enough to interfere with participation in sexual relationships. Although specific definitional criteria vary, female sexual dysfunction generally is categorized into four groups of symptoms: persistent absence of desire, inability to get or stay excited, difficulty achieving orgasm, and pain associated with stimulation or intercourse. Among the particular problems often included as FSD are DYSpareunia, FEMALE ORGASMIC DISORDER, FEMALE SEXUAL AROUSAL DISORDER, VAGINISMUS, and sexual difficulties from underlying medical causes. Prevalence estimates also vary, but research suggests that more than 40% of women in the United States experience FSD.

**female sperm** spermatozoa that bear an X CHROMOSOME and therefore determine that an ovum they fertilize will become a female embryo.

**femininity** *n.* possession of social-role behaviors that are presumed to be characteristic of a girl or woman, as contrasted with FEMALENESS, which is genetically determined. —**feminine** *adj.*

**femininity complex** in psychoanalytic theory, a man's envy of women's procreative powers that has its roots in the young boy's envy of the mother's body. Some psychoanalysts see the femininity complex as the male counterpart to the female CASTRATION COMPLEX and PENIS ENVY. [first used in 1930 by German psychoanalyst Felix Boehm (1881–1958)]

**femininity phase** in the OBJECT RELATIONS THEORY of Melanie KLEIN, a period during the early phases of the OEDIPUS COMPLEX in which both boys and girls are posited to adopt a feminine attitude toward the father and to desire a child by him. Klein saw this turning to the father as an object of desire and away from the mother as the child's first object.

**feminism** *n.* any of a number of perspectives that take as their subject matter the problems and perspectives of women or the nature of biological and social phenomena related to gender. Feminism has evolved from a largely political movement in the 19th century, focused (in the United States) on women's suffrage and political and economic opportunities, into broader and more comprehensive academic, philosophical, and social movements. Although some feminist perspectives continue to focus on issues of fairness and equal rights, other approaches emphasize what are taken to be inherent and systematic gender inequities in Western society (see PATRIARCHY). In psychology, feminism has focused attention on the nature and origin of gender differences in psychological processes. See WOMEN'S LIBERATION MOVEMENT. See also ECOFEMINISM; EROTIC FEMINISM; INDIVIDUALIST FEMINISM; LESBIAN FEMINISM; MARXIST FEMINISM; MATERIAL FEMINISM; RADICAL FEMINISM. —**feminist** *adj., n.*

**feminist family therapy** an intervention, informed by FEMINIST THERAPY, that is used by therapists to reorganize the family so that no one is entrapped in dysfunctional roles or patterns of interaction based on the politics of power, particularly with regard to patriarchal roles.

**feminist psychology** an approach to psychological issues that emphasizes the role of the female perspective in thought, action, and emotion in the life of the individual and in society. It is seen by its proponents as an attempt to counterbalance traditional male-oriented and male-dominated psychology, as well as a model for similar approaches

for other less represented groups. See also ENGENDERING PSYCHOLOGY; WOMAN-CENTERED PSYCHOLOGY.

**feminist therapy** an eclectic approach to psychotherapy based conceptually in feminist political analyses and scholarship on the psychology of women and gender. In this orientation, the ways in which gender and gendered experiences inform people's understanding of their lives and the development of the distress that serves as a catalyst for seeking therapy are central. Race, class, sexual orientation, age cohort, and ability, as they interact with gender, are explored. Feminist therapy attempts to create an egalitarian therapeutic relationship in which intentional efforts are made by the therapist to empower and define the client as an authority equal in value to the therapist. Feminist therapy can be indicated for both female and male clients.

**feminization** *n.* the process of acquiring FEMININITY, regardless of the sex of the individual. —**feminize** *vb.*

**feminization of poverty** the trend for a disproportionate number of the poorest people in Western societies to be women. This can be attributed to a range of factors, including the growing number of families that are headed by a single mother, often with no financial support from the father, and the continuing tendency for occupations with a largely female workforce to pay lower wages. See also UNDERCLASS.

**feminizing testes syndrome** see ANDROGEN-INSENSITIVITY SYNDROME.

**fenestration** *n.* **1.** see BLOOD–BRAIN BARRIER. **2.** the surgical creation of an opening, as in the procedure, now rarely used, in which an opening is formed in the bony wall of the middle ear and into the semicircular canal in order to improve hearing loss caused by OTOSCLEROSIS.

**fenfluramine** *n.* a sympathomimetic agent, structurally related to the AMPHETAMINES, that functions as a SEROTONIN AGONIST and was formerly used for management of obesity (see APPETITE SUPPRESSANT). It was withdrawn from the U.S. market in 1997 due to the incidence of heart-valve abnormalities associated with its use.

**fentanyl** *n.* a highly potent OPIOID ANALGESIC that is used for anesthesia during surgery, for the management of severe cancer pain in patients resistant to other opioids, and (as a lozenge or sucker) for the relief of severe anxiety in children prior to surgical procedures. Its toxicity is similar to that of other opioids, with respiratory and circulatory depression predominating. It is known as **China white** in illicit use. Analogs of fentanyl in current use include SUFENTANIL, **alfentanil** (U.S. trade name: **Alfenta**), and **remifentanil** (U.S. trade name: **Ultiva**). U.S. trade names: **Sublimaze** (injectable form); **Actiq**, **Fentora**, and **Oralet** (oral forms); **Duragesic** (transdermal form, i.e., applied to the skin).

**FEPSAC** see EUROPEAN FEDERATION OF THE PSYCHOLOGY OF SPORT AND PHYSICAL ACTIVITY.

**feral children** children who reportedly have been raised by wild animals and isolated from human contact and care and, consequently, from social norms and behavior. Famous examples include the WILD BOY OF AVEYRON and the WOLF CHILDREN of India.

**Fernald method** an approach to reading based on the idea that students learn best when material is presented to several different senses. These methods, which employ

tracing, hearing, writing, and seeing, are often referred to as **VAKT** (visual, auditory, kinesthetic, tactile). The Fernald method teaches whole words. [Grace **Fernald** (1879–1950), U.S. psychologist]

**Ferree–Rand double broken circles** a figure used to test simultaneously for VISUAL ACUITY and ASTIGMATISM. Outlines of circles are interrupted by two small gaps, 90° apart, and the minimum gap size that can be detected is a measure of acuity (similar to LANDOLT CIRCLES). If one gap is more detectable than the other, it suggests that astigmatism is present. [Clarence **Ferree** (1877–1942) and Gertrude **Rand** (1886–1970), U.S. psychologists]

**Ferry–Porter law** see PORTER'S LAW.

**fertility** *n.* **1.** in biology, the potential of an individual to have offspring. Although most frequently applied to females, it may also refer to reproductive capacity in males. **2.** in demography, the number of live children born to an individual or within a population. Compare BIRTH RATE; FERTILITY.

**fertilization** *n.* the fusion of a sperm and an egg cell to produce a ZYGOTE. **External fertilization** occurs outside the female's body, as in fish and amphibians. Mammals, birds, and reptiles have **internal fertilization** (i.e., within the body of the female). In humans, fertilization occurs in a FALLOPIAN TUBE.

**FES** abbreviation for FUNCTIONAL ELECTRIC STIMULATION.

**festinating gait** a gait disturbance often seen in individuals with Parkinson's disease, marked by short, shuffling steps that begin slowly but increase in rapidity until the walk becomes a half run. The body leans stiffly forward to maintain balance, and there is an associated risk of falling. Also called **festination: propulsive gait**.

**fetal activity** the activity level of the fetus during intrauterine development, such as kicking or other movements.

**fetal age** see GESTATIONAL AGE.

**fetal alcohol syndrome (FAS)** a group of adverse fetal and infant health effects associated with heavy maternal alcohol intake during pregnancy. It is characterized by low birth weight and retarded growth, craniofacial anomalies (e.g., microcephaly), neurobehavioral problems (e.g., hyperactivity), and cognitive abnormalities (e.g., language acquisition deficits); intellectual disability may be present. Children showing some but not all features of this syndrome are described as having **fetal alcohol effects (FAE)**.

**fetal cephalometry** see CEPHALOMETRY.

**fetal distress** the condition of a fetus whose life or health is threatened, most commonly by an inadequate supply of oxygen via the placenta. Signs of fetal distress include abnormal heart rate, elevated blood acidity, and absence of movement. This term has been criticized as being imprecise and nonspecific; it is recommended that the specific symptoms be described, assessed, and treated. Also called **nonreassuring fetal status**.

**fetal hypoxia** a significant reduction in oxygen to the fetus, which is believed to be a risk factor for severe mental illness, such as schizophrenia.

**fetal infection** any disease that may affect a fetus as a result of an infectious agent transmitted from the mother via the placenta. Fetal infections are usually caused by viruses; other agents may include tuberculosis bacteria, the syphilis spirochete, or the toxoplasmosis protozoa. Rubella

is a common viral fetal infection, resulting in various congenital defects (see CONGENITAL RUBELLA SYNDROME).

**fetal-maternal exchange** the exchange of substances between mother and fetus, via the placenta, during gestation. The fetus is thereby supplied with nutrients and oxygen, and its waste products (e.g., carbon dioxide, urea) are eliminated. Substances of low molecular weight cross the placental barrier easily, but large molecules (e.g., proteins) do not; therefore, the fetus manufactures its own proteins from amino acids supplied by the mother. Some drugs (e.g., alcohol, opioids) as well as disease agents (e.g., the rubella virus) may cross the placental barrier and produce congenital defects.

**fetal monitoring** measurement of the physiological characteristics (e.g., heart rate) of a fetus. Fetal monitoring is used to assess the well-being of the fetus before and during childbirth.

**fetal presentation** the way the fetus is oriented during the birth process, specifically whether or not the fetus is exiting the birth canal head first. If the fetus is oriented so that it will be delivered buttocks first, this is known as a **breech birth** (or **breech presentation**); breech births are associated with risks to mother and baby (see BIRTH INJURY).

**fetal programming** during prenatal development, a fetus's physiological adaptation in utero to changing environmental conditions or stimuli (e.g., maternal stress, poor maternal nutrition, environmental toxins) and the long-term consequences of this adaptation on the child's postnatal development into adulthood. It is believed that the effects of fetal programming may predispose individuals to later health and mental health disorders. See DUTCH HUNGER WINTER.

**fetal response** a response of a fetus to environmental conditions. For example, there is an increase in the fetal heart rate when the mother smokes, and some investigators believe that there is an increase in fetal activity when the mother is undergoing severe emotional stress. See PRENATAL INFLUENCE.

**fetal stage** the final stage of human prenatal development, from the 8th or 9th week after fertilization to the time of birth. It is preceded by the EMBRYONIC STAGE.

**fetal tobacco syndrome (FTS)** a group of adverse fetal and infant health effects associated with maternal smoking during pregnancy. These include low birth weight, retarded growth, premature labor and preterm delivery, miscarriage, increased risk of sudden infant death syndrome, and neurological damage manifested as developmental delay, intellectual deficits, and behavioral problems.

**fetation** *n.* see PREGNANCY.

**feticide** *n.* destruction of the embryo or fetus in the uterus. See also ABORTION.

**fetish** *n.* **1.** a material object (e.g., a shoe, an undergarment, an animal fur or hide) or nonsexual part of the body (e.g., a foot, lock of hair) that arouses sexual interest or excitement. **2.** any object, idea, or behavior that is the focus of irrational devotion or excessive attention, such as punctuality or the pursuit of wealth. **3.** in anthropology, an object, such as a talisman or amulet, that is believed to embody a supernatural spirit or exert magical force.

**fetishism** *n.* a type of PARAPHILIA in which inanimate objects—commonly undergarments, stockings, rubber items,

shoes, or boots—are repeatedly or exclusively used in achieving sexual excitement. Objects designed for use in stimulating the genitals (e.g., vibrators) are not considered to be involved in fetishism. Fetishism occurs primarily among males and may compete or interfere with sexual contact with a partner. See also PARTIALISM. —**fetishistic** *adj.*

**fetoscopy** *n.* a procedure for observing the fetus in which a viewing instrument (**fetoscope**) is passed through a pregnant woman's abdomen and into the amniotic sac.

**fetus** *n.* an animal EMBRYO in the later stages of development. In humans, the fetal period is from the end of the 8th week after fertilization until birth. —**fetal** *adj.*

**fetus at risk (FAR)** a fetus that has a significant chance of being born with a mental or physical disorder because of known influences from the parents or other family members (e.g., a mother with diabetes or hypertension). The risk of a mental disorder in a child born into a family with no history of mental disorder is relatively small, but the risk may be as much as 50% in certain cases, such as when the disorder is a SEX-LINKED recessive trait inherited from the mother's side of the family and the parents are related.

**FFA** abbreviation for fusiform face area. See FUSIFORM GYRUS.

**FFDE** abbreviation for FITNESS FOR DUTY EVALUATION.

**FFFS** abbreviation for fight-flight-freeze system. See REINFORCEMENT SENSITIVITY THEORY.

**FFM** abbreviation for FIVE-FACTOR PERSONALITY MODEL.

**FFS** abbreviation for fight-flight system. See REINFORCEMENT SENSITIVITY THEORY.

**FGM** abbreviation for FEMALE GENITAL MUTILATION.

**FI** abbreviation for fixed interval. See FIXED-INTERVAL SCHEDULE.

**fiat** *n.* in IDEOMOTOR THEORY, the intuitive sense of allowing an action to execute when it is felt to be ready. [from Latin: "let it be done" or "let it happen"; originally defined by William JAMES]

**fibril** *n.* any small anatomical fiber or threadlike structure.

**fibrillation** *n.* an involuntary contraction of muscle due to unprompted activation of muscle cells or fibers with damaged source nerves, especially the rapid, abnormal contraction of individual muscle fibers of the heart.

**fibromyalgia** *n.* a syndrome of uncertain origin that is characterized by widespread musculoskeletal pain and chronic fatigue. Pain may be triggered by pressure on numerous tender points on the body. Other commonly associated symptoms are muscle stiffness, headaches, sleep disturbance, and depression. Symptoms overlap with those of CHRONIC FATIGUE SYNDROME, and fibromyalgia often occurs simultaneously with other disorders, such as irritable bowel syndrome and migraine. The condition was formerly called **fibromyositis-fibromyalgia syndrome**. See also CHRONIC MYOFASCIAL PAIN.

**fiction** *n.* **1.** in psychology, an unproven or imaginary concept that may be accepted by an individual as if it were true for pragmatic reasons. See ALS OB; AS-IF HYPOTHESIS. **2.** see GUIDING FICTION. —**fictional** *adj.*

**fictional finalism** in the psychoanalytic theory of Alfred ADLER, the belief that human beings are more strongly



motivated by the goals and ideals—realizable or unattainable—that they create for themselves and more influenced by future possibilities than by past events such as childhood experiences. This is in strong contrast to the emphasis of classical Freudian psychoanalytic theory. See also GUIDING FICTION; INDIVIDUAL PSYCHOLOGY.

**fidelity** *n.* **1.** faithfulness to a person, group, belief, or the like. **2.** the degree of accuracy of a measuring instrument or STATISTICAL MODEL. For example, a representation derived from STRUCTURAL EQUATION MODELING that depicts a pattern of relationships between health attitudes and behaviors could be said to have fidelity if it accurately explains the VARIATION and COVARIATION in the data. **3.** the degree of accuracy of sound or visual reproduction in an electronic device (e.g., a sound system, television).

**fidgetiness** *n.* a state of increased motor activity, which is associated with anxiety, tics, chorea, or boredom.

**fiduciary** **1.** *adj.* describing a relationship in which one person holds a position of trust in relation to another and is required to apply his or her skill and effort in the best interests of that other. A psychologist and client have a fiduciary relationship in that the psychologist is assumed to place the welfare and best interests of the client above all else. **2.** *n.* a person who holds a position of trust in a fiduciary relationship.

**field** *n.* **1.** a defined area or region of space, such as the VISUAL FIELD. **2.** a complex of personal, physical, and social factors within which a psychological event takes place. See FIELD THEORY. **3.** an area of human activity or knowledge or a division of such an area. **4.** somewhere other than a laboratory, library, or academic setting in which experimental work is carried out or data collected. See FIELD EXPERIMENT.

**field defect** see VISUAL FIELD DEFECT.

**field dependence** a COGNITIVE STYLE in which the individual consistently relies more on external referents (environmental cues) than on internal referents (bodily sensation cues). The opposite tendency is FIELD INDEPENDENCE. Discovered during experiments conducted in the 1950s to understand the factors that determine perception of the upright in space, field dependence–independence typically is measured using the ROD-AND-FRAME TEST or EMBEDDED FIGURES TEST.

**field experiment** a study that is conducted outside the laboratory in a “real-world” setting. Participants are exposed to one of two or more levels of an INDEPENDENT VARIABLE and observed for their reactions; they are likely to be unaware of the research. Such research often is conducted without RANDOM SELECTION or RANDOM ASSIGNMENT of participants to conditions and without deliberate experimental manipulation of the independent variable by the researcher. See FIELD RESEARCH; QUASI-EXPERIMENTAL RESEARCH.

**field independence** a COGNITIVE STYLE in which the individual consistently relies more on internal referents (bodily sensation cues) than on external referents (environmental cues). Field-independent people tend to be able to disregard deceptive environmental cues, particularly in tasks requiring the performance of simple actions or the identification of familiar elements in unfamiliar contexts. Compare FIELD DEPENDENCE.

**field memory** an autobiographical memory that one remembers from a first-person perspective; that is, one re-

members the event as if viewing it with one's own eyes. Also called **first-person perspective memory**. Compare OBSERVER MEMORY.

**field notes** notes on observations made in natural settings (i.e., the field) rather than in laboratories. Field notes comprise the data for subsequent analysis in FIELD EXPERIMENTS and FIELD RESEARCH.

**field of consciousness** the total awareness of an individual at a given time. See CONSCIOUSNESS.

**field of regard** the total space and all the objects within that space that can be seen at one time by the moving eye.

**field research** studies conducted outside the laboratory, in a “real-world” setting, which typically involve observing or interacting with participants in their typical environments over an extended period of time. Field research has the advantages of ECOLOGICAL VALIDITY and the opportunity to understand how and why behavior occurs in a natural social environment; it has the disadvantages of loss of environmental control and ability to do precise experimental manipulations. Thus, field research is often said to have more EXTERNAL VALIDITY and less INTERNAL VALIDITY than laboratory-based research. In studies of the behavior of nonhuman animals, field research stands in contrast to studies conducted on animals in CAPTIVITY. See also FIELD EXPERIMENT.

**field survey** an assessment that involves collecting information on specific individuals or entities, usually in their natural environment. For example, a field survey could be conducted on a sample of students from underrepresented groups to assess their attitudes, experience, and performance regarding quantitative methods, before providing an intervention to increase their quantitative reasoning. See also FIELD RESEARCH.

**field theory** **1.** in psychology, a systematic approach describing behavior in terms of patterns of dynamic interrelationships between individuals and the psychological, social, and physical situation in which they exist. This situation is known as the **field space** or LIFE SPACE, and the dynamic interactions are conceived as forces with positive or negative VALENCES. [proposed by Kurt LEWIN] **2.** in physics, the theory that forces acting at a distance between bodies not in contact do so by means of a field of force that fills the space between them. See ACTION AT A DISTANCE.

**field theory of personality** a theory in which personality is understood in terms of dynamic interrelations among a field of intrapsychic forces. [devised by Kurt LEWIN]

**field work** **1.** a less common name for FIELD RESEARCH. **2.** in clinical practice education, a practicum in which the student supplements and applies classroom theory by taking responsibility for actual cases under the tutelage of experienced, qualified supervisors.

**fifth cranial nerve** see TRIGEMINAL NERVE.

**fight–flight–freeze system** (FFFS) see REINFORCEMENT SENSITIVITY THEORY.

**fight–flight system** (FFS) see REINFORCEMENT SENSITIVITY THEORY.

**fighting** *n.* direct physical aggression between two individuals. In nonhuman animals, much aggression can be communicated through THREAT DISPLAYS and SUBMISSIVE SIGNALS; fighting typically occurs only when signals alone do not resolve the encounter.

**fight-or-flight response** a pattern of physiological changes elicited by activity of the SYMPATHETIC NERVOUS SYSTEM in response to threatening or otherwise stressful situations that leads to mobilization of energy for physical activity (e.g., attacking or avoiding the offending stimulus), either directly or by inhibiting physiological activity that does not contribute to energy mobilization. Specific sympathetic responses involved in the response include increased heart rate, respiratory rate, and sweat gland activity; elevated blood pressure; decreased digestive activity; pupil dilation; and a routing of blood flow to skeletal muscles. In some theories, such changes are the basis of all human emotions. Also called **emergency reaction**; **emergency syndrome**. See also CANNON-BARD THEORY. [first described by Walter B. CANNON]

**figural aftereffect** a gestalt-type perceptual phenomenon in which the perceived location or shape properties of an object may be influenced by prolonged viewing of that or another object.

**figural cohesion** the tendency for parts of a figure to be perceived as a whole figure even if the parts are disjointed.

**figural fluency test** see DESIGN FLUENCY TEST.

**figural synthesis** the creation of a meaningful figure from the synthesis of selected portions of the incoming stimulus input. [proposed in 1967 by Ulric NEISSER]

**figurative knowledge** knowledge about static things, acquired by attending to and remembering specific factual information or perceptual details (e.g., vocabulary words, dates, colors, shapes). Compare OPERATIVE KNOWLEDGE. [first described by Jean PIAGET]

**figurative language** language in which meaning is extended by analogy, metaphor, or personification or emphasized by such devices as antithesis, alliteration, and so forth. Figurative language is most important in poetry and rhetoric but extends into almost all areas of language use.

**figure** *n.* a graph, drawing, or other depiction used to convey the essential findings from a research study. Common figures used in psychological research include BAR GRAPHS, which show the frequency of endorsement for several categories (e.g., the number of individuals who have various diseases), and VENN DIAGRAMS, which use overlapping circles to show how much shared variance there is between two or more variables.

**figure-drawing test** any test in which the participant draws a human figure, used as a measure of intellectual development or as a projective technique. See MACHOVER DRAW-A-PERSON TEST.

**figure-ground** *adj.* relating to the principle that perceptions have two parts: a figure or object that stands out in good contour and an indistinct, homogeneous background.

**figure-ground distortion** the interference of an object's background with the perception of the object itself, rendering the viewer unable to focus on the object.

**file-drawer analysis** a statistical procedure for addressing the FILE-DRAWER PROBLEM by computing the number of unretrieved studies, averaging an EFFECT SIZE of .00, that would have to exist in file drawers before the overall results of a META-ANALYSIS would become nonsignificant at  $p > .05$ , that is, would exceed an acceptable probability level (.05) of occurring by chance. A small computed value indicates a weak finding that may just be due to chance. Con-

versely, a large value suggests that the finding is rather robust, as it would take a large number of nonsignificant findings to provide enough evidence to refute the results.

**file-drawer problem** the fact that a large proportion of all studies actually conducted are not available for review because they remain unpublished in "file drawers," having failed to obtain positive results. Thus, the results of a meta-analysis may not yield reliable EFFECT SIZE estimates since only studies that have been published or otherwise are widely available to researchers can be included in the analysis. See FILE-DRAWER ANALYSIS.

**filial anxiety** fear and apprehension in children caused by their relationships with their parents, often in anticipation of caregiving responsibility by adult children of older parents.

**filial generation** any of the successive generations of descent from an original parental generation. The immediate descendants of the initial parents are the first filial generation (denoted  $F_1$ ), their descendants are the second filial generation (denoted  $F_2$ ), and so on.

**filial imprinting** a process in which a young animal develops a strong bond with and learns to recognize its parent (see IMPRINTING).

**filial maturity** a mutual caring relationship between adult children and older parents, involving an understanding of each other's needs, responsibilities, and desires. [proposed by U.S. social worker Margaret Blenkner (1909–1973)]

**filial responsibility** a sense of duty toward family members, with particular reference to child–parent obligations. Also called **filial duty**.

**filicide** *n.* the intentional killing of one's children, a very rare event that is sometimes associated with severe major depressive disorder or certain psychotic disorders. Cultural and socioeconomic factors may also contribute.

**filiform papillae** the most common of the four types of PAPILLAE, covering most of the surface of the human tongue and giving that organ its rough surface. They have no TASTE BUDS and are not involved in gustation.

**filled-space illusion** a source of distortion in estimating distance: Estimates increase as a linear function of the number of intervening points (as on a map).

**fill-in questions** a testing method in which students are provided with incomplete sentences relating to concepts or terms and are required to supply the missing words or phrases.

**film color** a filmlike, texture-free soft color that lacks localization, as contrasted with the color of a surface, which is an example of OBJECT COLOR.

**filopodium** *n.* (*pl.* **filopodia**) a very fine, tubular outgrowth from a cell, for example, from the GROWTH CONE of a neuron.

**filter** *n.* **1.** a device or material that allows some elements of a mixture (e.g., of light, a liquid, or a gas) to pass through but not others. In acoustics, a **low-pass filter** passes all components below a specified cut-off frequency while attenuating higher frequencies, thus altering the amplitude spectrum of the input; a **high-pass filter** performs the opposite spectral alteration. A **bandpass filter** transmits the range of frequencies (**passband**) lying between specified high-pass and low-pass cut-off frequencies.

**2.** a hypothetical construct applied to cognitive channels of information that allow only certain aspects of a stimulus to pass into sensory consciousness. Filter metaphors aim to explain the ability to focus selectively on local and precise aspects of the environment (e.g., a conversation in a noisy room). **3.** any analytical procedure used in TIME-SERIES ANALYSIS to remove fluctuations from the data and separate out its trend and cyclical components.

**filtered speech** words that have been filtered to allow only specific frequency bands to pass through. Filtered speech is presented to the ear at a comfortably loud level to measure auditory processing abilities. See also DISTORTED SPEECH TEST.

**filter theory 1.** an early theory of attention proposing that unattended channels of information are filtered prior to identification. This theory continues to be influential in the form of its successor, the ATTENUATION THEORY. See also EARLY-SELECTION THEORY. [proposed in 1958 by Donald E. BROADBENT] **2.** any explanation of MATE SELECTION that postulates a series of steps that rule out more and more potential mates until only one is left.

**FIM** abbreviation for FUNCTIONAL INDEPENDENCE MEASURE.

**fimbria** *n.* (*pl.* **fimbriae**) **1.** a structure that resembles a fringe. **2.** the band of WHITE MATTER along the medial edge of the ventricular surface of the HIPPOCAMPUS. Also called **fimbria hippocampi**.

**final cause** see CAUSE.

**final common path** see MOTOR NEURON.

**final free recall** an unexpected test of memory given at the end of a memory assessment session, asking the individual to recall all of the materials that were studied and tested in the session.

**finasteride** *n.* see ANTIANDROGEN.

**fine motor** describing activities or skills that require coordination of small muscles to control small, precise movements, particularly in the hands and face. Examples of **fine motor skills** include handwriting, drawing, cutting, and manipulating small objects. Compare GROSS MOTOR.

**fine tremor** see TREMOR.

**finger agnosia** see TACTILE AGNOSIA.

**Finger Localization Test** a 60-item NEUROPSYCHOLOGICAL TEST consisting of three parts: (a) The participant is asked to identify which finger is touched by the examiner; (b) the participant is blindfolded or otherwise prevented from using vision and then asked to identify which finger is touched; and (c) the participant again is blindfolded or otherwise prevented from using vision and then asked to identify which two fingers are simultaneously touched. Each hand is tested in each part of the test, which is scored for the number of correct identifications. It currently appears in a variety of forms and as part of several neuropsychological test batteries. Also called **Tactile Finger Recognition**. [originally developed in 1983 by Arthur L. BENTON and colleagues]

**Finger Oscillation Test** see FINGER TAPPING TEST.

**fingerspelling** *n.* the representation of the letters of the alphabet by shapes formed with the hand. Fingerspelling is used in conjunction with SIGN LANGUAGE to spell names and other words for which conventional signs do not exist. Many different manual alphabets are available, including the one-handed **American Manual Alphabet**, which is used

in the United States and Canada, and the two-handed **British Manual Alphabet**, used in Great Britain, Australia, and New Zealand, each specifying distinct shapes for the different letters.

**Finger Tapping Test** a measure of fine motor speed in which the individual taps an index finger as quickly as possible against a response key. The test is part of the HALSTEAD-REITAN NEUROPSYCHOLOGICAL BATTERY. It was originally called the **Finger Oscillation Test**.

**finite-state grammar** a simple model of GENERATIVE GRAMMAR discussed by Noam CHOMSKY in his *Syntactic Structures* (1957). In this model, it is supposed that the grammar generates sentences one unit at a time in strict linear sequence (i.e., working from left to right); once the first unit has been selected, the choice of subsequent units will be circumscribed at each stage by the sum of the previous choices. Chomsky presented this model, with its obvious inadequacy as an account of sentence generation, to demonstrate the need for the more complex explanations provided by PHRASE-STRUCTURE GRAMMAR and especially by TRANSFORMATIONAL GENERATIVE GRAMMAR. Psychological interest in finite-state grammar stems largely from its similarity to certain principles of BEHAVIORISM and OPERATIONALISM.

**FINST theory** a theory of VISUAL ATTENTION that posits a preconceptual mechanism by which a small number of items in the visual field (usually about four) are “indexed”—that is, marked out as discrete—so that they can be accessed by higher order cognitive functions at subsequent stages of processing. The name is a contraction of *fingers of instantiation*: The visual indexes are proposed to aid orientation and tracking in a manner analogous to physical fingers. Also called **visual indexing theory**. [proposed in 1989 by Canadian cognitive scientist and philosopher Zenon W. Pylyshyn (1937– )]

**fire-setting behavior** a tendency to set fires. In young children, the behavior is often associated with curiosity and a lack of understanding of the consequences. In older children and adults, it is associated with a variety of disorders, such as conduct disorder, schizophrenia, and antisocial personality disorder. See also PYROMANIA.

**FIRO-B** abbreviation for FUNDAMENTAL INTERPERSONAL RELATIONS ORIENTATION-BEHAVIOR SCALE.

**FIRO theory** acronym for FUNDAMENTAL INTERPERSONAL RELATIONS ORIENTATION THEORY.

**first admission** a patient admitted for the first time to a mental institution.

**first cranial nerve** see OLFACTORY NERVE.

**first-degree relative** a parent, sibling, son, or daughter. Compare SECOND-DEGREE RELATIVE.

**first-episode schizophrenia** the first time that the criteria for a diagnosis of schizophrenia are met in an individual. First episodes are considered to be a critically important period during which prompt management of symptoms through drug treatment and psychosocial intervention can improve the course of the illness and mitigate its long-term impact on the individual.

**first-generation antipsychotic** see ANTIPSYCHOTIC.

**first impression** one's initial perception of another person, typically involving a positive or negative evaluation as well as a sense of physical and psychological characteristics. Such impressions are based on the earliest information

received about a person, often through a direct encounter, and tend to persist, even in the face of later information that outside observers would consider inconsistent with the initial perception. That is, there is a **PRIMACY EFFECT** in the impression formation. Some theoretical analyses account for this effect by holding that the first received information is given greater weight in the perceiver's mind than is the later information; others propose that the initial information shapes the meaning subsequently given to the later information.

**first-impression bias** see **PRIMACY EFFECT**.

**first-line medication** a drug that is the first choice for treating a particular condition because it is considered a very effective treatment for that condition with the least likelihood of causing side effects. A first-line medication may be a class of drugs (e.g., SSRIs for depression) as well as a single drug.

**first moment** see **MOMENT**.

**first-order factor** in **FACTOR ANALYSIS**, any of the **LATENT VARIABLES** (factors) that are derived from the **CORRELATION** (or covariance) among the **MANIFEST VARIABLES**, as opposed to **SECOND-ORDER FACTORS**, which are determined from the correlation (or covariance) among the factors. Also called **primary factor**.

**first-order interaction** an effect in which the pattern of values on one variable changes depending on the combination of values on two other variables. For example, an analysis could reveal that although gender and teaching style may each have some effect on performance, the specific degree or amount of the performance effect changes depending on the particular combination of gender and teaching method. Thus, male students may show moderately high performance regardless of teaching style, whereas female students may show high performance with a hands-on teaching style and low to moderate performance with a lecture teaching style. See also **HIGHER ORDER INTERACTION**.

**first-order neuron** the first neuron in a chain or tract of neurons. For example, in the somatosensory system, a first-order neuron receives peripheral input (e.g., sensations from the skin) and transmits it to the spinal cord. See also **SECOND-ORDER NEURON**.

**first-person perspective** the subjective point of view of a particular individual. Compare **SECOND-PERSON PERSPECTIVE**; **THIRD-PERSON PERSPECTIVE**.

**first-person perspective memory** see **FIELD MEMORY**.

**first quartile** see **QUARTILE**.

**first-rank symptoms** symptoms originally proposed by German psychiatrist Kurt Schneider (1887–1967) for the differential diagnosis of schizophrenia. They are audible thoughts; hearing voices arguing or commenting on one's actions; thought withdrawal, diffusion, and other disturbances; delusional perceptions; somatic passivity (experiencing external forces as influencing or controlling one's body); and other external impositions on feelings, inputs, and actions. It is now known that these symptoms can also occur in other psychotic disorders, in mood disorders, and in neurological disorders. Compare **SECOND-RANK SYMPTOMS**.

**first sleep** see **SEGMENTED SLEEP**.

**fishbowl technique** a procedure used in a **GROWTH GROUP** in which participants form two concentric circles.

The individuals in the inner group (the **fishbowl**) engage in a discussion or other form of interaction while the members in the outer group observe. When the interaction has concluded, the outer group provides information and feedback to the inner group. Later, the groups may exchange places and repeat the exercise.

**Fisher exact test** a statistical procedure to determine whether two **CATEGORICAL** variables are related. Appropriate for small samples, it examines the associations between the rows and columns of data in a fourfold ( $2 \times 2$ ) **CONTINGENCY TABLE**. For example, the Fisher exact test could be used to assess whether there is a relationship between gender (male or female) and pizza topping preference (cheese or multitopping) in a group of 20 individuals. [Ronald Aylmer FISHER]

**Fisher least significant difference test** a statistical procedure to compare pairs of means, conducted after an **F TEST** has revealed that at least one pair of means is significantly different. The test calculates the smallest value that would be significantly different from chance when subtracting one mean from another mean. If the absolute value of the actual difference between a pair of means is larger than this **least significant difference (LSD)**, a researcher can reject a **NULL HYPOTHESIS** that the means are equal and conclude that they are significantly different. Also called **protected t test**. [Ronald Aylmer FISHER]

**Fisher's *r* to *z* transformation** a statistical procedure that converts a Pearson **PRODUCT-MOMENT CORRELATION COEFFICIENT** to a standardized **Z SCORE** in order to assess whether the correlation is significantly different from zero. The test is useful in providing a normally distributed statistic (called the **Fisher transformed value** or **Fisher's *z***) that can be used in **HYPOTHESIS TESTING** or in forming a **CONFIDENCE INTERVAL**. Also called **Fisher transformation**; **Fisher *z* transformation**; ***z* transformation**. [Ronald Aylmer FISHER]

**fission** *n.* 1. in biology, the reproduction of a cell or unicellular organism by splitting into two independent parts. 2. in audition, the separation of two simultaneous sounds into separate perceptual **streams** or **auditory objects**. When two streams are perceived as one, **AUDITORY FUSION** is said to occur (see also **FUSION**).

**fissure** *n.* a cleft, groove, or indentation in a surface, especially any of the deep grooves in the cerebral cortex. See also **SULCUS**.

**fissure of Rolando** see **CENTRAL SULCUS**. [Luigi Rolando (1773–1831), Italian anatomist]

**fissure of Sylvius** see **LATERAL SULCUS**. [Franciscus Sylvius (1614–1672), Dutch physician and anatomist]

**fistula** *n.* an abnormal passageway between two internal organs or between an internal organ and the outside of the body. A fistula may develop as a result of an injury or infection, as a congenital defect, or as a result of a surgical procedure. Sexual violence may result in **traumatic fistula** (or **traumatic gynecologic fistula**).

**fit** 1. *n.* the degree to which values predicted by a model correspond with empirically observed values. For example, in **STRUCTURAL EQUATION MODELING**, a researcher may want to see how well his or her hypothesized model of the relationships among a set of variables actually fits the **VARIATION** and **COVARIATION** in the data. 2. *n.* a lay term for an epileptic seizure. 3. *n.* a colloquial name for an emotional outburst. 4. *adj.* see **FITNESS**.

**FIT** abbreviation for FEATURE-INTEGRATION THEORY.

**fit index** a quantitative measure of how well a statistical model corresponds to the VARIATION and COVARIATION in a set of data. An index value greater than .90 (or preferably .95) indicates a model that explains the pattern of relationships in the data reasonably well. If the fit of a model is poor, then the model needs to be respecified and then reanalyzed. See GOODNESS OF FIT.

**fitness** *n.* **1.** a set of attributes that people have or are able to achieve relating to their ability to perform physical work and to carry out daily tasks with vigor and alertness, without undue fatigue, and with ample energy to enjoy leisure pursuits. **2.** in biology, the extent to which an organism or population is able to produce viable offspring in a given environment or ECOLOGICAL NICHE, which is a measure of that organism's or population's adaptation to that environment. Compare UNFITNESS. See DARWINIAN FITNESS; INCLUSIVE FITNESS; REPRODUCTIVE SUCCESS. —*fit adj.*

**fitness for duty evaluation (FFDE)** a psychological assessment of an employee's present mental state and functioning, used to estimate the employee's future functioning and determine whether that individual is able to safely and effectively perform his or her job duties. An FFDE is also used to determine if mental illness or emotional stress experienced by a person has interfered with his or her job performance. It is routinely conducted on police officers after they have had a traumatic experience in the line of duty. Also called **fit for duty evaluation**.

**Fit to Win Health Promotion Program** a U.S. Department of Defense educational program designed to promote health in Army personnel by reducing behavioral risk factors, such as smoking, excessive alcohol intake, and overconsumption of fatty foods.

**Fitts movement task** a motor-skills test that illustrates the relationship between speed and accuracy of movement. If a participant is asked to tap a pencil 20 times within the outline of a circle (the discrete version of the test), more pencil marks will fall outside the circle when the participant is asked to do the task quickly than when urged to be accurate. If a participant is asked to tap a pencil 20 times alternating between two circular outlines a fixed distance apart (the continuous version), accuracy will be similarly decreased. In current practice, the discrete version is almost always used in basic research, because the modeling issues are more straightforward, and the continuous version is usually used in neuropsychological testing and other more applied settings. The relationship between speed and accuracy for movement is formalized as FITTS'S LAW. [Paul Morris Fitts (1912–1965), U.S. psychologist]

**Fitts's law** the principle of motor control that activities that are performed more quickly tend to be done less accurately (see SPEED–ACCURACY TRADEOFF). It is formulated as  $MT = a + b f(DW)$ , observed under a wide array of conditions to relate movement time (MT) linearly to a function  $f(DW)$  of the ratio of movement distance ( $D$ ) and target size ( $W$ ). [Paul Morris Fitts]

**five-factor personality model (FFM)** a model of personality in which five dimensions of individual differences—EXTRAVERSION, NEUROTICISM, CONSCIENTIOUSNESS, AGREEABLENESS, and OPENNESS TO EXPERIENCE—are viewed as core personality structures. Unlike the BIG FIVE PERSONALITY MODEL, which views the five personality dimensions as descriptions of behavior and treats the five-dimensional structure as a taxonomy of individual differences, the FFM

views the factors as psychological entities with causal force. The two models are frequently and incorrectly conflated in the scientific literature, without regard for their distinctly different emphases. [proposed by U.S. psychologists Robert R. McCrae (1949– ) and Paul T. Costa Jr. (1942– )]

**five-number summary** in EXPLORATORY DATA ANALYSIS, the characterization of a data set through the use of five summary statistics: the two extreme scores, the upper and lower QUANTILES, and the MEDIAN or middle quartile. For example, suppose the scores on a test are 100, 93, 90, 82, 76, 72, 64, 61, 60, and 47. The five-number summary from highest to lowest numbers would be 100, 90, 74, 61, and 47—that is, 100 is the highest extreme score, 90 is the highest quartile (the midpoint in the top half of the data), 74 is the middle point, 61 is the lowest quartile (the midpoint in the bottom half of the data), and 47 is the lowest extreme score. These values provide the basic highlights of a set of data and can be used to create a BOX-AND-WHISKER PLOT.

**five-to-seven shift** the striking progress in children's cognitive development between the ages of 5 and 7, when very significant advances in such areas as reasoning and logic, linguistic ability, memory, and problem solving occur. [introduced in 1965 by Sheldon H. WHITE]

**fixation** *n.* **1.** an obsessive preoccupation with a single idea, impulse, or aim, as in an IDÉE FIXE. **2.** a shortened name for VISUAL FIXATION. **3.** in psychoanalytic theory, the persistence of an early stage of PSYCHOSEXUAL DEVELOPMENT or the inappropriate attachment to an early psychosexual object or mode of gratification, such as anal or oral activity; this fixation limits the person's ability to negotiate the tasks of later psychosexual stages. —*fixate vb.*

**fixation pause** a period during which the eyes are focused directly on an object.

**fixation point** the point in space on which the eyes are focused. In experimental studies of visual perception, a specific fixation point is often provided while vision is tested in some other location in the visual field.

**fixation reflex** a reflexive orienting of the eyes to maintain fixation on a target. It involves cortical and subcortical regions. Also called **fixation response**. See OPTOKINETIC REFLEX; VESTIBULO-OCULAR REFLEX.

**fixed action pattern (FAP)** in classical ethology, a stereotyped, genetically preprogrammed, species-specific behavioral sequence that is evoked by a RELEASER stimulus and is carried out without sensory feedback. In contemporary ethology, the term MODAL ACTION PATTERN is more often used.

**fixed-alternative question** a test or survey item in which several possible responses are given and participants are asked to pick the correct response or the one that best matches their preference. An example of a fixed-alternative question is "Which of the following most closely corresponds to your age: 12 or younger, 13 to 19, 20 to 39, 40 to 59, 60 to 79, or 80 or older?" A fixed-alternative question is sometimes referred to as a **closed question**, although this can also refer to any inquiry requesting a short definite answer (e.g., "How old are you?"). Also called **fixed-choice question**; **forced-choice question**; **multiple-choice question**. Compare FREE-RESPONSE QUESTION; OPEN QUESTION.

**fixed belief** see IDÉE FIXE.

**fixed class society** a society with very little or no SOCIAL MOBILITY, as in the Hindu CASTE system. Compare OPEN CLASS SOCIETY.

**fixed effect** an INDEPENDENT VARIABLE whose levels are specified by the researcher rather than randomly chosen within some level of permissible values. For example, a health researcher who specifically chose to examine the effect on weight loss of no exercise, 1 hour of exercise, or 3 hours of exercise per week would be treating time spent exercising as a fixed effect. In other words, all levels of interest are included in the design, and thus anyone wanting to replicate the study would have to use the same levels of exercise as in the original. Also called **fixed factor**. See FIXED-EFFECTS MODEL; RANDOM-EFFECTS MODEL. Compare RANDOM EFFECT.

**fixed-effects analysis of variance** a statistical procedure to determine whether means for an outcome or DEPENDENT VARIABLE differ across a specific set of conditions (i.e., levels of the INDEPENDENT VARIABLE) that have been selected by a researcher. This is contrasted with a RANDOM-EFFECTS ANALYSIS OF VARIANCE, in which the conditions have been randomly selected from a wide range of possible choices before any mean differences are examined.

**fixed-effects model** any statistical procedure or experimental design that uses independent variables whose levels are specifically selected by the researcher for study rather than randomly chosen from a wide range of possible values. For example, a researcher may wish to investigate the effects of the available dosages of a certain drug on symptom alleviation. Fixed-effects models generally are intended to make inferences solely about the specific levels of the independent variables actually used in the experiment. Compare MIXED-EFFECTS MODEL; RANDOM-EFFECTS MODEL.

**fixed factor** see FIXED EFFECT.

**fixed idea** see IDÉE FIXE.

**fixed-interval schedule (FI schedule)** in conditioning, an arrangement, formerly known as **periodic reinforcement**, in which the first response that occurs after a set interval has elapsed is reinforced. For example, "FI 3 min" means that reinforcement is given to the first response occurring at least 3 minutes after a previous reinforcement. Often, experience with FI schedules results in a temporal pattern of responding, characterized by little or no responding at the beginning of the interval, followed by an increased rate later on as reinforcement becomes more imminent. This pattern is often referred to as the **fixed-interval scallop**.

**fixedness** *n.* in problem solving, see FUNCTIONAL FIXEDNESS.

**fixed parameter** a specific value assigned (as opposed to estimated) by a researcher when testing a statistical model. For example, in STRUCTURAL EQUATION MODELING, researchers may use a fixed parameter of 1.0 for one of the FACTOR LOADINGS or variances of each LATENT VARIABLE in a model. Compare FREE PARAMETER.

**fixed-ratio schedule (FR schedule)** in conditioning, an arrangement in which reinforcement is given after a specified number of responses. "FR 1" means that reinforcement is given after each response; "FR 50" means that reinforcement is given after every 50 responses; and so on.

**fixed-time schedule (FT schedule)** in conditioning,

an arrangement in which reinforcers are delivered at fixed time intervals independent of the organism's behavior.

**fixed variable** a variable whose value is specified by a researcher or otherwise predetermined and not the result of chance. Compare RANDOM VARIABLE.

**FJA** abbreviation for FUNCTIONAL JOB ANALYSIS.

**flaccid paralysis** a condition resulting from damage to lower MOTOR NEURONS and marked by loss of muscle tone and absence of TENDON REFLEXES. Compare SPASTIC PARALYSIS.

**flagellation** *n.* whipping another person or oneself or submitting to whipping. Flagellation may be a form of penitence (as a religious ritual) or a means of achieving sexual excitement. Flagellation is a common practice among those who engage in BONDAGE AND DISCIPLINE. Also called **flagellantism**.

**flanker task** a task in which stimuli are assigned one of two responses and the participant is required to respond to the target stimulus when this is flanked by other stimuli. The stimuli are presented at a known location (usually at fixation), and the flanking stimuli are associated with a response that is either the same as or different from that assigned to the target. Reaction time is slower if the stimuli flanking the target are assigned the alternative response than if they are assigned the same response as the target. This is known as the **flanker compatibility effect**. Also called **Eriksen flankers task**. [devised by U.S. psychologist Charles W. Eriksen (1923– )]

**flapping tremor** see ASTERIXIS.

**flashback** *n.* **1.** the reliving of a traumatic event after at least some initial adjustment to the trauma appears to have been made. Memories may be triggered by words, sounds, smells, or scenes that are reminiscent of the original trauma (as in a backfiring car triggering a flashback to being in combat). Flashbacks may be associated with post-traumatic stress disorder. **2.** the spontaneous recurrence of the perceptual distortions and disorientation to time and place experienced during a previous period of hallucinogen intoxication. Flashbacks may occur months or even years after the last use of the drug and are associated particularly with LSD.

**flashbulb memory** a vivid, enduring memory associated with a personally significant and emotional event, often including such details as where the individual was or what he or she was doing at the time of the event. People often believe that such memories have the quality of a photograph taken at the moment they experienced the event, and they believe with high confidence that these memories are accurate. However, recent research has shown that although flashbulb memories are more likely to be retained than the memory of an everyday event, they are not always accurate. [first described in 1977 by U.S. psychologists Roger BROWN and James Kulik (1940– ) in their study of people's recollection of public events, such as U.S. President John F. Kennedy's assassination]

**flash card** one of a series of small pieces of cardboard or paper with questions and answers written or printed on them, used as a learning aid. Often, a question is on the front of the flash card and the answer is on the back. A student reads the question, gives an answer, and then is able to turn the card over to see the correct answer. Flash cards are commonly used in rapid succession and aid memorization of a fact or concept.

**flat affect** total or near absence of appropriate emotional responses to situations and events. See also SHALLOW AFFECT.

**flat organizational structure** an organization in which there are relatively few levels of management.

**flavor** *n.* a sensation produced by a combination of aroma, taste, texture, and temperature and involving olfactory, gustatory, and tactile sense organs.

**flehmen** *n.* a distinctive posture of nonhuman animals in which the head is raised and lips curled (from German, “to bare the upper teeth”), often accompanied by a snort or deep inhalation of air. Flehmen serves to deliver chemical cues to the VOMERONASAL SYSTEM, an accessory olfactory organ that appears specialized to process species-specific olfactory cues. Flehmen is often seen in male ungulates inspecting female urine to determine if the female is in ESTRUS.

**Flesch index** a system used for evaluating readability and reading level of a document by examining word and sentence length, vocabulary, and phrases. [Rudolph Flesch (1911–1986), U.S. philologist and psychologist]

**Flexeril** *n.* a trade name for CYCLOBENZAPRINE.

**flexibilitas cerea** see CATALEPSY.

**flexible correction model** a theory postulating that corrections to bias in judgments occur when people are motivated and able to adjust their assessments of targets according to their naive theories of how the context influences their judgments. This may result in either ASSIMILATION or CONTRAST effects depending on their perceptions of the magnitude and direction of bias. See also INCLUSION/EXCLUSION MODEL; SET/RESET MODEL. [proposed by U.S. social psychologists Duane T. Wegener (1966– ) and Richard E. Petty (1951– )]

**flexion** *n.* the bending of a joint in a limb (e.g., the elbow joint) so that two parts of the limb (e.g., the forearm and upper arm) are brought toward each other.

**flexion reflex** the abrupt withdrawal of a limb in response to painful stimulation. Compare EXTENSION REFLEX.

**flexor** *n.* a muscle whose contraction bends a part of the body, such as the biceps muscle of the upper arm. Compare EXTENSOR.

**flextime** *n.* an arrangement that gives employees a certain amount of discretion over when they arrive at and leave work, provided that an agreed period of **core hours** is spent in the workplace. Flextime allows workers to adjust their work schedules to nonwork demands, such as parental responsibilities. Also called **flexitime**.

**flicker discrimination** the ability to perceive a change in brightness of a light source. The ability varies with the frequency of alternating changes in brightness until CRITICAL FLICKER FREQUENCY is reached, when the observer sees an apparently steady level of brightness.

**flicker fusion frequency** see CRITICAL FLICKER FREQUENCY.

**flicker stimulus** a periodically changing visual or auditory stimulus that produces a rapidly alternating sensation.

**flight** *n.* **1.** a form of LOCOMOTION that allows some animals (notably birds, bats, and insects) to become airborne and travel varying distances. It has several forms: active

flight, gliding, and hovering. Bones of flying vertebrates must be light and rigid. Flight is used for escaping danger, locating food, and migrating from one location to another as seasons change (see MIGRATION). **2.** rapid departure as a means of escape from danger, whether by flying or some other form of locomotion. See also FIGHT-OR-FLIGHT RESPONSE.

**flight from reality** a defensive reaction involving withdrawal into inactivity, detachment, or fantasy as an unconscious defense against anxiety-provoking situations. This may be expressed as a number of defensive behaviors, such as RATIONALIZATION, daydreaming, or substance abuse. It may include a retreat into psychotic behavior as a means of avoiding real or imagined problems. Also called **retreat from reality**. See also ESCAPE FROM REALITY. Compare FLIGHT INTO FANTASY; FLIGHT INTO REALITY.

**flight into disease** see FLIGHT INTO ILLNESS.

**flight into fantasy** a defensive reaction in which individuals experiencing disturbing thoughts and impulses retreat into fantasy (e.g., through DAYDREAMS) as a means of avoiding harming themselves or others by acting on these impulses. In this way, they can maintain control over their impulses. Compare FLIGHT FROM REALITY; FLIGHT INTO REALITY.

**flight into health** in psychotherapy, an abrupt “recuperation” by a prospective client after or during intake interviews and before entry into therapy proper or, more commonly, by a client in ongoing therapy in order to avoid further confrontation with cognitive, emotional, or behavioral problems. Psychoanalytic theory interprets the flight into health as an unconscious DEFENSE MECHANISM. Also called **transference cure**; **transference remission**.

**flight into illness** **1.** a tendency to focus on or exaggerate minor physical complaints as an unconscious means of avoiding stressful situations and feelings. **2.** in psychotherapy, the sudden development of neurotic or physical symptoms by a client or prospective client. Psychoanalytic theory interprets this as an unconscious DEFENSE MECHANISM that is used to avoid examination of a deeper underlying conflict. Also called **escape into illness**; **flight into disease**.

**flight into reality** a defensive reaction in which an individual becomes overinvolved in activity and work as an unconscious means of avoiding threatening situations or painful thoughts and feelings. Compare FLIGHT FROM REALITY; FLIGHT INTO FANTASY.

**flight of colors** a succession of colored AFTERIMAGES seen following exposure to a brief intense flash of light in a dark environment.

**flight of ideas** a rapid, continuous succession of superficially related thoughts and ideas, manifest as hurried speech with frequent abrupt shifts in topic. A common symptom of a MANIC EPISODE, such disturbed thinking occasionally is seen in other disorders as well, including schizophrenia.

**floaters** *pl. n.* see DETACHED RETINA.

**floating-limb response** in standard hypnotic inductions, a positive response to the suggestion to allow the hand and arm to float upward. See also KOHNSTAMM TEST.

**floccillation** *n.* aimless grasping and plucking at clothing or bedding, typically associated with dementia, delirium, and high fever. It is sometimes a sign of extreme

exhaustion and is considered a serious symptom, often associated with a poor prognosis. Also called **carphology**.

**flocculonodular lobe** one of the divisions of the CEREBELLUM, lying below the posterior lobe. The flocculonodular lobe projects to the VESTIBULAR NUCLEI of the brainstem and is mainly involved with vestibular functions (posture and eye movements).

**flocking** *n.* the grouping of birds due to social attraction and interaction. It is related to colonial nesting (see COLONIAL SPECIES) and contrasts with AGGREGATION, which is due to some independent factor. The equivalent of flocking in mammals is known as **herding** (see HERD INSTINCT).

**flooding** *n.* a technique in BEHAVIOR THERAPY in which the individual is exposed directly to a maximum-intensity anxiety-producing situation or stimulus, either described or real, without any attempt made to lessen or avoid anxiety or fear during the exposure. An individual with claustrophobia, for example, might be asked to spend extended periods of time in a small room. Flooding techniques aim to diminish or extinguish the undesired response to a feared situation or stimulus and are used primarily in the treatment of individuals with phobias and similar disorders. It is distinct from SYSTEMATIC DESENSITIZATION, which involves a gradual, step-by-step approach to encountering the feared situation or stimulus while attempting throughout to maintain a nonanxious state. See also IMPLOSIVE THERAPY.

**floor effect** the situation in which a large proportion of participants perform very poorly on a task or other evaluative measure, thus skewing the distribution of scores and making it impossible to differentiate among the many individuals at that low level. For example, a test whose items are too difficult for those taking it would show a floor effect because most people would obtain or be close to the lowest possible score of 0. Compare CEILING EFFECT.

**floral** *adj.* denoting one of the seven classes of odorants in the STEREOCHEMICAL SMELL THEORY.

**flotation-REST** *n.* see RESTRICTED ENVIRONMENTAL STIMULATION TECHNIQUE.

**flotation tank** an enclosed container filled with water (usually highly concentrated salt water) and insulated from all incoming stimuli (e.g., light, sound). It is used for both experimental and clinical purposes (see RESTRICTED ENVIRONMENTAL STIMULATION TECHNIQUE; SENSORY DEPRIVATION). Originally called **isolation tank**; **sensory deprivation tank**. [developed by U.S. physician John C. Lilly (1915–2001)]

**flourishing** *n.* a condition denoting good mental and physical health: the state of being free from illness and distress but, more important, of being filled with vitality and functioning well in one's personal and social life. Compare LANGUISHING. —**flourish** *vb.*

**flow** *n.* a state of optimal experience arising from intense involvement in an activity that is enjoyable, such as playing a sport, performing a musical passage, or writing a creative piece. Flow arises when one's skills are fully utilized yet equal to the demands of the task, intrinsic motivation is at a peak, one loses self-consciousness and temporal awareness, and one has a sense of total control, effortlessness, and complete concentration on the immediate situation (the here and now). [proposed in 1990 by Mihaly CSIKSZENTMIHALYI]

**flower-spray ending** a type of nerve-fiber ending at the thin ends of a MUSCLE SPINDLE in which the fiber branches out across the surface of the spindle. Also called **secondary sensory ending**. Compare ANNULOSPIRAL ENDING.

**flowery** *adj.* denoting one of the primary odor qualities in HENNING'S ODOR PRISM.

**flow pattern** see OPTIC FLOW.

**fluctuating asymmetry** the degree to which the symmetry of body parts of individuals varies from the norm for a given species. This provides information to others about the relative health or well-being of an individual: It is assumed that those with more symmetrical bodies are healthier and more vigorous than those with more asymmetry. Thus, fluctuating asymmetry is an important cue in MATE-SELECTION decisions.

**fluctuation** *n.* **1.** variation in size or value. **2.** a slight change that is associated with environmental factors rather than being an inherited trait. **3.** in TIME-SERIES ANALYSES, an irregularity that is not related to any trend and is thus often removed via SMOOTHING.

**fluctuation of attention** the tendency for objects or stimuli to pass in and out of attention even though stimulation is constant.

**fluctuation of perception** a tendency for perception to alternate between competing stimuli that cannot be integrated or synthesized. See BISTABLE PERCEPTUAL EVENTS.

**fluency** *n.* **1.** the ability to generate ideas, words, mental associations, or potential solutions to a problem with ease and rapidity. It is usually considered to be an important dimension of CREATIVITY. See ASSOCIATIVE FLUENCY. **2.** facility in speaking or writing, as in a language that is not one's native language. —**fluent** *adj.*

**fluent aphasia** see APHASIA.

**fluent speech** speech that is essentially normal in quantity, stress, pitch, rhythm, and intonation.

**fluid intelligence (fluid ability)** see CATTELL–HORN THEORY OF INTELLIGENCE.

**flumazenil** *n.* a drug used for the emergency reversal of symptoms of BENZODIAZEPINE overdose and in anesthesia to reverse benzodiazepine-induced sedation. It acts by displacing benzodiazepine (which acts as a GABA AGONIST) from binding sites on the GABA receptor complex (see BENZODIAZEPINE ANTAGONIST; GABA<sub>A</sub> RECEPTOR). Because it is a short-acting agent, multiple doses may be required. It is not effective in managing benzodiazepine dependence, because its rapid action may precipitate a sudden withdrawal syndrome, nor does it antagonize the central nervous system effects of other GABA agonists (e.g., barbiturates) or reverse their effects. U.S. trade name: **Romazicon**.

**flunitrazepam** *n.* a BENZODIAZEPINE that is legally prescribed in some countries (but not the United States) for the short-term treatment of insomnia and as a preanesthetic medication. It is also used as a drug of abuse for its sedating and disinhibiting effects. When combined with alcohol, like many other CNS DEPRESSANTS, it can cause serious problems (see DATE-RAPE DRUG). Also known colloquially as **roofie**. Trade name: **Rohypnol**.

**fluorescein angiography** a diagnostic procedure used to examine the retinal vasculature. A fluorescent compound, **fluorescein**, is injected into the systemic circulation;



as it flows through the blood vessels on the surface of the retina, these are photographed with a special camera.

**fluoxetine** *n.* an antidepressant that is the prototype of the SSRIs (selective serotonin reuptake inhibitors). It acts by inhibiting the serotonin TRANSPORTER, preventing reuptake of serotonin into the terminal button (see AXON) of the presynaptic neuron. This presumably results in higher levels of available neurotransmitter to interact with postsynaptic receptors. Fluoxetine differs from other SSRIs in that it and its biologically active metabolic product, norfluoxetine, have a prolonged HALF-LIFE of 5 to 7 days after a single dose; thus, it takes 20 to 35 days for the drug to reach steady-state concentrations. Like other SSRIs, it should not be used with MONOAMINE OXIDASE INHIBITORS. U.S. trade names: **Prozac**; **Sarafem**.

**fluphenazine** *n.* a HIGH-POTENCY ANTIPSYCHOTIC of the piperazine PHENOTHIAZINE class. It is as potent as HALOPERIDOL and has similar side effects, with neuromuscular and extrapyramidal symptoms predominating. Like haloperidol, it is also available in an oil-based injectable form. These so-called depot preparations are injected intramuscularly and are very slowly absorbed, allowing periods of several weeks between doses. U.S. trade name: **Prolixin**.

**flurazepam** *n.* a BENZODIAZEPINE derivative used in the short-term treatment of insomnia. U.S. trade name: **Dalmane**.

**flutamide** *n.* see ANTIANDROGEN.

**flutter** *n.* see ROUGHNESS.

**flutter dysmetria** see OCULAR FLUTTER.

**fluttering hearts** a visual illusion in which figures of one color (typically red), presented on a background of the same brightness but a different color (typically blue), will appear to dance when the whole image is moved. The different response speeds of the RETINAL CONES encoding the two colors is thought to be the basis of this illusion.

**fluvoxamine** *n.* a potent SSRI (selective serotonin reuptake inhibitor). Although its mechanism of action and antidepressant efficacy match those of other SSRIs, it is approved for and largely marketed for treating obsessive-compulsive disorder (see also CLOMIPRAMINE) and social anxiety disorder. U.S. trade name: **Luvox**.

**fly agaric** the highly poisonous mushroom *Amanita muscaria*, so called because it was once used as an insecticide to kill flies. MUSCARINE was the first active ingredient to be identified, but it is now known that IBOTENIC ACID and its metabolite **muscimol**, which is similar in structure to the inhibitory neurotransmitter GAMMA-AMINOBUTYRIC ACID (GABA) and acts as a GABA AGONIST, are the principal active components. Effects on humans are initially stimulating, ranging from euphoria through hallucinations to hyperactivity or excitement, and then sedating, inducing deep sleep. Symptoms of poisoning include dizziness, abdominal pains, vomiting, muscle cramps, and movement difficulties; at higher doses, these symptoms may be followed by unconsciousness, asphyxiation, coma, and potentially death. Fly agaric has been variously identified as the substance taken by Norse berserkers before battle, as the plant SOMA worshipped in ancient times, and, in fiction, as the mushroom eaten by Alice before she perceived objects larger than life in Lewis Carroll's *Alice in Wonderland*.

**flying flies** see MUSCAE VOLITANTES.

**Flynn effect** the gradual cross-cultural rise in raw scores

obtained on measures of general intelligence. These increases have been roughly 9 points per generation (i.e., 30 years). The gains have been unequally distributed across the different kinds of abilities, with fluid abilities showing substantially greater gains than crystallized abilities (see CATTELL-HORN THEORY OF INTELLIGENCE). [James **Flynn** (1934– ), New Zealand philosopher who first documented its occurrence]

**$F_{\max}$  statistic** in an ANALYSIS OF VARIANCE, a value formed from the ratio of the largest variance over the smallest variance from the set of groups being assessed. The  $F_{\max}$  statistic is assessed for significance by looking up the CRITICAL VALUE in a statistical table for the relevant number of groups and DEGREES OF FREEDOM. If the calculated  $F_{\max}$  statistic is larger than the critical value, then there is evidence of HETEROGENEITY OF VARIANCE, which violates one of the assumptions of the analysis and renders its results invalid.

**FMEA** abbreviation for FAILURE MODES AND EFFECTS ANALYSIS.

**fMRI** abbreviation for FUNCTIONAL MAGNETIC RESONANCE IMAGING.

**fMRI measures of intelligence** measures of intelligence yielded by FUNCTIONAL MAGNETIC RESONANCE IMAGING methods, which enable investigators to obtain relatively precise indications of which part or parts of the brain are being utilized in the solution of a cognitive task. Thus, the typical goal is to pinpoint that part of the brain in which processing is taking place for a given task at a given point in information processing for that task.

**FMS** abbreviation for FALSE MEMORY syndrome.

**focal attention** active concentration on particular stimuli to the exclusion of others. Information that is within one's SCOPE OF ATTENTION is said to be in focal attention. Much research is devoted to determining the information capacity of focal attention and to understanding how it interacts with various memory systems after its capacity is exceeded. Also called **focused attention**. See also SELECTIVE ATTENTION.

**focal consciousness** those contents of experience that are the focus of attention at any given moment. The focal components of consciousness will typically be clear, discriminable, and detailed. Compare FRINGE CONSCIOUSNESS.

**focal degeneration** the development of a lesion or dysfunction in a specific area of the brain due to a degenerative process, such as dementia. The lesion may remain limited in focus or spread into neighboring regions.

**focal dermal hypoplasia** see GOLTZ SYNDROME.

**focal length** (symbol: *f*) the distance between the surface of a lens and the point at which it focuses the light passing through the lens.

**focal lesion** a lesion that is restricted to a specific area (e.g., of the brain).

**focal motor seizure** a simple PARTIAL SEIZURE that results in motor abnormalities and is due to localized seizure activity in brain areas important for movement.

**focal pathology** the study of changes in body tissues and organs involved in a disease at the focal point of the diseased area.

**focal psychotherapy** a form of BRIEF PSYCHOTHERAPY in which a single problem (e.g., excessive anxiety) is made

the target of the entire course of treatment. The therapist continually redirects the process to avoid deviations from this specifically identified aim.

**focal seizure** see PARTIAL SEIZURE.

**focal symptoms** symptoms limited to a specific area.

**focus** *n.* the concentration or centering of attention on a stimulus.

**focused attention** see FOCAL ATTENTION.

**focus gambling** in a task that requires the generation of hypotheses about what combination of FEATURES defines a concept, a strategy in which the participant changes more than one feature from one hypothesis to the next. Focus gambling contrasts with the more conservative strategy of varying one feature at a time to determine its relevance to the concept. See CONCEPT-DISCOVERY TASK.

**focus group** a small set of people, typically 8 to 12 in number, who share characteristics (e.g., working parents with 5- to 8-year-old children) and are selected to discuss a topic of which they have personal experience (e.g., their children's reading abilities and school performance). A leader conducts the discussion and keeps it on target while also encouraging free-flowing, open-ended debate. Originally used in marketing to determine consumer response to particular products, focus groups are now used for determining typical reactions, adaptations, and solutions to any number of issues, events, or topics and are associated particularly with QUALITATIVE RESEARCH.

**focusing** *n.* in EXPERIENTIAL PSYCHOTHERAPY, a process in which the therapist guides a client to focus silently on the experience of a problem or symptom in a relaxed and non-judgmental way, often with eyes closed. The client explores intuitively what the problem or symptom is about, without attempting to analyze or control thought processes. The method is believed to lead the client to deeper feelings and greater insight about and peace with the problem or symptom. [developed by Austrian-born U.S. philosopher and psychologist Eugene T. Gendlin (1926– )]

**focusing effect** the ostensible phenomenon in which performance is better for trials in which the TARGET is the object of special attentional focus (perhaps because it has particular significance for the participant). The phenomenon is of particular interest in studies of EXTRASENSORY PERCEPTION and PSYCHOKINESIS. See also DECLINE EFFECT; DIFFERENTIAL EFFECT; POSITION EFFECT; PREFERENTIAL EFFECT; SHEEP–GOAT EFFECT; ZENER CARDS.

**focusing mechanism** the system of CILIARY MUSCLES, lens elasticity, and ocular-fluid pressure that enables the eye to focus an image sharply on the retina. The natural shape of the lens is spherical, which is required to focus near objects. When focusing distant objects, the lens is flattened by tension exerted on the ZONULES as the ciliary muscles are relaxed and by fluid pressure within the eye.

**focusing power** the degree to which a converging lens causes parallel rays of light to be refracted (see REFRACTION). A high focusing power will cause light to be focused to a point close to the lens; a low focusing power causes the light to be focused farther from the lens. The focusing power of a lens is measured in DIOPTERS. The **magnification power** of a lens indicates how many times an object is enlarged when viewed through the lens; for example, a 4× lens will produce an image four times the actual size of the object.

**focus of attention** that aspect of an internal or external event to which attention is directed.

**focus of convenience** in the personality theory of George A. KELLY, the set of phenomena to which a given theory best applies.

**FOK** abbreviation for FEELING OF KNOWING.

**foliate papillae** swellings along the lateral margins (sides) of the tongue, in humans numbering 5 to 7 on each side, each shaped like a leaf. The groove between each pair of papillae contains about 100 TASTE BUDS. See also PAPPILLA.

**folie à deux** a rare psychotic disorder in which two intimately related individuals simultaneously share similar or identical delusions (French, "double insanity"). It is the most common form of SHARED PSYCHOTIC DISORDER. Rarer forms involving more than two intimately related individuals or members of the same family are called **folie à trois** (a delusion shared by three people), **folie à quatre** (a delusion shared by four people), and so on.

**folium** *n.* (*pl.* **folia**) a leaflike structure, especially one of the leaflike folds of the CEREBELLAR CORTEX.

**folk bilingualism** a type of BILINGUALISM associated mainly with working-class immigrant communities, in which the native language is primarily oral and its use is unsupported by formal education. Also called **circumstantial bilingualism**. Compare ELITE BILINGUALISM.

**folklore** *n.* the body of beliefs, legends, tales, songs, and other traditions transmitted orally from generation to generation in a specific culture.

**folk medicine** health and healing strategies based on cultural tradition, usually practiced by people within the culture who have experience in applying these remedies but no formal training. Folk medicine is most strongly associated with herbal remedies, but animal, mineral, and spiritual remedies also fall into this category. When folk medicine is used outside of its originating culture, it is considered part of COMPLEMENTARY AND ALTERNATIVE MEDICINE. Also called **traditional medicine**.

**folk psychology** **1.** the everyday, commonsense, implicit knowledge that enables the prediction or explanation of the behavior of others (and of oneself) by reference to the mental states involved. Although such an understanding is accepted in much of social and personality psychology, there are those who view it as illusory or mythological and hold its tenets unworthy of scientific consideration. In ELIMINATIVISM, the term *folk psychology* is used pejoratively for any explanatory language that refers to mental states, such as beliefs and intentions, rather than to biological states. See also COMMONSENSE PSYCHOLOGY; POPULAR PSYCHOLOGY. **2.** an obsolete name for a branch of psychology that deals with the influence of specific cultural experiences (e.g., legends, religious rituals, indigenous healing practices) on human behavior and psychological constructs. It is essentially equivalent to modern CROSS-CULTURAL PSYCHOLOGY. **3.** a branch of the psychological system of Wilhelm WUNDT, who believed that an understanding of higher mental processes could be deduced from the study of such cultural products as language, history, myths, art, government, and customs. As such, it is the historical predecessor to modern MULTICULTURAL PSYCHOLOGY.

**folk soul** in the FOLK PSYCHOLOGY of Wilhelm WUNDT, a

group's perpetual and fundamental characteristics, moralities, norms, and values, which cannot be explained solely in terms of the characteristics of the individual members of the group. Belief in a folk soul is usually seen as an example of the GROUP FALLACY. See also GROUP MIND.

**folkways** *pl. n.* the traditional modes of behavior in a particular culture, society, or group.

**follicle** *n.* a cluster of cells enclosing, protecting, and nourishing a cell or structure within, such as a HAIR FOLLICLE or a GRAAFIAN FOLLICLE. —**follicular** *adj.*

**follicle-stimulating hormone (FSH)** a GONADOTROPIN released by the anterior pituitary gland that, in females, stimulates the development in the ovary of GRAAFIAN FOLLICLES (see MENSTRUAL CYCLE). The same hormone in males stimulates SERTOLI CELLS in the testis to produce spermatozoa. Also called **follitropin**.

**follicular phase** see MENSTRUAL CYCLE.

**follow-back study** research that collects earlier data in order to understand the causes of an event of interest. For example, a researcher might conduct a follow-back study of deceased hospital patients, gathering additional information regarding cause of death so as to understand the progress of different diseases.

**following behavior** a species-specific trait of certain young animals that run or swim after a parent or surrogate parent. It is a manifestation of IMPRINTING.

**follow-up counseling** 1. the measures taken by a counselor or clinician in helping a client with ongoing problems or new manifestations of the original problems. 2. an evaluation of a client's progress and the effectiveness of counseling to date.

**follow-up history** see CATAMNESIS.

**follow-up study** a long-term research project designed to examine the degree to which effects seen shortly after the imposition of an intervention persist over time. Follow-up studies are also used for the long-term study of participants in a laboratory experiment to examine the degree to which effects of the experimental conditions are lasting.

**follow-up test** see POST HOC TEST.

**Folstein Mini-Mental State Examination** see MINI-MENTAL STATE EXAMINATION.

**fontanel (fontanelle)** *n.* a soft, membrane-covered area in the incompletely ossified skull of a newborn infant. Fontanels typically close before the 2nd year of life, as the skull bones gradually fuse. Also called **soft spot**.

**food addiction** an eating disturbance characterized by a preoccupation with one's body image and weight, obsessive thoughts about food, the use of food as a source of pleasure, and COMPULSIVE EATING. In addition, the individual may experience symptoms of withdrawal during attempts to reduce food intake or abstain from particular types of food. See also BINGE-EATING DISORDER; BULIMIA NERVOSA.

**food caching** the hiding or storing of food by a nonhuman animal for later use. Clark's nutcracker, a bird of the southwestern United States, is said to cache up to 30,000 pine nuts each year and to retrieve enough of these to survive over winter. Food-caching birds have good SPATIAL MEMORY and an enlarged HIPPOCAMPUS. See HOARDING.

**food faddism** any dietary practice based on exaggerated

and often incorrect beliefs about the effects of food or nutrition on health, particularly for the prevention or cure of illness. This is often expressed as strange or inappropriate eating habits and the adoption of cult diets; it may lead to unhealthy weight loss or side effects arising from poor nutrition. It is sometimes associated with eating disorders, such as ANOREXIA NERVOSA.

**food-intake regulation** the ability to adjust daily intake of calories and other nutrients according to the temperature of the environment, energy expended at various tasks, and other factors, so that calorie intake and calorie loss, as well as other nutritional components (e.g., proteins, fats, vitamins, minerals), are constantly in balance. Food-intake regulation is one example of HOMEOSTASIS.

**foot anesthesia** see STOCKING ANESTHESIA.

**foot-candle** *n.* a former unit of illuminance now replaced by the LUX (1 foot-candle = 10.764 lux). Average street lights are approximately 1 foot-candle.

**foot drop** a characteristic of certain neuromuscular disorders in which the muscles that control movement of the foot or toes are weakened or paralyzed. The affected foot may fall toward and slap against the floor or ground, or the affected toes may tilt forward and drag along the floor or ground.

**footedness** *n.* preferential use of one foot rather than the other, for example, in kicking. See HANDEDNESS; LATERALIZATION.

**foot fetishism** a form of FETISHISM in which sexual excitement is achieved through contact with or masturbation near a shoe or foot. Shoes or feet are among the most common varieties of fetish, but there is little understanding of why this occurs. The condition is also called **retifism**, named for French writer Nicolas-Edme Rétif (1734–1806), also known as Rétif de la Bretonne, who is said to have had a sexual interest in women's footwear.

**foot-in-the-door technique** a two-step procedure for enhancing COMPLIANCE in which a minor initial request is presented immediately before a more substantial target request. Agreement to the initial request makes people more likely to agree to the target request than would have been the case if the latter had been presented on its own. See also DOOR-IN-THE-FACE TECHNIQUE; LOW-BALL TECHNIQUE; THAT'S-NOT-ALL TECHNIQUE.

**foraging** *n.* the process of searching for, locating, capturing, and processing food for ingestion or for provisioning young. For example, fruit-eating animals must locate trees containing fruit ripe enough to eat and often process the fruit by removing husks or seeds prior to ingestion. OPTIMAL FORAGING THEORY provides a framework for predicting the costs and benefits of different decisions about where to forage and for how long.

**foramen** *n.* (*pl. foramina*) an anatomical opening or hole, particularly in a bone. For example, the **foramen magnum** is a large opening at the base of the skull through which the spinal cord and the vertebral arteries pass.

**foramen of Monro** see INTERVENTRICULAR FORAMEN. [Alexander Monro Jr. (1733–1817), Scottish anatomist]

**foraminotomy** *n.* the surgical enlargement of one of the foramina (openings) between adjacent vertebrae through which a spinal nerve passes, usually by enlarging the opening above the nerve root. The procedure is done to relieve nerve pressure, such as that causing lower back pain.

**forced-choice question** see FIXED-ALTERNATIVE QUESTION.

**forced compliance effect** the tendency of a person who has behaved in a way that contradicts his or her attitude to subsequently alter the attitude to be consistent with the behavior. It is one way of reducing COGNITIVE DISSONANCE. Also called **induced compliance effect**. See also DISSONANCE REDUCTION.

**forced copulation** copulation by a male with a female against her choice. In scorpion flies, males have several tactics for obtaining mates: Larger males can monopolize resources and offer food to females that accept copulation; smaller males without access to food can use forced copulation, which leads to much less REPRODUCTIVE SUCCESS. See also RAPE.

**forced distribution** a rating system in which raters must make a prescribed number of entries for each level of the rating scale used. For example, in EMPLOYEE EVALUATION, a forced distribution might be used in which it is required that 5% of employees are categorized as poor, 15% as below average, 60% as average, 15% as above average, and 5% as excellent.

**forced treatment** therapy administered without the INFORMED CONSENT of the recipient, such as to an individual with a mental disorder. Forced treatment may include court-ordered administration of psychoactive drugs to a person to restore his or her COMPETENCY TO STAND TRIAL or the INVOLUNTARY HOSPITALIZATION of a person considered dangerous to himself or herself or others. Many question the ethical acceptability of the practice, citing its infringement of autonomy and the RIGHT TO REFUSE TREATMENT and its lack of scientifically demonstrated effectiveness; such controversy has intensified in recent decades. Also called **coercive treatment**; **involuntary treatment**.

**force field** in FIELD THEORY, the totality at any instant of coexisting factors that influence change (e.g., behavioral change).

**forceps injury** a defect, temporary or permanent, induced by the use of forceps to extract a newborn infant from the mother's uterus during labor. Forceps injury is one of the causes of cerebral palsy.

**forebrain** *n.* the part of the brain that develops from the anterior section of the NEURAL TUBE in the embryo, containing the CEREBRUM and the DIENCEPHALON. The former comprises the cerebral hemispheres with their various regions (e.g., BASAL GANGLIA, AMYGDALA, HIPPOCAMPUS); the latter comprises the THALAMUS and HYPOTHALAMUS. Also called **prosencephalon**.

**foreclosure** *n.* see IDENTITY FORECLOSURE; IDENTITY STATUS MODEL.

**foreground-background** *n.* in perception, the distinction between the object of attention, which is in the subjective foreground, and the vague texture of the background, which is less likely to receive individual attention. See also FIGURE-GROUND.

**foregrounding** *n.* the process or technique of highlighting certain aspects of a complex stimulus to make them the focus of attention. Foregrounding occurs, for example, when a speaker or writer gives prominence to some elements in a communication rather than others, usually by a combination of word order, sentence construction, and more explicit pointers. DISCOURSE ANALYSIS is much con-

cerned with the ways in which speakers and writers tend nonconsciously to foreground certain categories of information (see GIVEN-NEW DISTINCTION).

**foreigner talk** a speech REGISTER commonly adopted when speaking to those perceived as foreigners not competent in the language being used, typically characterized by short sentences, simplified grammar and vocabulary, and slow, loud delivery.

**forensic assessment** systematic evaluation by a mental health practitioner of a defendant, witness, or offender for the purpose of informing the court about such issues as COMPETENCY TO STAND TRIAL, CRIMINAL RESPONSIBILITY, and RISK ASSESSMENT.

**forensic neuropsychology** the application of CLINICAL NEUROPSYCHOLOGY to issues of both civil and criminal law, particularly those relating to claims of brain injury.

**forensic neuroscience** an emerging field in which the regulation of certain behaviors, including criminal, antisocial, sociopathic, and psychopathic, is viewed in light of neural mechanisms that may determine such behaviors. Theoretically, these behaviors are seen as arising not from an individual's failure to know right from wrong but from neural mechanisms that may be functioning improperly.

**forensic psychiatry** the branch of psychiatry concerned with abnormal behavior and mental disorders as they relate to legal issues, hearings, and trials. Major areas of concern include insanity pleas (see INSANITY DEFENSE) and the legal definition of INSANITY; procedures to commit individuals to mental hospitals; and questions of criminal responsibility, competency to stand trial, guardianship, conservatorship, and confidentiality. Also called **legal psychiatry**.

**forensic psychology** the application of psychological principles and techniques to situations involving the civil and criminal legal systems. Its functions include assessment and treatment services, provision of ADVOCACY and EXPERT TESTIMONY, policy analysis, and research on such topics as eyewitness accounts, offender behavior, interrogations, and investigative practices. Also called **legal psychology**. See also CORRECTIONAL PSYCHOLOGY.

**forensic social work** the application of social work principles and techniques to legal issues or situations involving the law or legal systems (both criminal and civil). Its functions include providing consultation, education, or training to various individuals within the legal and correctional systems; making recommendations regarding CHILD CUSTODY and related issues; providing EXPERT TESTIMONY and ADVOCACY; and conducting research and policy analysis.

**foreplay** *n.* activity engaged in prior to coitus, marked by psychological as well as physical stimulation. The purpose of foreplay, which includes kissing, stroking, fantasizing, and similar activities, is to encourage sexual arousal in the participants. It may last from a few minutes to several hours.

**foreshortening** *n.* the illusion that the length of a line appears shorter when viewed lengthwise.

**foreskin** *n.* a loose fold of skin that normally covers the GLANS PENIS but can retract during erection or coitus. It is a continuation of the skin covering the rest of the penis. It is synonymous with PREPUCE, a term also used to denote the CLITORAL HOOD. Also called **preputium penis**. See also CIRCUMCISION.

**forest plot** a graph, often used in META-ANALYSES, in which the authors or titles of the studies are listed along the left side, and the corresponding EFFECT SIZE for each is given on the right. The effect sizes for the individual studies are usually indicated by squares in which the size of the square is proportional to the size of the effect for a specific study. At the bottom, the overall effect size is given, usually in a diamond shape whose width indicates the outer points of a CONFIDENCE INTERVAL for the overall effect across all of the studies listed.

**forethought** *n.* the ability of an individual to anticipate the consequences of his or her actions and the actions of others. In SOCIAL-COGNITIVE THEORY, forethought is a key element in learning behavior.

**forewarning of persuasive intent** the receipt of information that a subsequent communication is intended to change the attitude of the recipient. This forewarning tends to decrease ATTITUDE CHANGE by predisposing ELABORATION against what is advocated in the message. See also BIASSED ELABORATION; BIASING FACTOR.

**forewarning of persuasive position** the receipt of information that a subsequent communication will contain arguments for a particular attitudinal position. Forewarning that a communication will be a COUNTERATTITUDINAL ADVOCACY tends to decrease ATTITUDE CHANGE by predisposing ELABORATION against the message. See also BIASSED ELABORATION; BIASING FACTOR.

**forget cue** see DIRECTED FORGETTING.

**forgetting** *n.* the failure to remember material previously learned. Numerous processes and theories have been proposed throughout the long history of study to account for forgetting, including DECAY THEORY and INTERFERENCE THEORY. Forgetting typically is a normal phenomenon but it may also be pathological, as, for example, in amnesia.

**forgetting curve** a graphic depiction of the amount of forgetting over time after learning has taken place. In his pioneering studies of forgetting, which involved lists of nonsense syllables, Hermann EBBINGHAUS was the first to show that there is generally a sudden drop in retention shortly after learning, followed by a more gradual decline thereafter. Also called **Ebbinghaus curve**.

**forgiveness** *n.* willfully putting aside feelings of resentment toward an individual who has committed a wrong, been unfair or hurtful, or otherwise harmed one in some way. Forgiveness is not equated with reconciliation or excusing another, and it is not merely accepting what happened or ceasing to be angry. Rather, it involves a voluntary transformation of one's feelings, attitudes, and behavior toward the individual, so that one is no longer dominated by resentment and can express compassion, generosity, or the like toward the individual. Forgiveness is sometimes considered an important process in psychotherapy or counseling.

**formal cause** see CAUSE.

**formal discipline** a concept that certain subjects (e.g., mathematics and foreign languages) should be studied for the primary purpose of exercising and developing the mind.

**formal fallacy** see FALLACY.

**formal grammar** a description of language in terms of its form and structure as opposed to its function and meaning. Compare FUNCTIONAL GRAMMAR. See FORM-FUNCTION DISTINCTION.

**formal group** any group that is deliberately formed by its members or an external authority for some purpose. Unlike an ACCIDENTAL GROUP, a formal group is likely to use explicit terms to define its membership criteria, operating procedures, role structure, and goals. Also called **planned group**.

**formalism** *n.* the study of the outward form of works of art and literature, as opposed to their content or meaning. —**formalist** *n.* —**formalistic** *adj.*

**formal language** see ARTIFICIAL LANGUAGE.

**formal logic** a system of prescribed rules for generating valid conclusions or predictions from initial axiomatic assumptions or knowledge. It is often contrasted with more intuitive forms of thought, such as common sense. See DEDUCTIVE REASONING; LOGIC; SYMBOLIC LOGIC.

**formal operational stage** the fourth and final stage in the PIAGETIAN THEORY of cognitive development, beginning around age 12, during which complex intellectual functions, such as abstract thinking, logical processes, conceptualization, and judgment, develop. See also CONCRETE OPERATIONAL STAGE; PREOPERATIONAL STAGE; SENSORIMOTOR STAGE.

**formal organizational structure** the official patterns of coordination and control, workflow, authority, and communication that channel the activity of members of an organization. The formal structure is embedded in the design of the organization and is seen as the pattern that should be followed by employees. It can be contrasted with the **informal organizational structure**, which is defined by patterns that are not officially recognized but that emerge from the daily interactions of employees.

**formal parallelism** a comparative approach to the concept of development that relates multiple modes of functioning (i.e., different modes of animal life, different kinds of sociocultural organization, or different types of consciousness) to different levels of organization and integration, rather than relating them to a single line of chronological development, as in RECAPITULATION THEORY. [proposed by Heinz WERNER]

**formal reasoning** reasoning that entails the use of formal logical operations. See DEDUCTIVE REASONING; LOGIC.

**formal theory** a model or set of rules and assumptions used to understand various behaviors in mathematical terms. Formal theories often are developed and studied in the field of political science and psychology. An example of a formal theory is the so-called PRISONER'S DILEMMA model, which can be applied to various situations in which participants have to decide between the costs and benefits of cooperating or competing. The model uses a series of rules to determine the outcomes of various behaviors when two suspects separately have the option to confess or refuse to speak about a potential crime.

**formal thought disorder** disruptions in the form or structure of thinking. Examples include DERAILMENT and TANGENTIALITY. It is distinct from THOUGHT DISORDER, in which the disturbance relates to thought content.

**formal universal** see LANGUAGE UNIVERSAL.

**formants** *pl. n.* the frequency bands of speech sounds produced by the vocal cords and other physical features of the head and throat. A simple sound, such as the vowel /a/, may span several kilohertz of frequencies when recorded by a SOUND SPECTROGRAPH.

**formative evaluation** a process intended to improve or guide the development of a program in its early stages through the use of qualitative or quantitative research methodology. Ideally, the individual performing a formative evaluation will repeatedly interact, often informally, with the program personnel from the outset of the work to clarify goals, monitor implementation, and assess staff and resource requirements. Also called **feedback evaluation**. See also PROCESS EVALUATION; SUMMATIVE EVALUATION.

**formative tendency** the general drive toward self-improvement, growth, and SELF-ACTUALIZATION hypothesized by Carl ROGERS in his CLIENT-CENTERED THERAPY.

**formboard test** a type of performance test in which the individual fits blocks or cut-outs of various shapes into depressions in a board.

**form discrimination** the ability to use one's senses, primarily vision and touch, to judge the shape, size, texture, and other features of an object.

**form distortion** a change in an image that results from the optical qualities of the eye or an artificial lens, so that the image appears different from the stimulus that gave rise to it.

**form-function distinction** a distinction between two fundamentally different ways of analyzing language, one with respect to its structural properties (**form**) and the other with respect to its communicative properties (**function**). For example, a formal analysis of the utterance *Where are the pencils?* would point to the use of *where* and the auxiliary verb *be* to frame a *wh*-question and the agreement between that verb and the subject *pencils*; a functional analysis would need to judge whether the utterance is a request for information or a request for action. See FORMAL GRAMMAR; FUNCTIONAL GRAMMAR.

**formication** *n.* an acutely distressing sensation of ants or other insects crawling on the skin. It is a tactile (haptic) hallucination that occurs with cocaine abuse and in delirious states associated with acute alcoholic hallucinosis, meningitis, rheumatic fever, scarlet fever, diphtheria, and other infectious disorders. See also DELUSIONAL PARASITOSIS.

**formicophilia** *n.* sexual interest in and pleasure derived from small animals, insects, or snails crawling over one's body.

**form perception** the process by which the component elements of an object are bound together and perceived as a coherent entity that stands apart from the background and from other objects.

**form quality** the holistic character of a GESTALT, or whole, that makes it recognizable even after transformations. For example, a melody remains recognizable even after being transposed to a different key. [coined in 1890 by Christian von EHRENFELDS]

**forms of address** conventional verbal formulas by which individuals address one another in written or spoken communication, such as *Sir*, *Your Excellency*, *Mrs. Jones*, and *Darling*. The forms used will reflect the relationship of those using them in various ways, such as whether they are of equal or unequal status; whether they are strangers, acquaintances, or intimates; and whether they wish to signal warmth, politeness, or displeasure. Certain forms of address may also be prescribed in specific situations, such as a courtroom. Very hierarchical and conser-

vative societies (or parts of society) will often have elaborate conventions about the correct form to use when addressing those holding particular ranks or offices. In some languages, such as French and German, the form of the second person pronoun used (*tu* or *Du* as opposed to *vous* or *Sie*) will also be significant.

**formula** *n.* a precise statement about how two pieces of information, usually mathematical, are related. The most common type of formula is a mathematical EQUATION in which one variable is a weighted FUNCTION of another variable plus a constant. For example, the formula for a straight line is  $y = mx + b$ , where  $y$  is an outcome plotted on a vertical or  $y$ -axis,  $m$  is the slope of the line,  $x$  is the value of a variable along the horizontal or  $x$ -axis, and  $b$  is where the straight line crosses the vertical axis.

**fornication** *n.* consensual sexual intercourse between any two people who are not married to each other. The legal definition varies in different locales.

**fornix** *n.* (*pl.* **fornices**) any arch-shaped structure, especially the long tract of white matter in the brain arching between the HIPPOCAMPUS and the HYPOTHALAMUS, projecting chiefly to the MAMMILLARY BODIES.

**FORTRAN** *n.* FOR(mula) TRAN(slation) (language); the oldest high-level computer programming language still in use, originally developed at IBM in the late 1950s. Its primary application is the intensive mathematical modeling and problem solving needed for supercomputing in areas such as weather and climate modeling, computational physics, and plant and animal breeding. [created by U.S. computer scientist John Backus (1924–2007) and colleagues]

**forward association** the formation of an associative link between one item and an item that follows it in a series or sequence. Compare BACKWARD ASSOCIATION.

**forward chaining** see CHAINING.

**forward conditioning** in CLASSICAL CONDITIONING, the pairing of two stimuli such that the conditioned stimulus is presented before the unconditioned stimulus. Also called **forward pairing**. Compare BACKWARD CONDITIONING.

**forward-conduction law** see LAW OF FORWARD CONDUCTION.

**forward displacement** in parapsychology experiments using ZENER CARDS or similar targets, a result in which the participant's "call," or guess, matches the outcome of the next trial in the series rather than the current one. If this occurs consistently, it may be cited as evidence of PRECOGNITION. Compare BACKWARD DISPLACEMENT.

**forward masking** see MASKING.

**forward pairing** see FORWARD CONDITIONING.

**forward selection** a technique used in creating MULTIPLE REGRESSION models in which independent variables from a large set of such variables are added to the REGRESSION EQUATION in the order of their predictive power (i.e., largest to smallest increase in the COEFFICIENT OF MULTIPLE DETERMINATION) until a preset criterion is reached and there is no further significant change in the model's predictive power. Also called **forward inclusion**; **forward stepwise regression**; **stepup selection**. See also F-TO-ENTER; F-TO-REMOVE.

**fossa** *n.* (*pl.* **fossae**) a hollow or depressed area. In neuroanatomy, fossae range from relatively large areas, such as

the **anterior cranial fossa**, **middle cranial fossa**, and **posterior cranial fossa** in the base of the cranium for the lobes of the brain, to small regions, such as the **ethmoid fossa** for the OLFACTORY BULB and the **hypophyseal fossa** for the pituitary gland.

**fossil** *n.* the remains or traces of an organism that lived in the past, often the remote past. Usually only the hard parts of organisms become fossilized (e.g., bones, shells, wood), but under certain circumstances, an entire organism is preserved. In some cases, the organism has been turned into stone, a process called **petrification**.

**fossilization** *n.* in second-language acquisition, an intermediate state at which the learner's development ceases short of the attainment of full nativelike proficiency. See also IDIOLECT; INTERLANGUAGE; LANGUAGE TRANSFER. —**fossilize** *vb.*

**foster care** temporary care provided to children in settings outside their family of origin and by individuals other than their natural or adoptive parents. Foster care is intended to protect children whose parents are unavailable, abusive, or incapable of proper care, with the ultimate goal being to find a secure and permanent home. Typically, a child is placed with a family approved for foster care and paid a fee for such by a public child welfare agency. Although these **foster home** arrangements are most common, children may also be placed in group homes or institutions. See also ADULT FOSTER CARE.

**foster-child fantasy** the childhood belief or fantasy that the parents are actually adoptive or foster parents. See FAMILY ROMANCE.

**fostering** *n.* the process in which one provides care in a family environment to vulnerable children or adults to whom one is not related. See ADULT FOSTER CARE; FOSTER CARE.

**foul** *adj.* **1.** in the ZWAARDEMAKER SMELL SYSTEM, denoting an odor quality that is associated with bedbugs and French marigolds. **2.** denoting one of the primary odor qualities in HENNING'S ODOR PRISM.

**founder effect** the occurrence of a gene at increased frequency in a group or colony that was initially established by a small number of members of a larger population. The limited number of founders results in limited genetic diversity and a nonrandom genetic sample of the original population. The presence of a founder effect leads to a characteristic genetic makeup, which can allow the tracing of the migration of a particular ethnic group or population over time. Its presence is also associated with the predisposition of some groups to certain diseases. A founder effect has been identified for mutations predisposing to breast cancer among the Jewish population of Eastern Europe, for example.

**FOUR** abbreviation for FULL OUTLINE OF UNRESPONSIVENESS SCORE.

**Four As** see FUNDAMENTAL SYMPTOMS.

**four-card problem** see WASON SELECTION TASK.

**four-fifths rule** an arbitrary rule of thumb for determining a prima facie case of discrimination, as set forth in the UNIFORM GUIDELINES FOR EMPLOYEE SELECTION PROCEDURES. If the employer hires a protected group (e.g., an ethnic minority, women) at a rate that is less than four fifths the rate at which the majority group (i.e., White males) is hired, the company must justify its hiring procedures by

showing that they are job-related or of business necessity. If justification cannot be provided, the employer may be open to a charge of violating civil rights laws. See also ADVERSE IMPACT; AFFIRMATIVE ACTION; EQUAL EMPLOYMENT OPPORTUNITY COMMISSION; EQUAL OPPORTUNITY.

**fourfold table** see TWO-BY-TWO TABLE.

**Fourier analysis** the mathematical analysis of complex waveforms using the fact that they can be expressed as an infinite sum of sine and cosine functions (a **Fourier series**). It is accomplished via a **Fourier transform**, a mathematical operation that analyzes any waveform into a set of simple waveforms with different frequencies and amplitudes. The reconstruction of complex waveforms from simple components is called **Fourier synthesis**. Fourier analysis is particularly important in the study of sound (see SOUND SPECTRUM), and Fourier analysis and synthesis are important for the theoretical understanding of visual analysis. [Jean Baptiste Joseph **Fourier** (1768–1830), French mathematician and physicist]

**Fourier spectrum** a graph of amplitude as a function of frequency for all the sine waves that comprise a FOURIER ANALYSIS of an image. [Jean Baptiste Joseph **Fourier**]

**fourth cranial nerve** see TROCHLEAR NERVE.

**fourth moment** see MOMENT.

**fourth ventricle** see VENTRICLE.

**fovea centralis** a small depression in the central portion of the retina in which RETINAL CONE cells are most concentrated and an image is focused most clearly. Also called **fovea**. —**foveal** *adj.*

**foveal sparing** see VISUAL FIELD SPARING.

**foveal vision** see CENTRAL VISION.

**FR** abbreviation for fixed ratio. See FIXED-RATIO SCHEDULE.

**fractal** *n.* a geometric shape that can be divided into parts that each resemble the pattern of the whole shape. Thus, a fractal is a shape possessing the quality of **self-similarity**.

**fractile** *n.* see QUANTILE.

**fractional antedating goal response** a reaction that develops progressively earlier in conditioning a series of responses and may become a CONDITIONED STIMULUS for subsequent responses.

**fractional escape** see ESCAPE TITRATION.

**fractional factorial design** a type of experimental design in which some conditions are omitted, such that not all levels of one or more of the INDEPENDENT VARIABLES are combined with all other levels of the other variables. A LATIN SQUARE is an example. Fractional factorial designs might be used because of a small overall sample available for study or because of difficulty obtaining participants or assigning them to some conditions. Additionally, there may simply be too many combinations to study (e.g., in a  $3 \times 4 \times 2 \times 5$  design, there are 120 combinations of levels). Also called **incomplete factorial design**. Compare COMPLETE FACTORIAL DESIGN.

**fractionation** *n.* a psychophysical procedure to scale the magnitude of sensations in which an observer adjusts a variable stimulus to be half that of a standard stimulus.

**fragile X syndrome** a genetic condition that causes a range of developmental problems, including learning disabilities and cognitive impairment. The disorder is so named because of alterations in the *FMR1* gene, on the arm of the

X chromosome, that abnormally expand and destabilize it. Males with fragile X syndrome have characteristic physical features that become more apparent with age, such as large ears, prominent jaw and forehead, a long and narrow face, and enlarged testicles. Both males and females with fragile X may exhibit hyperactivity, social anxiety, and attention deficits; some males also show autistic behavior.

**fragmentary delusion** a disorganized, undeveloped false belief or a series of such beliefs that are disconnected, inconsistent, and illogical. Compare SYSTEMATIZED DELUSION.

**fragmentation** *n.* division or separation into pieces or fragments. For example, fragmentation of thinking (typically termed LOOSENING OF ASSOCIATIONS) is a disturbance in which thoughts become disjointed to such an extent as to no longer be unified, complete, or coherent; fragmentation of personality (typically termed PERSONALITY DISINTEGRATION) occurs when an individual no longer presents a unified, predictable set of beliefs, attitudes, traits, and behavioral responses.

**fragrant** *adj.* **1.** in the ZWAARDEMAKER SMELL SYSTEM, denoting an odor quality that is smelled in flowers and vanilla. **2.** denoting one of the four primary odor qualities in the CROCKER–HENDERSON ODOR SYSTEM.

**frail elderly** older adults who are infirm and experience significant difficulties in performing ACTIVITIES OF DAILY LIVING, resulting in a lack of independence and the need for extensive assistive care.

**frame** *n.* **1.** in cognitive psychology, a set of parameters defining either a particular mental SCHEMA or the wider COGNITIVE STRUCTURE by which an individual perceives and evaluates the world. See also CONCEPTUAL SYSTEM; PERCEPTUAL SET. **2.** in artificial intelligence, a KNOWLEDGE REPRESENTATION scheme, much like an object system, used to represent and structure knowledge for a computational system. [first proposed in 1981 by U.S. mathematician and computer scientist Marvin Minsky (1927– )] **3.** in education, see PROGRAMMED INSTRUCTION; LINEAR PROGRAM.

**frame of reference** in social psychology, the set of assumptions or criteria by which a person or group judges ideas, actions, and experiences. A frame of reference can often limit or distort perception, as in the case of PREJUDICE and STEREOTYPES.

**frame-of-reference training** training provided to those responsible for EMPLOYEE EVALUATION with the aim of improving the accuracy of their performance ratings. It involves providing raters with (a) a common reference standard to be used in performing evaluations and (b) practice in identifying good, average, and poor performances as defined by this standard.

**frame problem** a technical difficulty arising in artificial intelligence and COMPUTATIONAL MODELS of human cognition and involving the specification of the persistence of states that form the context in which thought takes place. The frame problem is essentially a question of how to use FORMAL LOGIC to specify or describe efficiently what remains unchanged in a given situation involving change, that is, what are the noneffects of a particular action on the properties of a situation (e.g., painting an object will not alter its position). In cognitive psychology and cognitive science, the term has been extended to the difficulty of modeling the human ability to quickly generate reasonable hypotheses that make sense of events in the environment

and to respond sensibly to incoming information, using relevant knowledge to guide the formation of new beliefs. [described by U.S. philosopher and psychologist Jerry Alan Fodor (1935– )]

**framing** *n.* the process of defining the context or issues surrounding a question, problem, or event in a way that serves to influence how the context or issues are perceived and evaluated. Also called **framing effect**. See also REFRAMING.

**framing effect** **1.** see ATMOSPHERE EFFECT. **2.** see FRAMING.

**Framingham Heart Study** an ongoing large-scale, long-range survey focused on understanding, preventing, and treating cardiovascular disease. Begun in 1948, the study has involved data collection from three generations of residents of the town of Framingham, Massachusetts. The data have identified primary risk factors involved with heart disease and stroke, such as cigarette smoking, physical inactivity, obesity, high cholesterol levels, diabetes, and hypertension. The study is regarded as one of the most reliable of its kind because it is of prospective design; that is, it enrolled people who were originally free of heart disease and recorded the dietary and other habits of the participants before signs of heart disease appeared.

**Franceschetti–Zwahlen–Klein syndrome** see TREACHER COLLINS SYNDROME. [Adolphe **Franceschetti** (1896–1968), Swiss ophthalmologist]

**Fraser syndrome (Fraser–François syndrome)** see CRYPTOPHTHALMOS SYNDROME. [George R. **Fraser** (1932– ), British geneticist; Jules **François** (1907–1984), Belgian ophthalmologist]

**fraternalistic relative deprivation** see RELATIVE DEPRIVATION.

**fraternal twins** see DIZYGOTIC TWINS.

**F ratio** (symbol: *F*) in an ANALYSIS OF VARIANCE or a MULTIVARIATE ANALYSIS OF VARIANCE, the amount of EXPLAINED VARIANCE divided by the amount of ERROR VARIANCE; that is, the ratio of between-groups variance to within-group variance. Its value determines whether to accept the NULL HYPOTHESIS stating that there is no difference between the treatment and control conditions, with a large value indicating the presence of a significant effect. Ideally, a researcher prefers to have rather small variation within each group and maximal variation between the groups in order to demonstrate significant group differences. Also called **F statistic**; **F value**.

**free and appropriate public education** provisions of U.S. educational law requiring that SPECIAL EDUCATION and related services be provided to each student with a disability at no extra cost to the student or parents. The services provided must meet standards established by the student's state of residence and be consistent with decisions that are made at an INDIVIDUALIZED EDUCATION PROGRAM (IEP) meeting and specified in a written IEP plan.

**free association** a basic process in psychoanalysis and other forms of psychodynamic psychotherapy, in which the patient is encouraged to verbalize without censorship or selection whatever thoughts come to mind, no matter how embarrassing, illogical, or irrelevant. The object is to allow unconscious material, such as inhibited thoughts and emotions, traumatic experiences, or threatening impulses, to come to the surface where they can be interpreted. Free association is also posited to help the patient discharge



some of the feelings that have given this material excessive control over him or her. See BASIC RULE; VERBALIZATION.

**free-association test** a test in which participants are offered a stimulus word and are expected to respond as quickly as possible with a word they associate with the stimulus.

**freebase 1.** *n.* a highly concentrated, chemically altered form of COCAINE that is prepared by treating cocaine with ether and ammonia. It is ingested by smoking. Although purer than CRACK cocaine, its effects are similar. **2.** *vb.* to smoke this form of cocaine.

**Freedom From Distractibility Index** an index historically calculated on the WECHSLER INTELLIGENCE SCALE FOR CHILDREN that measures short-term attention and concentration. In recent years, this index has been renamed the WORKING MEMORY INDEX to be more consistent with contemporary research and the adult versions of the Wechsler scales.

**freedom from harm** one of the basic rights of research participants that is ensured by an INSTITUTIONAL REVIEW BOARD. Freedom from harm states that a research participant should not incur undue risk as a result of taking part in a study. See also PARTICIPANTS' RIGHTS.

**freedom to withdraw** one of the basic rights of research participants that is ensured by an INSTITUTIONAL REVIEW BOARD. Freedom to withdraw allows a research participant to drop out of a study at any time without penalty. See also PARTICIPANTS' RIGHTS.

**free energy** in classical psychoanalytic theory, PSYCHIC ENERGY that is located in the ID, is mobile, and is associated with PRIMARY PROCESSES. Compare BOUND ENERGY.

**free-feeding weight** see AD LIB.

**free field** in acoustics, a sound field that has no reflective boundaries.

**free-floating anxiety 1.** a diffuse, chronic sense of uneasiness and apprehension not directed toward any specific situation or object. It may be a characteristic of a number of anxiety disorders, in particular GENERALIZED ANXIETY DISORDER. **2.** in psychoanalysis, general feelings of distress that have been disconnected from the original circumstances that caused them.

**free-floating attention** in psychoanalysis and in other forms of psychodynamic psychotherapy, the analyst's or therapist's state of evenly suspended attention during the therapeutic session. This attention does not focus on any one thing the client says, but it allows the analyst or therapist to listen to all the material being presented and tune into the client's affects and unconscious ideas. Also called **evenly hovering attention**.

**free-floating emotion** a diffuse, generalized emotional state that does not appear to be associated with any specific cause. A common example is FREE-FLOATING ANXIETY.

**free love** the practice of engaging in sexual relationships without legal ties or any other commitment to fidelity or permanence. Advocates of free love emphasize the individual's right to sexual expression and have sometimes argued for alternative forms of marriage and family relationships.

**free morpheme** in linguistics, a MORPHEME that can stand alone, as a word in its own right. Free morphemes are contrasted with BOUND MORPHEMES, such as the plural -s, which can only appear in combination.

**free nerve ending** a highly branched terminal portion of a sensory neuron. Found particularly in the different layers of skin, free nerve endings are the most common type of nerve ending and act as pain and temperature receptors.

**free operant** in OPERANT CONDITIONING, a response to a situation that may occur freely at any time.

**free-operant avoidance** see SIDMAN AVOIDANCE SCHEDULE.

**free parameter** a value that is estimated from data, usually in a modeling procedure such as STRUCTURAL EQUATION MODELING. A free parameter contrasts with a FIXED PARAMETER, which is kept at a known, specific value. For example, in CONFIRMATORY FACTOR ANALYSIS, one FACTOR LOADING for each LATENT VARIABLE is usually a fixed parameter of 1.0 and the other loadings are free parameters that are estimated.

**free play** spontaneous, unstructured play that is not controlled or directed by an adult. The various activities of a child at a playground provide an example. Compare STRUCTURED PLAY.

**free radical** an atom or molecule that has at least one "unpaired" electron in its outer shell. This makes it highly reactive and able to engage in rapid chain reactions that destabilize the molecules around it, thus causing the formation of more free radicals. Free radicals can damage cells and have been implicated in aging, inflammation, and the progression of various pathological conditions, including cancer.

**free recall** a type of memory task in which participants attempt to remember previously studied information in any order. One common finding in free-recall studies is that the first and last items that are presented in a study list are best remembered. Proponents of the DUAL-STORE MODEL OF MEMORY attribute this to the fact that the last items are still in SHORT-TERM MEMORY, and hence recoverable, whereas the first items received the most REHEARSAL and were transferred to LONG-TERM MEMORY.

**free-response question** a test or survey item that allows the respondent to answer entirely as he or she pleases, as opposed to a FIXED-ALTERNATIVE QUESTION, in which the respondent must choose from several provided options.

**free rider** an individual who contributes little or nothing to a joint endeavor but nonetheless garners the same benefits as others who contribute their fair share. The resentment caused by free riders can hamper the efficiency of a group working on a collective task (the **free-rider effect**).

**free-running rhythm** a cycle of behavior or physiological activity that occurs if external stimuli do not provide ENTRAINMENT. See also BIOLOGICAL RHYTHM.

**free variation** in linguistics, the state in which variant forms of the same linguistic unit appear on an apparently random basis. The term is most often used in phonology. For example, in colloquial speech, many speakers will articulate or not articulate the final stop consonant of the past-tense morpheme -ed (as in *walked*, *stalked*, etc.) in an entirely arbitrary way. Compare COMPLEMENTARY DISTRIBUTION.

**free will** the power or capacity of a human being for self-direction. The function of the WILL is to be inclined or disposed toward an idea or action. The concept of free will thus suggests that inclinations, dispositions, thoughts, and

actions are not determined entirely by forces over which people have no independent directing influence. Free will is generally seen as necessary for moral action and responsibility and is implied by much of our everyday experience, in which we are conscious of having the power to do or forbear (see PARADOX OF FREEDOM). However, it has often been dismissed as illusory by advocates of DETERMINISM, who hold that all occurrences, including human actions, are predetermined. See also AGENT; VOLITION.

**freezing behavior** a form of passive avoidance in which the individual remains motionless and makes no effort to run or hide. The behavior is most often observed as a severe reaction or FEAR RESPONSE to a threatening situation. Freezing behavior occurs in wild animals in response to ALARM CALLS signifying the approach of a predator or other risk. See also IMMOBILITY.

**Fregoli's phenomenon** a MISIDENTIFICATION SYNDROME in which an individual identifies a persecutor successively in different people known to him or her (e.g., a neighbor, doctor, attendant), on the delusional assumption that the persecutor is capable of changing faces. [first identified in 1927 and named for Italian actor Leopoldo Fregoli (1867–1936), who was renowned for his ability to alter his appearance]

**French kiss** a type of sexual interaction in which the participants kiss with their mouths open so that their tongues can touch. Also called **soul kiss**; **tongue kiss**.

**frenulum** *n.* (*pl.* **frenula**) any membranous fold that supports or restrains an anatomical part, such as the membrane under the tongue (**lingual frenulum**) or the fold of tissue that limits the backward movement of the FORESKIN. Also called **frenum**.

**frenzy** *n.* a temporary state of wild excitement and mental agitation, at times including violent behavior. It has been associated with MANIA and is sometimes considered synonymous with this term.

**frequency** *n.* **1.** (symbol: *f*) the number of occurrences of a phenomenon, particularly a CATEGORICAL VARIABLE such as sex. For example, it is often of interest to find the frequencies or counts of the men and women who are participating in a research study. See also RELATIVE FREQUENCY. **2.** the number of repetitions of a periodic waveform in a given unit of time. In acoustics, the frequency of a PURE TONE is the number of cycles of a sinusoidal pressure variation that occur in 1 second. The standard measure of frequency is the hertz (Hz); this replaces, and is equivalent to, cycles per second (cps). For complex periodic waveforms, that is, those consisting of more than one frequency component (e.g., a square wave), the “frequency” is the rate of repetition of the waveform and is more appropriately called the **fundamental frequency** (or **fundamental tone**, or simply the **fundamental**). The **period** of a waveform is the time to complete one repetition and is the reciprocal of the frequency (or fundamental frequency). For waveforms that are not periodic, such as white NOISE, the frequency is undefined. In such cases, the spectral characteristics should be described. See also SOUND SPECTRUM.

**frequency analysis** analysis of the frequency changes in EVENT-RELATED POTENTIALS.

**frequency discrimination** see AUDITORY DISCRIMINATION.

**frequency distribution** a tabular representation of the number of times a specific value or datum point occurs.

The left column lists the different categories of a CATEGORICAL VARIABLE or scores of a CONTINUOUS VARIABLE, and the right column lists the number of occurrences of each. When a frequency distribution is plotted on a graph, it is often called a **frequency curve**, **frequency diagram**, or FREQUENCY POLYGON. When represented mathematically via an equation, it is called a **frequency function**. Also called **frequency table**. See also CUMULATIVE FREQUENCY DISTRIBUTION; RELATIVE FREQUENCY DISTRIBUTION.

**frequency judgment** a participant's judgment of how many times a particular stimulus was presented during a test. Such judgments are used in research on memory and sensory thresholds. See also WORD-FREQUENCY STUDY.

**frequency law** see LAW OF FREQUENCY.

**frequency modulation** see MODULATION.

**frequency of response** the number of countable responses per unit of time. For example, if an individual pressed a telegraph key 500 times in 5 minutes, the frequency of response would be 100 per minute.

**frequency polygon** a graph depicting a statistical distribution, made up of lines connecting the peaks of adjacent intervals. A LINE GRAPH connecting the midpoints of the bars of a HISTOGRAM is a frequency polygon.

**frequency principle** the principle that the greater the intensity of stimulation, the greater the frequency of nerve impulses elicited and the more intense the response of the organism.

**frequency selectivity** the property of a system that enables it to be “tuned” to respond better to certain frequencies than to others. The degree of selectivity of such filtering is sometimes specified as *Q*, which is the center or best frequency of a filter divided by its bandwidth: Higher values of *Q* correspond to higher frequency selectivity. The frequency selectivity of the auditory system is a fundamental aspect of hearing and has been a major research theme for many decades. Also called **bandwidth selectivity**. See AUDITORY FILTER; CRITICAL BAND; TONOTOPIC ORGANIZATION; TUNING CURVE.

**frequency table** see FREQUENCY DISTRIBUTION.

**frequency test** a statistical procedure for assessing data that contain counts or the numbers of occurrences of various categories or classes. A common example of a frequency test is a CHI-SQUARE TEST that compares the pattern of observed counts or frequencies to those that are expected to occur.

**frequency theory** a late 19th-century theory specifying that pitch is coded by the rate at which ACTION POTENTIALS are generated by auditory neurons within the BASILAR MEMBRANE of the ear. According to this theory, the wavelength (frequency) of a tone is precisely replicated in the electrical impulses transmitted through the AUDITORY NERVE. For example, a 100 Hz tone would be signaled by 100 impulses per second in the auditory nerve. However, frequency theory cannot explain the perception of sounds above 500 Hz because the REFRACTORY PERIOD of a neuron renders it incapable of firing at a rate greater than 500 impulses per second. This discrepancy was accounted for by the later VOLLEY THEORY. Also called **telephone theory**. [proposed in 1886 by William Rutherford (1839–1899), British physiologist]

**frequentist** *n.* a researcher who approaches issues of PROBABILITY in terms of the frequency (number of occur-

rences) for a particular parameter over a period of time. This approach is contrasted with that of a BAYESIAN, who examines the data and assesses whether particular values are more credible or believable than others.

**frequentist inference** an approach to drawing conclusions from statistical samples that is based on the number of times an event is expected to occur in the long run if conditions for observing the event are held constant. It considers any research study to be one of a very large possible number of replications. Also called **classical inference**. Compare BAYESIAN INFERENCE.

**Freudian approach (Freudianism)** see PSYCHOANALYSIS.

**Freudian slip** in the popular understanding of psychoanalytic theory, an unconscious error or oversight in writing, speech, or action that is held to be caused by unacceptable impulses breaking through the EGO's defenses and exposing the individual's true wishes or feelings. See PARAPRAXIS; SLIP OF THE TONGUE; SYMPTOMATIC ACT. [Sigmund FREUD]

**Freudian theory of personality** the general psychoanalytic concept that character and personality are the product of experiences and FIXATIONS stemming from the early stages of PSYCHOSEXUAL DEVELOPMENT. See PSYCHOANALYSIS. [Sigmund FREUD]

**Frey esthesiometer** see ESTHESIOMETRY. [Maximilian von Frey (1852–1932), German physiologist]

**fricative** **1.** *adj.* denoting a speech sound made by forcing a stream of air through a narrow opening of the vocal tract against one or more surfaces, particularly the hard palate, ALVEOLAR RIDGE, teeth, or lips. A fricative has high-frequency vibrations. It may be VOICED (e.g., [v], [z], [zh]) or UNVOICED (e.g., [f], [s], [sh]). **2.** *n.* a fricative speech sound.

**Friedreich's ataxia** a hereditary, progressive form of ATAXIA (muscular incoordination) that results from the degeneration of nerves in the spinal cord and nerves that connect the spinal cord to the arms and legs. Symptoms typically appear in childhood or early adolescence and may include clumsiness, balance problems, difficulty walking, unsteady gait, slurred speech, hearing and vision loss, and rapid involuntary eye movements. [Nikolaus Friedreich (1825–1882), German neurologist]

**friendship** *n.* a voluntary relationship between two or more people that is relatively long-lasting and in which those involved tend to be concerned with meeting the others' needs and interests as well as satisfying their own desires. Friendships frequently develop through shared experiences in which the people involved learn that their association with one another is mutually gratifying.

**friend with benefits** see HOOKUP.

**fright** *n.* the emotional reaction that arises in the face of a dangerous or potentially dangerous situation or encounter. Fright differs from FEAR in that the danger is usually immediate, physical, concrete, and overwhelming. Physiological changes in the body associated with fright include trembling, widening of the eyes, and drawing away from the fear-producing stimulus.

**frigidity** *n.* in women, impairment of sexual desire or inability to achieve sexual arousal or orgasm. This term is considered offensive and has largely been abandoned in favor of FEMALE SEXUAL DYSFUNCTION. —**frigid** *adj.*

**fringe consciousness** those aspects of experience that

lack focal qualities (e.g., clarity, discriminability) but are nevertheless usually reported with a high degree of confidence. Fringe experiences vary widely, from EFFORTFULNESS and FEELINGS OF KNOWING to mystical experiences. Compare FOCAL CONSCIOUSNESS.

**fringe-focus structure** a model of consciousness in which conscious experiences typically have a momentarily clear, discriminable, focal component (see FOCAL CONSCIOUSNESS), along with a vaguer component (see FRINGE CONSCIOUSNESS).

**fringer** *n.* a person on the margins of a social group, who is neither genuinely accepted nor clearly excluded.

**Fröbelism** *n.* a method of education developed by German educator Friedrich Fröbel (1782–1852), the originator of the kindergarten system. He believed that it was important for a child's development to have an open environment that encouraged learning and physical activity.

**frog-pond effect** the tendency of high-performing individuals in a generally inferior group to evaluate themselves more favorably than do low-performing individuals in a generally superior group. Originally used to describe academic self-evaluations, the term has recently been broadened to refer to any appraisals that compare the self with local, as opposed to more general, standards. For example, a person might take particular pride in considering himself the best player on his office softball team of colleagues who are mediocre players. Yet the worst performer on an Olympic softball team might feel incompetent, even though he is among the best softball players in the world. See SELF-CONCEPT; SOCIAL COMPARISON THEORY. [term derived from the common phrase, *big fish in a small pond*]

**Fröhlich's syndrome** a disorder caused by underfunctioning of the anterior lobe of the pituitary gland (hypopituitarism), often because of tumors on the hypothalamus. Major symptoms are underdeveloped genital organs and secondary sexual characteristics, general sluggishness, and obesity; in some cases, those with Fröhlich's syndrome exhibit polyuria (frequent urination), polydipsia (frequent consumption of liquids), and intellectual disabilities. Also called **Launois-le Cleret syndrome**. [Alfred Fröhlich (1871–1953), Austrian neurologist]

**frontal** *adj.* **1.** pertaining to the front, or anterior, portion of the body or of an organ. **2.** pertaining to the frontal bone of the skull, or forehead.

**frontal association area** see PREFRONTAL CORTEX.

**frontal cortex** the CEREBRAL CORTEX of the frontal lobe. It is associated with decision making, planning, insight, judgment, the ability to concentrate, and impulse control. See also PREFRONTAL CORTEX.

**frontal eye field** a region of the brain anterior to the motor area involved in head and eye movements. A lesion in this region may result in unilateral blindness, with the effect observed on the side opposite the lesion.

**frontal gyrus** the ridge or convolution on the frontal region of a cerebral hemisphere, including the inferior, middle, and superior frontal gyri. See also INFERIOR FRONTAL GYRUS.

**frontalis muscle** a muscle that covers the scalp beneath the skin of the forehead.

**frontal lisp** see LISP.

**frontal lobe** one of the four main lobes of each cerebral

hemisphere of the brain, lying in front of the CENTRAL SULCUS. It is concerned with motor and higher order EXECUTIVE FUNCTIONS. See also PREFRONTAL LOBE.

**frontal lobe syndrome** deterioration in personality and behavior resulting from lesions in the frontal lobe. Typical symptoms include loss of initiative, inability to plan activities, difficulty with abstract thinking, perseveration, impairments in social judgment and impulse control, and mood disturbances such as apathy or mania.

**frontal lobotomy** see LOBOTOMY.

**frontal plane** see CORONAL PLANE.

**frontal release signs** the appearance in adults with frontal lobe lesions of certain primitive reflexes that are normally present only in infants and disappear within the first few months of life. These include the grasp, rooting, and sucking reflexes.

**frontal section** see CORONAL SECTION.

**front-clipping** *n.* see CLIPPING.

**frontometaphyseal dysplasia** see OTOPALATODIGITAL SPECTRUM DISORDERS.

**frontonasal dysplasia** a congenital disorder characterized by defective fusion of structures in the midline of the face. The cleft may involve the eyes, the tip of the nose, the palate, and the premaxilla. About 20% of affected individuals have some degree of intellectual disability. Also called **median-cleft-face syndrome**.

**frontotemporal dementia (FTD)** a clinical syndrome associated with shrinking of the frontal and temporal anterior lobes of the brain. Originally known as PICK'S DISEASE, the current designation of the syndrome groups together Pick's disease, primary progressive APHASIA, and SEMANTIC DEMENTIA. The symptoms of FTD fall into two patterns. One involves impaired ability to modify one's social behavior; symptoms include a lack of inhibition, repetitive or compulsive behaviors, and a lack of concern about one's personal appearance and hygiene. The second pattern primarily features symptoms of language disturbance (e.g., difficulty speaking or comprehending speech), often together with the behavioral type's symptoms. There is a strong genetic component to the disease, which often runs in families.

**frotteurism** *n.* in DSM-IV-TR, a PARAPHILIA in which an individual deliberately and persistently seeks sexual excitement by rubbing against other people. This may occur as apparently accidental contact in crowded public settings, such as elevators or lines. The person displaying this type of behavior is called a **frotteur** or a **rubber**. It is identified as **frotteuristic disorder** in DSM-5. Also called **frottage**.

**frozen form** see IDIOM.

**frozen noise** a recorded sample of NOISE.

**fruity** *adj.* denoting one of the primary odor qualities in HENNING'S ODOR PRISM.

**frustration** *n.* **1.** the thwarting of impulses or actions that prevents individuals from obtaining something they have been led to expect based on past experience, as when a hungry animal is prevented from obtaining food that it can see or smell or when a child is prevented from playing with a visible toy. Internal forces can include motivational conflicts and inhibitions; external forces can include the actions of other individuals, admonitions of parents or others, and the rules of society. **2.** the emotional

state an individual experiences when such thwarting occurs. **3.** in classical psychoanalytic theory, the damming up of PSYCHIC ENERGY, which then seeks an outlet in wish-fulfilling fantasies and dreams or in various neurotic symptoms. —**frustrate** *vb.*

**frustration-aggression hypothesis** the theory, proposed in 1939 by John DOLLARD and colleagues, that (a) frustration always produces an aggressive urge and (b) aggression is always the result of prior frustrations. Neal E. MILLER, one of the proponents of this theory, later noted that frustration can lead to several kinds of actions but maintained that the urge to aggression will become more dominant as the thwarting continues. In 1989, U.S. psychologist Leonard Berkowitz (1926– ) proposed that the frustration must be decidedly unpleasant to evoke an aggressive urge. Also called **aggression-frustration hypothesis**.

**frustration effect** see FRUSTRATIVE NONREWARD HYPOTHESIS.

**frustration tolerance** the ability of an individual to delay gratification or to preserve relative equanimity when encountering obstacles. The growth of adequate frustration tolerance generally occurs as part of a child's cognitive and affective development but may also be strengthened to more adaptive levels later in life through therapeutic intervention.

**frustrative nonreward hypothesis** the proposition that withholding previously given reinforcement of responses during operant or instrumental conditioning leads to an internal state of frustration, which sometimes paradoxically motivates the subject (the **frustration effect**), at least for a while. [proposed by Abraham Amsel (1922–2006), U.S. behavioral psychologist]

**fry** *n.* a tobacco cigarette or marijuana joint dipped into a liquid containing PCP (see EMBALMING FLUID) and then dried and smoked. This is known by various other names, including **illy** (or **illie**) and **sherm**. A **wet** is a similarly treated cigarette or joint that is smoked before it dries.

**Frye test** a test for the admissibility of scientific evidence in U.S. courts, derived from the case *Frye v. United States* (1923) in which an early form of lie-detector evidence (see POLYGRAPH) was ruled inadmissible because it had not yet "gained general acceptance in the field in which it belongs." This "general acceptance" test became the chief standard for ruling on admissibility of scientific evidence in both state and federal courts until 1993, when it was replaced by the DAUBERT TEST in most jurisdictions.

**F Scale (Fascism Scale)** a SELF-REPORT measure of AUTHORITARIAN PERSONALITY with subscales pertaining to conventionalism, authoritarian submission, authoritarian aggression, anti-intracception, superstition and stereotypy, power and toughness, destructiveness and cynicism, projectivity, and sex. The F Scale predicts anti-Semitism, ethnocentrism, racism, prejudice, and conservative political views. [devised in 1950 by German-born U.S. philosopher and social theorist Theodor Adorno (1903–1969), Polish-born U.S. psychologist Else Frenkel-Brunswick (1908–1958), and colleagues]

**FS** abbreviation for FEMALE SEXUAL DYSFUNCTION.

**FSH** abbreviation for FOLLICLE-STIMULATING HORMONE.

**FSS** abbreviation for FEAR SURVEY SCHEDULE.

**F statistic** see F RATIO.

**FT** abbreviation for fixed time. See FIXED-TIME SCHEDULE.

**FTA** abbreviation for FAULT TREE ANALYSIS.

**FTD** abbreviation for FRONTOTEMPORAL DEMENTIA.

**F test** any of a class of statistical procedures, such as ANALYSIS OF VARIANCE or MULTIPLE REGRESSION, that rely on the assumption that the calculated statistic—the F RATIO—follows the F DISTRIBUTION when the null hypothesis is true. *F* tests are tests of hypotheses about population variances or of whether REGRESSION COEFFICIENTS are zero.

**F-to-enter** *n.* in model-building procedures such as FORWARD SELECTION, the specific ratio of variances needed to justify adding a variable as a predictor. Generally, an *F*-to-enter value around 4.0 is sufficient to allow a variable to be included in an analysis.

**F-to-remove** *n.* in model-building procedures such as BACKWARD ELIMINATION or STEPWISE REGRESSION, the specific ratio of variances needed to justify keeping a variable as a predictor. Generally, an *F*-to-remove value around 4.0 is sufficient to allow a variable to be retained in an analysis.

**FTS** abbreviation for FETAL TOBACCO SYNDROME.

**FTT** abbreviation for FAILURE TO THRIVE.

**fugitive literature** see GRAY LITERATURE.

**fugue** *n.* **1.** see DISSOCIATIVE FUGUE. **2.** a brief period in which an individual appears to be in a semiconscious state, sometimes engaging in routine activity, and subsequently has no memory for events during that period. This condition is typically associated with epilepsy but may occur in other conditions, such as alcohol intoxication and catatonic excitement.

**fulfillment** *n.* the actual or felt satisfaction of needs and desires, or the attainment of aspirations. See also WISH FULFILLMENT. —**fulfill** *vb.*

**fulfillment model** a basic type of personality theory based on the assumption that the primary motivation for behavior is self-fulfillment, as manifest in a drive to realize one's innate potential. Humanistic approaches to psychology, as exemplified by the work of Abraham MASLOW and Carl ROGERS, are prominent examples of the fulfillment model. [introduced by U.S. psychologist Salvatore R. Maddi (1933– )]

**Fullerton–Cattell law** a psychophysical generalization regarding the DIFFERENCE THRESHOLD, stating that errors of observation are proportional to the square root of the magnitude of the stimulus. The Fullerton–Cattell law was proposed in 1892 as a replacement for WEBER'S LAW. [George S. Fullerton (1859–1925), U.S. philosopher; James McKeen CATTELL]

**full inclusion** the practice of providing children with disabilities with services in their home school and of educating them in a regular classroom on a permanent, full-time basis. See also LEAST RESTRICTIVE ENVIRONMENT; MAINSTREAMING.

**full model** a statistical representation that includes all of the variables of interest, or all of the main PARAMETERS (e.g., REGRESSION COEFFICIENTS), among a set of variables. For example, in STRUCTURAL EQUATION MODELING, a full model might include estimated regression parameters between a set of INDEPENDENT VARIABLES, MEDIATORS, and DEPENDENT VARIABLES. When there are as many parameters estimated in a full model as there are DEGREES OF FREEDOM, it is said to be a SATURATED MODEL. Also called **unrestricted model**.

**Full Outline of Unresponsiveness Score (FOUR)**

a rating scale used to assess the level of consciousness in patients with brain damage. Scores range from 0 to 16, with lower scores related to lower levels of consciousness. Clinicians rate patients on four domains: eye responses, motor responses, brainstem reflexes, and respiration. Unlike the GLASGOW COMA SCALE, which requires the rating of verbal responses, FOUR can be used with patients who have endotracheal intubation. [proposed in 2005 by Dutch-born U.S. neurologist Eelco F. M. Wijdicks and colleagues]

**full term** see TERM.

**fully functioning person** a person with a healthy personality, who experiences freedom of choice and action, is creative, and exhibits the qualities of EXISTENTIAL LIVING. [as defined in the CLIENT-CENTERED THERAPY of Carl ROGERS]

**fulvestrant** *n.* see ANTIOESTROGEN.

**fun** *n.* a perception of pleasure and happiness brought on by achieving one's desires from an activity.

**function** *n.* **1.** the use or purpose of something. **2.** in biology, an activity of an organ or an organism that contributes to the organism's FITNESS, such as the secretion of a sex hormone by a gonad to prepare for reproduction or the defensive behavior of a female with young toward an intruder. **3.** (symbol: *f*) a mathematical procedure that relates or transforms one number, quantity, or entity to another according to a defined rule. For example, if  $y = 2x + 1$ , *y* is said to be a function of *x*. This is often written  $y = f(x)$ . Here *y* is the dependent variable and *x* is the independent variable.

**functional** *adj.* **1.** denoting or referring to a disorder for which there is no known physiological or structural basis. In psychology and psychiatry, functional disorders are improperly considered equivalent to PSYCHOGENIC disorders. **2.** based on or relating to use rather than structure.

**functional activities** actions associated with basic daily home and work requirements: an umbrella term encompassing both ACTIVITIES OF DAILY LIVING and INSTRUMENTAL ACTIVITIES OF DAILY LIVING.

**functional age** an individual's age as determined by measures of functional capability indexed by age-normed standards. Functional age is distinct from CHRONOLOGICAL AGE and represents a combination of physiological, psychological, and social age. The functional age of a child is measured in terms of the developmental level he or she has reached. It may be compared with his or her chronological age as a means of gauging the existence and extent of any impairment or developmental problem. In older adults, it is calculated by measuring a range of variables that correlate closely with chronological age, such as eyesight, hearing, mobility, cardiopulmonary function, concentration, and memory. Following the passing of the AGE DISCRIMINATION IN EMPLOYMENT ACT, functional age, rather than chronological age, has been made a criterion for employment in some jobs.

**functional amblyopia** poor vision that occurs in an otherwise normal eye because of disuse or improper use of the eye during early life. Causes of functional amblyopia include STRABISMUS, ANISOMETROPIA, and sensory deprivation, when no image is allowed to reach the eye (e.g., in unilateral cataract).

**functional amnesia** loss of memory for events one has

personally experienced that occurs in the absence of any identifiable neurological pathology. Functional amnesia is thought to arise as a defense against anxiety and distress or as a way of escaping from specific situations. It is often used as a synonym of **psychogenic amnesia** and **DISSOCIATIVE AMNESIA**.

**functional analysis 1.** the detailed analysis of a behavior to identify contingencies that sustain the behavior. **2.** a synthesis of a client's behavior problems and the variables that are associated with or hypothesized to cause them.

**functional analytic causal model (FACM)** a vector diagram that visually presents a clinician's conjectures or theories about an individual's maladaptive behaviors, the objectives of those behaviors, and the variables affecting them. Use of FACM graphically organizes and elucidates contingencies affecting the design of therapeutic interventions and provides an alternative or supplement to clinical case conceptualization.

**functional analytic psychotherapy (FAP)** an interpersonal approach to therapy based on the theoretical framework of **RADICAL BEHAVIORISM**. Initially, the therapist generates a number of hypotheses about groups, or classes, of a client's **clinically relevant behavior (CRB)**. Such behaviors are (a) problem behaviors in a session that are like those the client engages in outside of therapy (CRB1s); (b) improvements in the client's behavior that occur in session (CRB2s); and (c) client descriptions of what variables affect his or her behavior, leading to those problems or improvements (CRB3s). It is the therapist's task to look for occurrences of CRBs, to assess the impact that CRB1s have on the therapist, and to reinforce alternative ways of interacting (CRB2s) that have a more positive impact and help meet the client's goals of improved interpersonal relationships. [developed in the 1980s by U.S. clinical psychologists Robert J. Kohlenberg (1937– ) and Mavis Tsai]

**functional approach to attitudes** a theoretical perspective postulating that attitudes are formed to serve one or more different functions and that these functions can influence such processes as **ATTITUDE CHANGE** and **ATTITUDE-BEHAVIOR CONSISTENCY**. See also **EGO-DEFENSIVE FUNCTION OF AN ATTITUDE**; **KNOWLEDGE FUNCTION OF AN ATTITUDE**; **SOCIAL-ADJUSTIVE FUNCTION OF AN ATTITUDE**; **UTILITARIAN FUNCTION OF AN ATTITUDE**; **VALUE-EXPRESSIVE FUNCTION OF AN ATTITUDE**.

**functional asymmetry** activity-related differences between the two cerebral hemispheres, as demonstrated by disparities in various behavioral competencies such as task performance. For example, studies have shown a right-ear advantage for word stimuli, indicating left-hemisphere superiority for language processing.

**functional autonomy 1.** the ability of a person to perform independently the various tasks required in daily life, a core concept in rehabilitation. See **ACTIVITIES OF DAILY LIVING**; **INSTRUMENTAL ACTIVITIES OF DAILY LIVING**. **2.** as defined in 1973 by Gordon W. ALLPORT, a general principle of motivation stating that during the performance of purposeful, goal-oriented behavior, various derivative drives emerge as independent units from the original drive that inspired the behavior. For example, studying motivated by the desire to obtain high grades may be gradually replaced by the desire for (and therefore pursuit of) knowledge for its own sake.

**functional behavioral assessment (FBA) 1.** an assessment approach that identifies the functions fulfilled by

a particular maladaptive or problematic behavior by examining the circumstances and consequences associated with its occurrence. The circumstances (i.e., **ANTECEDENTS**), behavior, and consequences are typically defined in measurable terms, and combinations of particular types of antecedents and consequences may be presented systematically as part of the assessment. Thus, circumstances and consequences (i.e., motivational factors) associated with increases or decreases in the particular behavior can be identified. Results of these assessments provide information of immediate utility in designing interventions or treatments to address the behavior. **2.** any of a variety of assessment methods used in **APPLIED BEHAVIOR ANALYSIS**.

**functional blindness** visual deterioration without any apparent change or disease affecting the structural integrity of the visual system: one of the most frequent symptoms in **SOMATIZATION DISORDER**. In addition to loss of acuity, visual functional phenomena may include photophobia; burning, painful, or tired eyes; monocular diplopia (double vision); **PTOSIS**; **BLEPHAROSPASM**; **CONVERGENCE** problems; and severe concentric visual field constriction in one or both eyes. Despite the symptoms, the pupils continue to react to light, and the patient automatically avoids (i.e., is able to detect and thereby avoid) objects that would cause injury. Complete functional blindness is rare. The condition was formerly known as **hysterical blindness** or **psychic blindness**.

**functional brain imaging** the use of **BRAIN IMAGING** techniques to localize areas of cognitive or emotional activation. See **FUNCTIONAL MAGNETIC RESONANCE IMAGING**; **POSITRON EMISSION TOMOGRAPHY**.

**functional classification** see **COMPLEMENTARY CLASSIFICATION**.

**functional communication training** a **BEHAVIOR THERAPY** technique used with children and adults diagnosed with developmental impairments, such as autism or intellectual disability, who are exhibiting aggressive, self-injurious, or highly disruptive behavior. The technique assesses the function that the negative behavior serves and uses positive reinforcement to replace it with more appropriately adaptive communication or behavior that meets the same need.

**functional conformance** in **ENVIRONMENTAL DESIGN**, the provision of the objects and equipment required to adapt an environment to a given set of functional uses, as, for example, by furnishing a study with a desk, lights, and a comfortable chair.

**functional connectivity mapping** recording (e.g., via **FUNCTIONAL MAGNETIC RESONANCE IMAGING** or **POSITRON EMISSION TOMOGRAPHY**) the connections between noncontiguous brain regions during particular activities or at rest. A variety of statistical methods have been developed to analyze the resultant maps.

**functional data analysis (FDA)** an area of statistics in which mathematical **FUNCTIONS** are used to study how things change across time. It usually involves the use of derivatives to form curves that model the pattern of change in some phenomenon (e.g., health, achievement).

**functional deafness** loss of hearing that is not associated with any known structural abnormality in the auditory system.

**functional disorder** a disorder for which there is no known physiological basis. In psychology and psychiatry,

functional disorders are improperly considered equivalent to PSYCHOGENIC DISORDERS.

**functional distance** the degree to which the arrangement or configuration of residential facilities influences the probability of unplanned social interaction. Physical distance can affect functional distance, as can the juxtaposition of entrances and proximity to gathering points (e.g., a lounge, common mailboxes, the intersection of hallways).

**functional dyspareunia** a sexual dysfunction of men or women in which there is recurrent and persistent genital pain during coitus but no structural genital abnormality to account for the pain.

**functional dyspepsia** see DYSPEPSIA.

**functional dyspnea** see DYSPNEA.

**functional electric stimulation (FES)** the application of electric current to peripheral nerves through the use of electrodes in order to generate muscle contractions, which can create functional movements in the extremities of an individual. For example, FES has been used to enable individuals with PARAPLEGIA to pedal adapted exercise bicycles or, in combination with custom leg braces, to walk.

**functional family therapy** a type of FAMILY THERAPY that focuses on family interaction patterns and on the benefits family members may derive from problem behavior. Using reframing and COGNITIVE BEHAVIOR THERAPY methods, functional family therapy focuses primarily on at-risk and behaviorally troubled youth and their families.

**functional fixedness** the tendency to perceive an object only in terms of its most common use. For example, people generally perceive cardboard boxes as containers, thus hindering them from potentially flipping the boxes over for use as platforms upon which to place objects (e.g., books). See ALTERNATE-USES TEST.

**functional grammar** an approach to GRAMMAR using categories that reflect nonlinguistic factors, such as intention and social context, rather than categories based solely on a formal linguistic analysis. Compare FORMAL GRAMMAR. See also FORM-FUNCTION DISTINCTION; PRAGMATICS.

**functional hyperinsulinism** see HYPOGLYCEMIA.

**functional illiteracy** see ILLITERACY.

**Functional Independence Measure (FIM)** an instrument used in rehabilitation to evaluate specific routine motor, cognitive, and self-care skills and provide a measure of FUNCTIONAL STATUS. It consists of 18 items related to eating, grooming, bathing, dressing, toileting, bladder and bowel management, transfers, locomotion, comprehension, expression, social interaction, problem solving, and memory that are each rated on a 7-point scale ranging from *dependent* to *independent*.

**functional invariant** in the PIAGETIAN THEORY of cognitive development, either of the processes of accommodation and assimilation, which are conceptualized as characterizing all biological systems and operating throughout the lifespan.

**functionalism** *n.* a general psychological approach that views mental life and behavior in terms of active adaptation to environmental challenges and opportunities. Functionalism was developed at the University of Chicago by psychologists John DEWEY, James R. ANGELL, and Harvey A. CARR at the beginning of the 20th century as a revolt against the atomistic point of view of STRUCTURALISM,

which limited psychology to the dissection of states of consciousness and the study of mental content rather than mental activities. The focus of functionalism reveals its debt to evolutionary concepts, to the ACT PSYCHOLOGY of Franz BRENTANO, and to the approach detailed by William JAMES. Functionalism emphasizes the causes and consequences of human behavior; the union of the physiological with the psychological; the need for objective testing of theories; and the applications of psychological knowledge to the solution of practical problems, the evolutionary continuity between animals and humans, and the improvement of human life. Also called **functional psychology**. See also CHICAGO SCHOOL.

**functionalist approach to emotion** the view that emotional behavior adaptively serves the function of establishing, maintaining, or altering the relation between an organism and its environment. For example, a hiker's startled reaction to losing footing on a rocky path is an affective response that helps to focus the hiker's attention and efforts to reestablish footing in the environment. [proposed in 1984 by U.S. developmental psychologists Joseph J. Campos and Karen Caplovitz Barrett]

**functional job analysis (FJA)** a form of JOB ANALYSIS in which tasks are rated on the degree of complexity they entail in dealing with people, data, and things. Such an analysis is commonly used in drawing up PERSONNEL SPECIFICATIONS and JOB DESCRIPTIONS.

**functional leader** any member of a group, whether a designated leader or not, who performs the activities associated with a leadership role, including developing and maintaining communication; recruiting members and satisfying their interpersonal needs; defining purposes, objectives, and goals; and assigning TASK ROLES to improve team performance. Compare NOMINAL LEADER.

**functional level** see OPTIMAL LEVEL.

**functional limitation** restriction or lack of ability in performing an action as a result of a disability. For example, a person who is unable to move safely about his or her home or community or is otherwise unable to travel independently has a functional limitation in mobility.

**function allocation** the systematic process of applying a knowledge of HUMAN FACTORS to determine those system functions that can be performed by human operators and those that require automation, or that require an interaction between the human operator and the equipment. Function allocation is carried out early in the system DEVELOPMENT CYCLE. See also ADAPTIVE TASK ALLOCATION; CLUMSY AUTOMATION.

**functional magnetic resonance imaging (fMRI; functional MRI)** a form of MAGNETIC RESONANCE IMAGING used to localize areas of cognitive activation, based on the correlation between brain activity and blood property changes linked to local changes in blood flow to the brain. During periods of cognitive activation, blood flow is always increased to a greater extent than oxygen extraction. In consequence, the proportion of oxygenated hemoglobin in the red blood cells transiently increases in an active region, leading to a local increase in the signal detected by fMRI. See BLOOD OXYGENATION LEVEL-DEPENDENT.

**functional measurement** a procedure that measures the subjective experience of stimuli as that experience changes across different contexts. Two or more stimuli are presented in various combinations to an observer who assigns ratings to each. These ratings are then integrated

according to a simple arithmetical law discovered by examining the way in which the observer's ratings change when the combination of stimuli is changed.

**functional moneme** see FUNCTION WORD.

**functional neurological symptom disorder** see CONVERSION DISORDER.

**functional operant** the class of responses whose probability is changed by the imposition of an OPERANT contingency. For example, lever presses with a force greater than 0.2 N may be required for reinforcement. Presses with forces greater than 0.2 N will increase in frequency, as will the frequency of presses just (but not far) below that value. These latter presses are part of the functional operant class. Compare DESCRIPTIVE OPERANT.

**functional pain** pain with no known physiological cause.

**functional plasticity** the ability of the brain to adapt to loss of or damage to tissue by transferring all or part of the functions previously performed by those injured areas to other regions. The degree to which the brain is able to do this successfully has been called **functional reserve** and is thought to depend on several factors, including age and the health status of the brain.

**functional plateau** a relatively stable level of physical or psychological functioning, characteristic of a person in a given developmental state or set of environmental circumstances.

**functional psychology** see FUNCTIONALISM.

**functional psychosis** **1.** a psychotic state for which no specific neurological or other physical pathology has been demonstrated. **2.** an obsolete name for any severe mental disorder for which no specific neurological or other physical pathology has been demonstrated.

**functional reorganization** changes that occur after a brain injury to enable other areas of the brain to take over all or part of the functions performed by the injured area. See also FUNCTIONAL PLASTICITY.

**functional selection** the survival, over time, of capacities that are more useful to the individual, coupled with the disappearance of capacities that are less useful.

**functional skills** activities that develop from aptitudes, such as mechanical ability, artistic talent, and writing.

**functional status** a measure of an individual's ability to perform ACTIVITIES OF DAILY LIVING and INSTRUMENTAL ACTIVITIES OF DAILY LIVING independently, used as an assessment of the severity of that individual's disability.

**functional stimulus** in stimulus–response experiments, the characteristic of the stimulus that actually produces a particular effect on the organism and governs its behavior. This may be different from the NOMINAL STIMULUS as defined by the experimenter. For example, if an experimenter presents a blue square to a pigeon as a nominal stimulus, the functional stimulus may simply be the color blue. Also called **effective stimulus**.

**functional types** in Carl JUNG's ANALYTIC PSYCHOLOGY, four personality types based on functions of the ego. Jung identified four functions, one of which typically dominates the conscious ego while the others remain unconscious. The individuated person (see INDIVIDUATION) will have integrated all the functions into his or her conscious personality. The functional types are (a) the FEELING TYPE; (b) the

THINKING TYPE; (c) the SENSATION TYPE; and (d) the INTUITIVE TYPE. See QUATERNITY. See also ATTITUDINAL TYPES.

**functional unity** the state or condition in which a set of parts, traits, or processes work together as an integrated unit.

**functional universal** see PSYCHOLOGICAL UNIVERSAL.

**functional vaginismus** a sexual dysfunction characterized by recurrent and persistent involuntary spasms of the musculature of the outer third of the vagina, which interfere with coitus and are not caused by a physical disorder.

**function coefficient** a quantitative value that multiplies a variable and that can change depending on other variables or COVARIATES. A function coefficient differs from other coefficients (e.g., a REGRESSION COEFFICIENT) in that it can vary, whereas the others are constant over all entities or participants. A function coefficient is often used in such statistical methods as REGRESSION ANALYSIS and TIME-SERIES ANALYSIS, particularly when the data change over time or space.

**function word** in a language, a word that has little or no meaning of its own but plays an important grammatical role: Examples include the articles (*a, an, the*), prepositions (*in, of, etc.*), and conjunctions (*and, but, etc.*). Function words are of high frequency, are typically short, and do not generally admit new members (see CLOSED-CLASS WORDS). The distinction between function words and CONTENT WORDS is of great interest to the study of language disorders, language acquisition, and psycholinguistic processing. Psycholinguists are especially interested in function words because of their role in facilitating sentence parsing. In combination with nonsense words, they can be used to create sentence frames whose GRAMMATICALITY can be recognized but whose content is meaningless, such as *He zibbed from the fluv by sibbing the flix*. Also called **empty word**; **functional moneme**; **functor**; **relational word**; **structure word**.

**fundamental attribution error** in ATTRIBUTION THEORY, the tendency to overestimate the degree to which an individual's behavior is determined by his or her abiding personal characteristics, attitudes, or beliefs and, correspondingly, to minimize the influence of the surrounding situation on that behavior (e.g., financial or social pressures). There is evidence that this tendency is more common in some societies than in others. Also called **correspondence bias**; **overattribution bias**. See also ULTIMATE ATTRIBUTION ERROR. [coined by U.S. social psychologist Lee D. Ross (1942– )]

**fundamental frequency** see FREQUENCY.

**Fundamental Interpersonal Relations Orientation–Behavior Scale (FIRO–B)** a self-report inventory to assess a person's interactional needs in a group setting. It evaluates both expressed (demonstrated to others) and wanted (desired from others) dimensions for each of three fundamental social needs—affection, control, and inclusion—via statements that the respondent grades from 0 to 9, with larger numbers reflecting greater importance of the characteristic. Initially developed in 1958 by U.S. psychologist William C. Schutz (1925–2002), the FIRO–B was revised a few decades later to reflect modifications of the FUNDAMENTAL INTERPERSONAL RELATIONS ORIENTATION THEORY upon which it is based. Both the revised version, called **FIRO Element B**, and the original version of the tool are



widely used in management training, leadership development, and other areas. A version of the instrument for children aged 9 to 13 years (**FIRO-BC**) has been created as well.

**fundamental interpersonal relations orientation theory (FIRO theory)** a theory explaining the pattern of interactions among members of a group in terms of three interpersonal needs of the group members: the need for inclusion (i.e., to belong to and be accepted by the group), the need for control (i.e., to direct the group's activities), and the need for affection. [proposed by U.S. psychologist William C. Schutz (1925–2002)]

**fundamental lexical hypothesis** see LEXICAL HYPOTHESIS.

**fundamental need** see PHYSIOLOGICAL NEED.

**fundamental rule** see BASIC RULE.

**fundamental science** see BASIC SCIENCE.

**fundamental skill 1.** the ability that is necessary in order to perform a task or understand an idea because it is a foundation for other skills or ideas. **2.** a basic ability usually considered necessary for competent functioning in society (e.g., reading, basic mathematics, essential communication skills).

**fundamental symptoms** according to Eugen BLEULER, the four primary symptoms of schizophrenia: abnormal associations in thinking, autistic behavior and thinking, abnormal affect (including flat and inappropriate affect), and ambivalence. These symptoms are also known as the **Four As**. Compare SECONDARY SYMPTOMS.

**fundamental tone** see FREQUENCY.

**fungiform papillae** swellings on the anterior surface (front) of the tongue, in humans numbering about 200 and each shaped like a mushroom. About half the fungiform papillae lack TASTE BUDS; the others each contain from 1 to 36 taste buds, with a mean of 3. Receptors in fungiform papillae are particularly sensitive to SALTY and SWEET chemicals. See also PAPILLA.

**funnel interview** see AIDED RECALL.

**fun-seeking** *n.* see CARVER AND WHITE'S BIS/BAS SCALES.

**furor** *n.* a sudden outburst of rage or excitement during which an irrational act of violence may be committed. In rare cases of epilepsy, the occurrence of furor takes the place of a tonic-clonic or complex partial seizure; this is known as **epileptic furor**. See also EXPLOSIVE PERSONALITY; INTERMITTENT EXPLOSIVE DISORDER; ISOLATED EXPLOSIVE DISORDER.

**fusiform gyrus** a spindle-shaped ridge on the inferior (lower) surface of each TEMPORAL LOBE in the brain. It lies between the inferior temporal gyrus and the PARAHIPPOCAMPAL GYRUS and is involved in high-level visual processing. The **fusiform face area (FFA)**, for example, is believed to specialize in face recognition. See also OCCIPITAL LOBE.

**fusion** *n.* the blending into a unified whole of two or more components or elements. This general meaning is applied in a variety of different psychological contexts. In perception, for example, it may denote a blending of sounds received by the two ears (**binaural fusion**) or of images falling on the two retinas (**binocular fusion**), whereas in psychoanalytic theory, it denotes instinctual fusion, the merging of different INSTINCTS, as in the union of sexual and ag-

gressive drives in SADISM. The term is also sometimes applied to a state in which the normal differentiation between the self and the environment seems to recede or disappear, so that the individual experiences a sense of oneness with other individuals or with nature. —**fuse** *vb.*

**fusional language** in LINGUISTIC TYPOLOGY, a language that forms words by the fusion (rather than the AGGLUTINATION) of MORPHEMES, so that the constituent elements of a word are not kept distinct. Fusional languages, such as Latin and Greek, tend to have numerous grammatical inflections, with each form serving several distinct functions. Also called **synthetic language**. Compare AGGLUTINATIVE LANGUAGE; ISOLATING LANGUAGE.

**fusion frequency** see CRITICAL FLICKER FREQUENCY.

**future lives** in perspectives deriving from a belief in REINCARNATION, those of a human being's multiple lives that have yet to be lived. See also METEMPSYCHOSIS.

**future-mindedness** *n.* the ability to engage in means-ends thinking about the future, that is, to think ahead to what the future may hold and how it might come to pass.

**future orientation** a time perspective that is focused on the future, especially on how to achieve one's desired goals.

**future shock** the personal confusion and social disorientation that accompany very rapid technological and social change. [defined by U.S. futurist Alvin Toffler (1928– )]

**fuzzy logic** a logic-based KNOWLEDGE REPRESENTATION scheme founded on the axiom that set membership is based on a probability distribution (as opposed to traditional SET THEORY, in which an element is either in a set or not in that set). An example of fuzzy logic is that a certain person can be a member of the set of tall people with 75% confidence and also be a member of the set of short people with 5% confidence. Fuzzy logic also breaks the assumption of the excluded middle in philosophy, in that an element can be a member of both a set and the opposite of that set at the same time. Fuzzy logic is often used to support the design of EXPERT SYSTEMS as well as to control algorithms. [first proposed in 1965 by Romanian-born computer engineer Lotfi A. Zadeh (1921– )]

**fuzzy set theory** an approach to SET THEORY that allows gradations of membership in a set, instead of only assigning a 0 or a 1 that would indicate nonmembership or absolute membership, respectively. Some phenomena are more readily modeled with fuzzy set theory than conventional binary set theory. For example, in designation of a mental illness, fuzzy set theory may be employed to allow for cases in which individuals could be classified somewhere between having an absence and a full diagnosis of a particular condition.

**fuzzy trace theory** a theory proposing that information is encoded on a continuum from precise, literal memory representations (**verbatim traces**) to gistlike, imprecise representations (**fuzzy traces**), with verbatim traces less easily accessed, generally requiring more effort to use, and more susceptible to interference and forgetting than fuzzy traces. The theory also proposes that developmental differences in many aspects of cognition can be attributed to age differences in encoding and to differences in sensitivity to OUTPUT INTERFERENCE. [proposed by U.S. psychologists Charles Brainerd (1944– ) and Valerie Reyna (1955– )]

**F value** see F RATIO.

# Gg

**g** symbol for GENERAL FACTOR.

**GA** abbreviation for GAMBLERS ANONYMOUS.

**GABA** abbreviation for GAMMA-AMINO BUTYRIC ACID.

**GABA agonist** a compound that exerts an agonistic (augmentative) effect at gamma-aminobutyric acid (GABA) receptor sites (see  $GABA_A$  RECEPTOR;  $GABA_B$  RECEPTOR) or on the action of GABA. Several classes of GABA agonists exist. Direct GABA agonists (e.g., muscimol) act at the GABA binding site on the receptor; indirect GABA agonists facilitate, in various ways, the release or activity of GABA. Of the indirect GABA agonists, the BENZODIAZEPINES, which act as allosteric modulators (see ALLOSTERIC MODULATION) at the GABA receptor complex, are in the most common clinical use.

**GABA antagonist** a substance that exerts an antagonistic (inhibitive) effect at gamma-aminobutyric acid (GABA) receptor sites (see  $GABA_A$  RECEPTOR;  $GABA_B$  RECEPTOR) or on the action of GABA. Like GABA AGONISTS, GABA antagonists can be direct or indirect. Direct GABA antagonists block the GABA receptor; the best known of these is BICUCULLINE, which acts as a competitive antagonist for GABA at its receptor site. Indirect GABA antagonists include PICROTOXIN, which is a noncompetitive antagonist at the  $GABA_A$  receptor complex and blocks the effects of GABA on the receptor complex.

**$GABA_A$  receptor** one of the two main types of receptor protein that bind the neurotransmitter GAMMA-AMINO BUTYRIC ACID (GABA), the other being the  $GABA_B$  RECEPTOR. It is located at most synapses of most neurons that use GABA as a neurotransmitter. The predominant inhibitory receptor in the central nervous system, it functions as a chloride channel (see ION CHANNEL). GABA AGONISTS, such as the barbiturates and benzodiazepines, enhance the binding of GABA to  $GABA_A$  receptors, allowing for increased conductance of chloride through the ion channel and thereby hyperpolarizing the neuron and inhibiting its activity. GABA ANTAGONISTS, such as bicuculline and picrotoxin, block the inhibitory effects of GABA at this receptor. Many other substances, including alcohol (ethanol), are thought to exert at least part of their effect via interaction at the  $GABA_A$  receptor.

**$GABA_B$  receptor** one of the two main types of receptor protein that bind the neurotransmitter GAMMA-AMINO BUTYRIC ACID (GABA), the other being the  $GABA_A$  RECEPTOR.  $GABA_B$  receptors, which are G PROTEIN-coupled receptors, are less plentiful in the brain than  $GABA_A$  receptors and do not have binding sites for benzodiazepine or barbiturate GABA agonists. Activation of  $GABA_B$  receptors results in relatively long-lasting neuronal inhibition, but few psychotropic substances exert their effect at these receptors: BACLOFEN is a relatively selective agonist at  $GABA_B$  receptors and is used clinically as a skeletal muscle relaxant.

**gabapentin** *n.* a drug used for the treatment of seizures (see ANTICONVULSANT) and for the relief of pain associated with shingles (see HERPETIC NEURALGIA). Its mechanism of action is unknown: It is a chemical analog of the neuro-

transmitter gamma-aminobutyric acid (GABA) that is a potent ligand at alpha 2 delta sites on voltage-gated N and P/Q channels. Gabapentin is currently being investigated for the treatment of certain other disorders, including restless-legs syndrome, anxiety disorders, and fibromyalgia, but it is largely discredited as a mood stabilizer for bipolar disorder. Side effects are primarily sedation, dizziness, ATAXIA, and fatigue; abrupt withdrawal may precipitate seizures. U.S. trade name: **Neurontin**.

**GAD** abbreviation for GENERALIZED ANXIETY DISORDER.

**GAF Scale** abbreviation for GLOBAL ASSESSMENT OF FUNCTIONING SCALE.

**GAI** abbreviation for GUIDED AFFECTIVE IMAGERY.

**Gaia hypothesis** the hypothesis that the earth, its living things, and its physical environments constitute a single self-regulating entity. In contrast to Darwinian theories of evolution, which hold that living things adapt themselves to the extant environment, the hypothesis suggests that the earth has adapted to, and been transformed by, the living things that are a part of it. This perspective has been influential in modern ecological movements but is rejected by mainstream scientists. The hypothesis is named for Gaia, the Earth, a primordial Greek goddess who emerged from Chaos. [formulated and named by British scientist James E. Lovelock (1919– )]

**gain-loss theory** a theory of interpersonal attraction stating that people's like (or dislike) for another person is more strongly affected by the degree to which they believe they have gone up (or down) in that individual's estimation than by the unvarying degree to which they think they are attractive (or unattractive) to that person. [first studied in 1965 by U.S. psychologists Elliot Aronson (1932– ) and Darwyn E. Linder (1939– )]

**gain score** see DIFFERENCE SCORE.

**gainsharing** *n.* a reward system in which employees are provided with monetary incentives in the form of bonuses that are tied to the performance of a business unit or organization. See INCENTIVE SYSTEM; SCANLON PLAN. See also AGENCY THEORY.

**gait** *n.* a manner of walking.

**gait apraxia** impairment or loss of the ability to walk that does not involve sensory impairment or paralysis.

**galactopoiesis** *n.* see LACTATION.

**galactorrhea** *n.* abnormal expression of breast milk, which may occur either in women at times other than when nursing or in men. Lactation is stimulated by the pituitary hormone PROLACTIN, and the neurotransmitter dopamine normally acts to inhibit the release of prolactin. Therefore, administration of DOPAMINE-RECEPTOR ANTAGONISTS (e.g., conventional antipsychotics), which inhibit the effects of dopamine, may cause galactorrhea. Pituitary tumors or injury to the pituitary gland, causing excessive secretion of prolactin, may also result in galactorrhea. The dopamine-receptor agonist BROMOCRIPTINE may be used to treat the condition.

**galactosemia** *n.* an autosomal recessive disease in which the body is unable to metabolize the sugar galactose, which therefore accumulates in the blood. Untreated, this results in cataracts, jaundice, lethargic and hypotonic behavior, and intellectual disability; the condition is associated with a high infant death rate. Treatment is based on restricted intake of dietary galactose.

**galanin** *n.* a NEUROPEPTIDE that is implicated in a variety of functions, including normal growth of the nervous system, recovery of function after nerve injury, and regulation of appetite.

**galantamine** *n.* an inhibitor of the enzyme acetylcholinesterase, with additional actions modulating nicotinic receptors directly, that is used for the treatment of mild to moderate Alzheimer's disease (see COGNITIVE ENHANCER). Although galantamine and other acetylcholinesterase inhibitors do not reverse symptoms of dementia, they have been demonstrated to temporarily slow progression of the disease. U.S. trade name: **Razadyne**.

**Galton bar** an instrument that measures the DIFFERENCE THRESHOLD (just noticeable difference) for visual linear distances. [Francis GALTON]

**Galton's questionnaire** a set of questions sent by Francis GALTON to 200 eminent men of science in Britain. The recipients were asked about matters ranging from their physiology (e.g., hat size) to their religious and political background and their reasons for undertaking a career in science. This study, published in 1874 as *English Men of Science*, is acknowledged as the first use of a questionnaire for psychological research.

**galvanic skin response (GSR)** a change in the electrical properties (conductance or resistance) of the skin in reaction to stimuli, owing to the activity of sweat glands located in the fingers and palms. Though strictly an indication of physiological arousal, the galvanic skin response is widely considered a reflection of emotional arousal and stress as well. Also called **electrodermal response (EDR)**; **psychogalvanic reflex** or **response (PGR)**.

**galvanotropism** *n.* an orienting response of an organism toward electrical stimulation. It is distinct from **galvanotaxis**, which is active, directed movement of an organism in response to electrical stimulation. —**galvanotropic adj.**

**GAM** abbreviation for GENERALIZED ADDITIVE MODEL.

**Gamblers Anonymous (GA)** an organization of men and women who share experiences, strength, and hope with each other to recover from compulsive gambling, following the TWELVE-STEP PROGRAM. See GAMBLING DISORDER; PATHOLOGICAL GAMBLING.

**gambler's fallacy** a failure to recognize the independence of chance events, leading to the mistaken belief that one can predict the outcome of a chance event on the basis of the outcomes of past chance events. For example, a person might think that the more often a tossed coin comes up heads, the more likely it is to come up tails in subsequent tosses, although each coin toss is independent of any other and the true probability of the outcome of any toss is still just .5.

**gambling disorder** *DSM-5's* term for PATHOLOGICAL GAMBLING, categorized as a nonsubstance-related addiction rather than an impulse-control disorder (as in *DSM-IV-TR*). *DSM-5* criteria for the disorder include persistent, recurrent gambling not related to manic episodes, along with significant impairment or distress. Associated behaviors

may include betting increasing amounts of money, inability to limit or stop gambling, and preoccupation with gambling.

**game** *n.* **1.** a social interaction, organized play, or transaction with formal rules. See ZERO-SUM GAME. **2.** in psychotherapy, a situation in which members of a group take part in some activity designed to elicit emotions or stimulate revealing interactions and interrelationships. In PLAY THERAPY, games are often used as a projective or observational technique. **3.** in TRANSACTIONAL ANALYSIS, a recurrent and often deceitful ploy adopted by an individual in his or her dealings with others. **4.** in GESTALT THERAPY, an exercise or experiment designed to increase self-awareness, such as acting out frightening situations or participating in the HOT-SEAT TECHNIQUE.

**game reasoning** the reasoning that governs acceptable behavior within a sporting context. As sport is deemed to be outside real life, the level of morality applied to behavior in sport is different from and usually lower than that applied to behavior in real life. See BRACKETED MORALITY.

**gamete** *n.* either of the female or male reproductive cells that take part in fertilization to produce a zygote. In humans and other animals, the female gamete is the OVUM and the male gamete is the SPERMATOZOON. Gametes contain the HAPLOID number of chromosomes rather than the DIPLOID number found in body (somatic) cells. See also GERM CELL.

**gamete intrafallopian transfer (GIFT)** an alternative to IN VITRO FERTILIZATION in which ova and sperm are introduced directly into the fallopian tubes, where fertilization takes place. Compare ZYGOTE INTRAFALLOPIAN TRANSFER.

**game theory** a branch of mathematics concerned with the analysis of the behavior of decision makers (called *players*) whose choices affect one another. Game theory is often used in both theoretical modeling and empirical studies of conflict, cooperation, and competition, and it has helped structure interactive decision-making situations in numerous disciplines, including economics, political science, organizational and social psychology, and ethics. A simple game theory example is a scenario from a reality television show in which the final two players are each asked privately to make a decision to share or keep the entire game prize. The players are told that the outcome will be decided by the following rules: (a) If one player decides to keep the entire prize and the other decides to share, then the first player gets the entire prize; (b) if both players decide to share the prize, then the prize is split; and (c) if both players decide to keep the entire prize, then both leave empty-handed. The players must therefore base their decisions on what they think the other will choose to do.

**gametogenesis** *n.* the process resulting in the formation of GAMETES from GERM CELLS, which normally involves MEIOSIS. In mammals, gametogenesis in the female is known as OOGENESIS and occurs in the ovaries; in the male, it is called SPERMATOGENESIS and occurs in the testes.

**gamma** (symbol:  $\gamma$ ) *n.* **1.** the distance of a stimulus from the threshold in a psychophysical procedure. **2.** any of several different statistical indices, most commonly GOODMAN-KRUSKAL'S GAMMA.

**gamma alcoholism** see JELLINEK'S ALCOHOLISM SPECIES.

**gamma-aminobutyric acid (GABA)** a major inhibitory NEUROTRANSMITTER in the mammalian nervous sys-

tem and found widely distributed in both invertebrate and vertebrate nervous systems. It is synthesized from the amino acid GLUTAMIC ACID. See also GABA<sub>A</sub> RECEPTOR; GABA<sub>B</sub> RECEPTOR.

**gamma-aminobutyric acid agonist** see GABA AGONIST.

**gamma-aminobutyric acid antagonist** see GABA ANTAGONIST.

**gamma coherence** see GAMMA SYNCHRONY.

**gamma-cystathionase deficiency** see CYSTATHIONINURIA.

**gamma distribution** a pattern of data that can be depicted on vertical and horizontal axes when information is known about two parameters, scale and shape, both of which are values equal to zero or higher. For example, a **standard gamma distribution** is one in which the shape and location parameters of the continuous probability function are 0 and 1, respectively. Gamma distributions are common in BAYESIAN statistics and are often used to describe waiting times and reaction times.

**gamma-endorphin** *n.* see ENDORPHIN.

**gamma-hydroxybutyrate** *n.* see GHB.

**gamma motor neuron** see MOTOR NEURON.

**gamma movement** see APPARENT MOVEMENT.

**gamma synchrony** the coordinated oscillations of cortical populations of neurons at frequencies from 25 to 60 Hz (GAMMA WAVES). This pattern of electrical activity, as recorded via intracranial electrodes or scalp ELECTROENCEPHALOGRAPHY, predominates during periods of focused mental activities. Growing evidence suggests that gamma synchrony may be a general mechanism for the integration of cognitive processes. Cross-frequency synchrony, including gamma synchrony, has been suggested as the neural correlate of consciousness. **Gamma coherence** is gamma synchrony with a brief phase lag.

**gamma wave** in the brain's electromagnetic field activity, a type of low-amplitude BRAIN WAVE ranging from 25 to 60 Hz (peaking near 40 Hz) that is associated with cognitive activities such as perception and learning. Also called **gamma rhythm**.

**gamonomania** *n.* an abnormally strong desire or urge to marry.

**-gamy** *suffix* marriage (e.g., POLYGAMY).

**gang** *n.* a social group composed of members with a high degree of personal contact who share common interests and standards of behavior, which in some cases (e.g., street gangs) are antisocial.

**ganglion** *n.* (*pl.* **ganglia**) a collection of CELL BODIES of neurons that lies outside the central nervous system (the BASAL GANGLIA, however, are an exception). Many invertebrates have only distributed ganglia and no centralized nervous system. Compare NUCLEUS. —**ganglionic** *adj.*

**ganglion cell** see RETINAL GANGLION CELL.

**ganglionic blocking agent** any of a group of drugs that inhibit the action of the neurotransmitter ACETYLCHOLINE at synapses in the AUTONOMIC GANGLIA. Among other effects, this causes a decrease in heart rate and a lowering of blood pressure, and these drugs were at one time widely used in the treatment of hypertension. However, because

of the severity of their side effects, their use is now rare. See MECAMYLAMINE.

**ganglionic layer** see CORTICAL LAYERS.

**ganglioside** *n.* any of a group of glycosphingolipids (sugar-containing lipids) that occur mainly in the tissues of the central nervous system. —**gangliosidic** *adj.*

**gangliosidosis** *n.* a disorder of lipid metabolism marked by the excessive accumulation of gangliosides in the nervous system. Gangliosidosis occurs in a number of different forms, each associated with a specific ganglioside; TAY-SACHS DISEASE is one type of gangliosidosis.

**ganja** *n.* one of the more potent forms of CANNABIS, made from the dried flowering tops of female cannabis plants.

**Ganser syndrome** a condition in which psychotic illness is simulated or a DISSOCIATED STATE occurs purportedly as a result of an unconscious effort by the individual to escape from an intolerable situation. It is typically seen in psychiatric hospitals and, historically, in prisons (it is referred to in the older literature as **prison psychosis**). The most prominent feature is the giving of approximate answers to simple or familiar questions (e.g., “3 + 3 = 7”; “a horse has five legs”). Other features include clouding of consciousness, inattentiveness or drowsiness, conversion symptoms (e.g., CONVERSION PARALYSIS), hallucinations, and, frequently, loss of memory for events subsequent to the episode. The syndrome has been variously categorized as a MALINGERING process, a psychotic disorder, and a consequence of a head injury. Also called **pseudodementia**. [first described in 1898 by Sigbert **Ganser** (1853–1931), German psychiatrist]

**Ganzfeld** *n.* **1.** a homogeneous visual field, resulting from stimulation of both retinas by diffuse, uniform illumination. This is typically accomplished by looking through white spheres (or the halves of a ping-pong ball) in a dimly red-lit room. **2.** in parapsychology experiments, a technique in which the participant is isolated from the sensory environment (e.g., by covering the eyes and placing headphones, usually playing white or pink NOISE, over the ears). [German, “whole field”; coined by Wolfgang METZGER]

**gap detection** the detection of a temporal interruption in a quasi-continuous sound. For individuals with typical hearing in laboratory situations, a gap of approximately 3 ms is just detectable.

**gap junction** a type of intercellular junction consisting of a gap of about 2 to 4 nm between the plasma membranes of two cells, spanned by protein channels that allow passage of electrical signals. See ELECTRICAL SYNAPSE.

**garbage in, garbage out (GIGO)** an expression indicating that if the data used in analyses are not reliable or coherent, the results will not prove useful. The phrase was first used in computer science, cautioning users against trusting computer output derived from unreliable input. Although the term is not used much currently, it remains a relevant reminder to researchers to pay attention to how studies are designed and how data are collected, and not to depend on analyses to produce meaningful results when the input data are not themselves meaningful.

**Garcia effect** an alternative but less common name for CONDITIONED TASTE AVERSION. [John **Garcia** (1917–2012), U.S. psychologist]

**garden-path sentence** a sentence in which structural cues, lexical ambiguity, or a combination of both mislead

the reader or listener into an incorrect interpretation until a disambiguating cue appears later in the sentence. For example, in the sentence *As the car drove past the church clock could be heard striking*, the appearance of the verb phrase *could be heard* indicates that a parsing of the sentence in which *past* is interpreted as governing *the church* is erroneous. Such sentences have proved useful in psycholinguistic research into the role of memory in sentence parsing.

**Gardner–Diamond syndrome** a condition in which an individual bruises easily (purpura simplex) and the black and blue patches (ecchymoses) tend to enlarge and result in pain in the affected tissue. It is thought to be triggered by severe emotional distress. Also called **autoerythrocyte sensitization syndrome**; **painful bruising syndrome**; **psychogenic purpura**. [Louis Klein Diamond (1902–1995) and Frank H. Gardner (1919–2013), U.S. physicians]

**gargoylism** *n.* the facial appearance of people with HURLER SYNDROME. The features include an abnormally long and narrow skull due to premature closure of the sagittal suture; a broad nose bridge; an open mouth with a large protruding tongue; thick lips; and clouded corneas.

**GAS** abbreviation for GENERAL ADAPTATION SYNDROME.

**gas chromatography** a method of chemical analysis used to separate and identify the components of a mixture. The substance being tested is placed at one end of a long tube, and its components are volatilized by an inert gas injected into the tube. Components can be identified by the time they take to pass through the tube. The technique is used to separate and quantify barbiturates, steroids, and fatty acids.

**gaslight** *vb.* to manipulate another person into doubting his or her perceptions, experiences, or understanding of events. The term once referred to manipulation so extreme as to induce mental illness or to justify commitment of the gaslighted person to a psychiatric institution but is now used more generally. It is usually considered a colloquialism, though occasionally it is seen in clinical literature, referring, for example, to the manipulative tactics associated with ANTISOCIAL PERSONALITY DISORDER. —**gaslighted** *adj.* [from *Gaslight*, a 1938 stage play and two later film adaptations (1940, 1944) in which a wife is nearly driven to insanity by the deceptions of her husband]

**gasoline intoxication** a euphoric reaction induced by inhalation of gasoline vapor. It also results in headache, weakness, depression of the central nervous system, confusion, nausea, and respiratory disorders. See INHALANT.

**gastric motility** movements of the stomach muscles, particularly those caused by digestive processes. Such movements may also occur in the absence of food in the stomach, as in the reaction of an individual to stress.

**gastric neuropathy** a form of DIABETIC GASTROPATHY marked by delayed emptying of the stomach and irregular food absorption.

**gastrin** *n.* a hormone, synthesized in the G cells of the stomach wall, that regulates the release of gastric juice by the stomach. See also SECRETIN.

**gastro-** (**gastr-**) combining form stomach.

**gastrocolic reflex** the reflex wave of contraction that passes along the colon when food enters a fasting stomach or even in anticipation of a meal.

**gastroduodenal ulceration** ulceration of the mucosa lining of the stomach and duodenum caused by hydrochloric acid and the digestive enzyme pepsin, which are secreted by the stomach. Although in some cases gastroduodenal ulceration is due to secretion of excess acid, in many others secretion is normal but the mucosa is more susceptible to the acid's effects. Factors implicated in this increased susceptibility include infection with *Helicobacter pylori* bacteria and long-term use of NSAIDs (nonsteroidal anti-inflammatory drugs; e.g., aspirin, ibuprofen); there may also be a familial or genetic factor. Gastric (stomach) ulcers tend to develop later in life and are less likely to be associated with increased acid secretion than are duodenal ulcers. See also DYSPEPSIA; ULCER.

**gastroenteritis** *n.* inflammation of the lining of the stomach and intestines. It may be caused by food poisoning, infectious diseases, allergic reactions, or psychological factors such as fear, anger, or other emotional disturbance. Symptoms may include headache, nausea and vomiting, diarrhea, and gas pain.

**gastrointestinal motility** the involuntary forward movement of the contents of the gastrointestinal tract, which are propelled mainly by the alternate contraction and relaxation of the bands of circular and longitudinal muscle fibers that form the walls of the tract.

**gastrointestinal problems** disorders associated with dysfunction of the gastrointestinal tract, such as diarrhea, malabsorption syndrome, colitis, flatulence, dysphagia, gastroenteritis, and peptic ulcer.

**gastrula** *n.* an early embryo showing differentiation of cells into the three GERM LAYERS that will give rise to all of the major tissue systems in the adult organism.

**gastrulation** *n.* a stage of embryonic development in which the BLASTULA—essentially a hollow ball of cells—is reorganized to form the GASTRULA, which contains the basic plan of the future organism.

**gate** *n.* a device or circuit (e.g., an ION CHANNEL or a neural circuit) that controls the passage of a substance or signal. See GATE-CONTROL THEORY; GATED CHANNEL; LIGAND-GATED ION CHANNEL; VOLTAGE-GATED ION CHANNEL.

**gate-control theory** the hypothesis that the subjective experience of pain is modulated by large nerve fibers in the spinal cord that act as gates, such that pain is not the product of a simple transmission of stimulation from the skin or some internal organ to the brain. Rather, sensations from noxious stimulation impinging on pain receptors have to pass through these SPINAL GATES to the brain in order to emerge as pain perceptions. The status of the gates, however, is subject to a variety of influences (e.g., drugs, injury, emotions, possibly even instructions coming from the brain itself), which can operate to shut them, thus inhibiting pain transmission, or cause them to be fully open, thus facilitating transmission. Compare PATTERN THEORY; SPECIFICITY THEORY. See also GATING MECHANISM. [first proposed in 1965 by Canadian psychologist Ronald Melzack (1929– ) and British neuroscientist Patrick D. Wall (1925–2001)]

**gated channel** a channel in a cell membrane that can open or close to regulate the passage of certain ions or molecules.

**gatekeeper** *n.* a health care professional, usually a PRIMARY CARE PROVIDER associated with a MANAGED CARE organization, who determines a patient's access to health

care services and whose approval is required for referrals to specialists.

**gatekeeper role** the responsibility of judges to determine the admissibility in court of both scientific and non-scientific expert testimony according to criteria relevant to reliability. See also DAUBERT TEST; KUMHO TIRE CO. V. PATRICK CARMICHAEL.

**gateway drug** a substance whose use is thought to promote progression to using more harmful substances. For example, alcohol, tobacco, and cannabis are often considered to be gateways to heroin, cocaine, LSD, or PCP use. Introduced in the 1950s, the concept became the most popular framework for understanding drug use among adolescent populations, guiding prevention efforts and shaping governmental policy. However, research suggests that certain personality traits (see ADDICTIVE PERSONALITY), rather than the substances themselves, are more likely to be associated both with early drug use (e.g., of tobacco and alcohol) at a relatively young age and with the progression to drugs that have a higher abuse potential.

**gating** *n.* the automatic inhibition or exclusion from attention of certain sensory stimuli when attention is focused on other stimuli. That is, while one is attending to specific information in the environment, other information does not reach one's awareness. Also called **sensory gating**.

**gating mechanism** in GATE-CONTROL THEORY, the mechanism by which SPINAL GATES open or close, thereby allowing or limiting the transmission of pain.

**Gaussian distribution** see NORMAL DISTRIBUTION. [Karl Friedrich **Gauss** (1777–1855), German mathematician]

**Gaussian noise** see NOISE. [Karl Friedrich **Gauss**]

**Gauss–Markov theorem** a fundamental theorem of mathematical statistics that deals with the generation of linear unbiased ESTIMATORS with minimum variance in the GENERAL LINEAR MODEL. [Karl Friedrich **Gauss**; Andrei **Markov** (1856–1922), Russian mathematician]

**gay** **1.** *adj.* denoting individuals, especially males, who are sexually attracted to and aroused by members of their own sex. **2.** *n.* a gay individual. See also HOMOSEXUALITY.

**gay bashing** see HOMOPHOBIA.

**gay liberation** a social movement seeking to redress legal, social, and economic discrimination against, and advocating equal rights and acceptance for, gay, lesbian, bisexual, and transgender people. Gay liberation emerged from the radicalism and social turmoil of the late 1960s and extended its political organizing activities in response to the rise of HIV/AIDS in the 1980s. Since then, it has evolved into a broad, diverse movement that includes core debates about how to achieve full equality. For example, some argue for complete integration into mainstream society and its institutions (e.g., through legalization of same-sex marriage), and others stress the essential difference of homosexual experience, culture, and identity. Also called **gay lib**; **gay rights movement**; **homosexual rights movement**; **queer rights movement**.

**gay marriage** see SAME-SEX MARRIAGE.

**gay-related immune deficiency** a former name for AIDS, reflecting the erroneous belief that it was restricted to gay and bisexual men.

**gaze** **n.** **1.** the act or process of maintaining the eyes upon a FIXATION POINT. **2.** the orientation of the eyes within the face, which can be used by others to interpret where an individual is looking. Gaze direction is an effective way of communicating the location of hidden objects and is functionally similar to pointing. Some nonhuman animals, such as dogs and dolphins, appear to understand the function of gaze direction. See also EYE CONTACT.

**gaze palsy** an inability to move the eyes, either by SACCADES or SMOOTH-PURSUIT EYE MOVEMENTS, past midposition in a particular direction, although the eye muscles are capable of contraction. Typical forms are vertical gaze palsy (affecting up–down movements) and horizontal gaze palsy (affecting left–right movements); in complete gaze palsy, gaze shifts are restricted in all directions. Gaze palsy can be caused by injury to the brainstem, thalamus, or posterior occipitotemporal, parietal, or frontal cortex. It leads to a restriction of the FIELD OF REGARD. Also called **gaze paresis**.

**GBMI** abbreviation for GUILTY BUT MENTALLY ILL.

**GCS** abbreviation for GLASGOW COMA SCALE.

**GDS** **1.** abbreviation for GERIATRIC DEPRESSION SCALE. **2.** abbreviation for GLOBAL DETERIORATION SCALE. **3.** abbreviation for GORDON DIAGNOSTIC SYSTEM.

**GDSS** abbreviation for GROUP DECISION SUPPORT SYSTEMS.

**Gegenhalten** *n.* in neurology, involuntary resistance to passive movement of the extremities. [German, “resisting”]

**Geisteswissenschaftliche Psychologie** one of two branches of the subject matter of psychology as defined by German academics in the 19th century. Various translated, the term literally means a psychology dealing with the science of the mind or spirit; as such it was intended to encompass the moral, spiritual, historical, and human aspects of behavior now known as SOCIAL SCIENCE. Compare NATURWISSENSCHAFTLICHE PSYCHOLOGIE. See also VERSTEHENDE PSYCHOLOGIE.

**gelasmus** *n.* spasmodic laughter in individuals with certain psychogenic disorders, schizophrenia, and some diseases of the brain (especially of the medulla oblongata). When occurring as an aspect of a psychomotor seizure, this type of spasmodic laughter is termed **gelastic epilepsy**.

**gel electrophoresis** a method of separating molecules of differing size or electrical charge by forcing them to flow through a gel under the influence of an electric field.

**gematria** *n.* an occult practice in which the numerical values of letters, words, and phrases are calculated and those values are used to uncover “hidden” significances in words, names, or texts (most often the Hebrew scriptures). It is a form of NUMEROLOGY.

**Gemeinschaft** *n.* a type of society or social group based on a community of feeling resulting from shared life experiences and similar beliefs and values (from German, “community”). Familial and kinship relations are an example, although the term can also apply to friendship networks and neighborhood relations. Compare GESELLSCHAFT. [first described in 1887 by German sociologist Ferdinand Julius Tönnies (1855–1936)]

**Gemeinschaftsgefühl** *n.* SOCIAL INTEREST or community spirit: a spirit of equality, belonging, and unity (German, literally: “feeling for community”).

**gemellology** *n.* the study of twins and the phenomenon of twinning.

**-gen** *suffix* producing (e.g., ANTIGEN).

**gender** *n.* **1.** the condition of being male, female, or neuter. In a human context, the distinction between gender and SEX reflects the usage of these terms: Sex usually refers to the biological aspects of maleness or femaleness, whereas gender implies the psychological, behavioral, social, and cultural aspects of being male or female (i.e., masculinity or femininity). **2.** in linguistics, a grammatical category in inflected languages that governs the agreement between nouns and pronouns and adjectives.

**gender assignment** classification of an infant at birth as either male or female. Children born with AMBIGUOUS GENITALIA are usually assigned a gender by parents or physicians. See also GENDER REASSIGNMENT.

**gender bias** any one of a variety of stereotypical beliefs about individuals on the basis of their sex, particularly as related to the differential treatment of females and males. These biases often are expressed linguistically, as in use of the phrase *physicians and their wives* (instead of *physicians and their spouses*, which avoids the implication that physicians must be male) or of the term *he* when people of both sexes are being discussed.

**gender coding** assigning particular traits or behaviors exclusively or predominantly to males or females.

**gender concept** an understanding of the socially constructed distinction between male and female, based on biological sex but also including the roles and expectations for males and females in a culture. Children begin to acquire concepts of gender, including knowledge of the activities, toys, and other objects associated with each gender and of how they view themselves as male or female in their culture, possibly from as early as 18 months of age.

**gender consistency** the understanding that one's own and other people's maleness or femaleness is fixed across situations, regardless of superficial changes in appearance or activities.

**gender constancy** a child's emerging sense of the permanence of being a boy or a girl, an understanding that occurs in a series of stages: GENDER IDENTITY, GENDER STABILITY, and GENDER CONSISTENCY.

**gender differences** typical differences between men and women that are specific to a particular culture and influenced by its attitudes and practices. Gender differences emerge in a variety of domains, such as careers, communication, and interpersonal relationships. See also SEX DIFFERENCES.

**gender discrimination** an improper but frequently used synonym of SEX DISCRIMINATION.

**gender dysphoria** **1.** discontent with the physical or social aspects of one's own sex. **2.** in DSM-5, a diagnostic class that replaces GENDER IDENTITY DISORDER and shifts clinical emphasis from cross-gender identification itself to a focus on the possible distress arising from a sense of mismatch, or incongruence, that one may have about one's experienced gender versus one's assigned gender. Diagnostic criteria for gender dysphoria in children include significant distress or impairment due to marked gender incongruence, such as a strong desire to be—or a belief that one is—the other gender, preference for the toys, games, roles, and activities stereotypically associated with

the other gender, and a strong dislike of one's sexual anatomy. In adults, the manifestations of gender dysphoria may include a strong desire to replace one's physical sex characteristics with those of the other gender (see SEX REASSIGNMENT), the belief that one has the emotions of the other gender, and a desire to be treated as the other gender or recognized as having an alternative gender identity.

**gender identification** the process of identifying oneself as male or female and adopting the roles and values of that gender. Compare SEXUAL IDENTIFICATION. See also GENDER-ROLE SOCIALIZATION.

**gender identity** one's self-identification as male or female. Although the dominant approach in psychology for many years had been to regard gender identity as residing in individuals, the important influence of societal structures, cultural expectations, and personal interactions in its development is now recognized as well. Significant evidence now exists to support the conceptualization of gender identity as influenced by both environmental and biological factors. See CISGENDER; GENDER CONSTANCY; TRANSGENDER. See also GENDER ROLE.

**gender identity discordance** a continuing sense that one's anatomical sex is wrong, with a persistent wish to be the other sex. This phrase is sometimes used in place of GENDER IDENTITY DISORDER and TRANSSEXUALISM to avoid connotations of pathology. See also GENDER DYSPHORIA.

**gender identity disorder** in DSM-IV-TR, a disorder characterized by clinically significant distress or impairment of functioning due to cross-gender identification (i.e., a desire to be or actual insistence that one is of the other sex) and persistent discomfort arising from the belief that one's sex or gender is inappropriate to one's true self (see TRANSSEXUALISM). The disorder is distinguished from simple dissatisfaction or nonconformity with gender roles. The category **gender identity disorder not otherwise specified** is used to classify gender-related disorders distinct from gender identity disorder, such as GENDER DYSPHORIA related to congenital INTERSEX, stress-related cross-dressing behavior (see TRANSVESTISM), or preoccupation with castration or penectomy (removal of the penis). In DSM-5, gender dysphoria entirely replaces gender identity disorder as a diagnostic class and emphasizes the clinical significance not of cross-gender identification per se but, instead, the possible distress arising from the sense of incongruence that one may have between one's experienced gender and one's assigned gender.

**gender nonconformity** behavior that differs from that of others of the same sex or from cultural expectations of male and female behavior.

**gender pay gap** the percentage difference between female and male median annual earnings that is thought to result from undervaluing and underpaying work done by women. Also called **gender wage gap**. See also COMPARABLE WORTH.

**gender psychology** the exploration of the concepts of masculinity and femininity across cultures and the influence of those concepts on behavior, health, interpersonal relationships, and psychological processes. Although gender psychology originally denoted the analysis of biological sex differences between men and women, the field has grown to encompass the social construction of gender as well. Current topics of study are broad, including within-sex variability, GENDER IDENTITY and GENDER ROLES, sexuality and sexual orientation, gender stereotypes and their

origins, and other explorations of men's and women's experiences, attitudes, and attributes. Modern gender psychology is also methodologically and theoretically diverse, using various quantitative and qualitative techniques and incorporating a variety of perspectives from foundational areas (e.g., social, developmental, and cognitive psychology) and applied fields (e.g., clinical, counseling, and educational psychology).

**gender reassignment** **1.** the changing of an individual's label as male or female because of incorrect gender assignment at birth, due to the presence of anomalous genitalia (as in INTERSEX). **2.** see SEX REASSIGNMENT.

**gender research** the study of issues related to femininity, masculinity, sexuality, and gay, lesbian, and transsexual concerns. Gender research may involve qualitative studies that use focus groups or interviews to understand behavior as well as quantitative analyses that examine potential gender group differences or prediction models. For example, traditional research has assessed whether there are significant group differences between men and women on math and science performance. More recently, more complex prediction models have been examined to demonstrate that multiple factors are needed to understand performance, such as cultural norms and expectations.

**gender role** the pattern of behavior, personality traits, and attitudes that define masculinity or femininity in a particular culture. It frequently is considered the external manifestation of the internalized GENDER IDENTITY, although the two are not necessarily consistent with one another.

**gender-role socialization** the conditioning of individuals to the roles, expectations, and behaviors that society prescribes for males and females.

**gender schema** the organized set of beliefs and expectations that guides one's understanding of maleness and femaleness.

**gender script** a temporally organized, gender-related sequence of events. Stereotypically female gender scripts may include doing laundry or preparing dinner in the kitchen, whereas stereotypically male scripts may include building a birdhouse or barbecuing. See also SCRIPT.

**gender similarities hypothesis** the notion that males and females are more psychologically alike than they are different. This directly contradicts the popular **gender differences model** stating that men and women differ enormously in cognitive ability, communication style, personality, social behavior, and dozens of other characteristics. The similarities hypothesis has been criticized, however, as lacking a theoretical basis (given that it is derived exclusively from META-ANALYSIS) and as overly dismissive of contextually based gender differences. [proposed in 2005 by U.S. psychologist Janet Shibley Hyde (1948– )]

**gender stability** the understanding that one's own or other people's maleness or femaleness does not change over time. See GENDER CONSTANCY.

**gender stereotype** a relatively fixed, overly simplified concept of the attitudes and behaviors considered normal and appropriate for a male or female in a particular culture. Gender stereotypes often support the social conditioning of GENDER ROLES. See also SEX-ROLE STEREOTYPE.

**gender typing** **1.** expectations about people's behavior that are based on their biological sex. **2.** the process

through which individuals acquire and internalize such expectations.

**gene** *n.* the basic unit of heredity, responsible for storing genetic information and transmitting it to subsequent generations. The observable characteristics of an organism (i.e., its PHENOTYPE) are determined by numerous genes, which contain the instructions necessary for the functioning of the organism's constituent cells. Each gene consists of a section of DNA, a large and complex molecule that, in higher organisms, is arranged to form the CHROMOSOMES of the cell nucleus. Instructions are contained in the chemical composition of the DNA, according to the GENETIC CODE. In classical genetics, a gene is described in terms of the trait with which it is associated and is investigated largely by virtue of the variations brought about by its different forms, or ALLELES. At the molecular level, most genes encode proteins, which carry out the functions of the cell or act to regulate the expression of other genes. A minority encode vital components of the cell's protein-assembling apparatus, such as ribosomes. Recent advances in genetic technology and the work of the HUMAN GENOME PROJECT have done much to illuminate the mechanism of gene action and have pinpointed genes associated with various inherited diseases. See also DOMINANT ALLELE; RECESSIVE ALLELE.

**genealogy** *n.* the study of the ancestry of an individual or group with emphasis on family history and relationships rather than hereditary traits. —**genealogical** *adj.* —**genealogist** *n.*

**gene cloning** see CLONING.

**gene–environment interaction** an interaction between one or more genes and factors in the environment, such as may be needed to trigger the onset of a disease, condition, or characteristic.

**gene expression** see EXPRESSION.

**gene–gene interaction** an interaction between two or more genes, such as may be responsible for the development of a disease, condition, or characteristic.

**gene imprinting** the phenomenon in which the expression of a gene is different depending on whether it was inherited from the mother or the father.

**gene knockdown** see KNOCKDOWN.

**gene knockout** see KNOCKOUT.

**gene linkage** the tendency for genes or GENETIC MARKERS that are located physically close to each other on a chromosome to be inherited together. Linkage data can provide high-risk family members with estimates of their individual risk for the disease or condition conveyed by the gene.

**gene mapping** the creation of a schematic representation of the arrangement of genes, genetic markers, or both as they occur in the genetic material of an organism. For humans and other higher organisms, three different types of map are made. A GENETIC MAP (or linkage map) shows the relative positions of genes along each chromosome. A PHYSICAL MAP shows the absolute physical distances between genes along the DNA molecule. A CYTOGENETIC MAP depicts the banded appearance of stained chromosomes; the bands can be correlated with the location of particular genes.

**gene mosaicism** the presence in an individual of two or more cell lines that are distinct in respect to their genetic



and chromosomal makeup and are derived from a single zygote.

**gene mutation** see MUTATION.

**gene pool** the total number of genes and their variants (ALLELES) that occur within a given population of a species at a particular time.

**genera** *pl. n.* see GENUS.

**general ability** a measurable ability believed to underlie skill in handling all types of intellectual tasks. See also GENERAL FACTOR.

**general ability tests** tests designed to measure the GENERAL FACTOR of intelligence. They usually require, among other things, understanding and applying relations among relatively abstract stimuli, such as geometric forms.

**general adaptation syndrome (GAS)** the physiological consequences of severe stress. The syndrome has three stages: alarm, resistance, and exhaustion. The first stage, the **alarm reaction** (or **alarm stage**), comprises two sub-stages: the **shock phase**, marked by a decrease in body temperature, blood pressure, and muscle tone and loss of fluid from body tissues; and the **countershock phase**, during which the sympathetic nervous system is aroused and there is an increase in adrenocortical hormones, triggering a defensive reaction, such as the FIGHT-OR-FLIGHT RESPONSE. The **resistance stage** (or **adaptation stage**) consists of stabilization at the increased physiological levels. High blood pressure can develop into hypertension, with risk of cardiovascular disturbance. Resources may be depleted and permanent organ changes produced. The **exhaustion stage** is characterized by breakdown of acquired adaptations to a prolonged stressful situation; it is evidenced by sleep disturbances, irritability, severe loss of concentration, restlessness, trembling that disturbs motor coordination, fatigue, jumpiness, low startle threshold, vulnerability to anxiety attacks, depressed mood, and crying spells. [first described by Hungarian-born Canadian endocrinologist Hans Selye (1907–1982)]

**general aptitude** see APTITUDE.

**general arousal** level of energy expenditure, proposed as one of the two dimensions in terms of which all human behavior can be explained (see AROUSAL), the other being approach-withdrawal.

**general behavior theory** see BEHAVIOR THEORY.

**general drive** see NONREGULATORY DRIVE.

**general effect** an overall scientific finding about a relationship between phenomena. For example, a researcher examining the relationship between various teaching styles and academic performance may conclude the existence of a general effect in which better student performance is obtained with an applied, hands-on style. See also INTERACTION EFFECT; MAIN EFFECT.

**general extrasensory perception (GESP)** in parapsychology, a paranormal outcome that cannot be assigned to any specific process of EXTRASENSORY PERCEPTION. For example, in an experiment with ZENER CARDS, it may be impossible to determine whether the RECEIVER has perceived the contents of the deck directly through CLAIRVOYANCE, received the thoughts of the SENDER through TELEPATHY, or predicted the future card turns through PRECOGNITION.

**general factor** (symbol: *g*) a hypothetical source of indi-

vidual differences in GENERAL ABILITY, which represents individuals' abilities to perceive relationships and to derive conclusions from them. The general factor is said to be a basic ability that underlies the performance of different varieties of intellectual tasks, in contrast to SPECIFIC FACTORS, which are alleged each to be unique to a single task. Even theorists who posit multiple mental abilities have often suggested that a general factor may underlie these (correlated) mental abilities. See TWO-FACTOR THEORY. [postulated in 1904 by Charles SPEARMAN]

**general genetic law of cultural development** the idea that a child's development, as a process embedded in culture, occurs on two planes: first the social, between individuals, and later the psychological, as thought is internalized by the child. [proposed by Lev VYGOTSKY]

**General Health Questionnaire (GHQ)** a measure developed in the 1970s to diagnose psychiatric disorders, intended for use with patients in community and nonpsychiatric clinical settings (e.g., by primary physicians). The original version consists of 60 items (e.g., on depression, anxiety, social functioning); there are also 30-item, 28-item, and 12-item versions of the questionnaire. [developed by British psychiatrist David Goldberg (1934– ) at the Maudsley Hospital]

**generalizability** *n.* the extent to which results or findings obtained from a sample are applicable to a broader population. For example, a theoretical model of change would be said to have high generalizability if it applied to numerous behaviors (e.g., smoking, diet, substance use, exercise) and varying populations (e.g., young children, teenagers, middle-age and older adults). A finding that has greater generalizability also is said to have greater EXTERNAL VALIDITY, in that conclusions pertain to situations beyond the original study.

**generalizability theory** a framework of principles and assumptions about how to determine the RELIABILITY of a set of data. Researchers investigate the various facets of a study (items, raters, settings, etc.) to understand specific sources of error and to determine the conditions under which observations will be consistent and applicable across different contexts (e.g., age groups, geographic regions, socioeconomic status).

**generalization** *n.* **1.** the process of deriving a concept, judgment, principle, or theory from a limited number of specific cases and applying it more widely, often to an entire class of objects, events, or people. See INDUCTIVE REASONING. **2.** a judgment or principle derived and applied in this way. **3.** in conditioning, see STIMULUS GENERALIZATION. —**generalize** *vb.*

**generalization gradient** a graph marking the similarity or difference between two stimuli versus the similarity or difference in their elicited responses. An **excitatory gradient** (or **excitation gradient**) graphs an increased tendency to respond to a stimulus and to other stimuli that resemble it, whereas an **inhibitory gradient** (or **inhibition gradient**) graphs a decreased tendency. In general, the more similar two stimuli, the more similar the responses. See also STIMULUS GENERALIZATION.

**generalized additive model (GAM)** an extension of the GENERAL LINEAR MODEL that allows a researcher to posit and assess various nonlinear patterns in a data set and discern which pattern most closely approximates the data. A generalized additive model assumes that there is an ADDI-

TIVE EFFECT of the independent variables on the dependent variable.

**generalized anxiety disorder (GAD)** excessive anxiety and worry about a range of concerns (e.g., world events, finances, health, appearance, activities of family members and friends, work, school) accompanied by such symptoms as restlessness, fatigue, impaired concentration, irritability, muscle tension, and disturbed sleep. For a formal diagnosis of GAD, the worry is often experienced as difficult to control, and the various symptoms that accompany the worry and anxiety occur on more days than not for a period of 6 months or more.

**generalized imitation** imitation of forms of behavior that, until presented by a model, had been previously unseen. Presumably this results from a history of reinforcement for imitating.

**generalized least squares regression** a procedure used to estimate REGRESSION COEFFICIENTS and other PARAMETERS when ERROR VARIANCES are correlated or show HETEROGENEITY OF VARIANCE such that a conventional ordinary LEAST SQUARES REGRESSION procedure will produce biased results.

**generalized linear model (GLM)** a broad class of statistical procedures that allow variables to be related in a prediction or REGRESSION ANALYSIS by taking into account the variance of each. The generalized linear model extends ordinary LEAST SQUARES REGRESSION to include other procedures—such as LOGISTIC REGRESSION and POISSON REGRESSION—that allow for the use of categorical dependent variables having very lopsided distributions, in which most people endorse a particular category (e.g., no heroin use) or fail to endorse a particular category (e.g., heroin use).

**generalized matching law** in behavioral studies, a formula in the form of a power function ( $y = ax^b$ ) that describes the choice between two alternatives in terms of the ratio ( $y$ ) of rates of occurrence of (or time spent in) each alternative and the ratio ( $x$ ) of the rates of reinforcement of the two alternatives. The exponent ( $b$ ) of the function indexes sensitivity to reinforcement rates, and the coefficient ( $a$ ) indexes inherent bias for one of the alternatives. When both  $a$  and  $b$  are equal to 1.0, the formula makes the same prediction as the MATCHING LAW.

**generalized motor program** the hypothesized, abstract form of a MOTOR PROGRAM whose expression can be varied depending on the concurrent choice of parameters, such as overall extent or speed.

**generalized other** in SYMBOLIC INTERACTIONISM, the aggregation of people's viewpoints. It is distinguished from specific other people and their individual views.

**generalized seizure** a seizure in which abnormal electrical activity involves the entire brain rather than a specific focal area. The two most common forms are ABSENCE SEIZURES and some TONIC-CLONIC SEIZURES.

**generalizing assimilation** in Jean PIAGET's theory of SENSORIMOTOR INTELLIGENCE, the incorporation of increasingly varied objects into a reflex SCHEME, as, for example, when an infant generalizes a sucking scheme to his or her hand, a blanket, or a toy.

**general knowledge test** a type of IMPLICIT MEMORY TEST that asks participants to answer factual questions about previously studied items (e.g., words) and assesses how many more questions are answered correctly for the

studied material than for unstudied material. It is often categorized as a verbal CONCEPTUAL TEST.

**general language disability** see LANGUAGE DISABILITY.

**general linear model (GLM)** a large class of statistical techniques, including REGRESSION ANALYSIS, ANALYSIS OF VARIANCE, and CORRELATION ANALYSIS, that describe the relationship between a DEPENDENT VARIABLE and one or more explanatory or INDEPENDENT VARIABLES. It is a more specific type of GENERALIZED LINEAR MODEL. Most statistical techniques employed in the behavioral sciences can be subsumed under the general linear model.

**general medical condition** in *DSM-IV-TR*, a disorder that has known physical causes and observable psychopathology. Examples include hypertension and diabetes. The equivalent term in *DSM-5* is **another medical condition**. Thus, for example, the *DSM-5* diagnosis for a patient who experiences significant anxiety symptoms (e.g., panic attacks) as a consequence of having a neurological disorder (e.g., Parkinson's disease) would be "anxiety disorder due to another medical condition."

**General Neuropsychological Deficit Scale** a scale that combines a series of tests from the HALSTEAD-REITAN NEUROPSYCHOLOGICAL BATTERY to generate an overall estimate of cognitive impairment: The higher the score, the greater the impairment.

**general neurotic syndrome** a diagnostic classification for a combined anxiety, depressive, and personality disorder. Also called **negative affect syndrome**.

**general paresis** dementia associated with advanced neurosyphilitic infection of the brain (see NEUROSYPHILIS), a condition that is now extremely rare because syphilis is usually diagnosed and treated in its early stages. The first symptoms of general paresis appear 5 to 30 years after the primary infection. Psychological signs are irritability, confusion, fatigue, and forgetfulness, followed by headaches, confabulation, and deterioration in behavior and judgment. If untreated with antibiotics, physical signs gradually develop, including ARGYLL ROBERTSON PUPILS, sagging facial muscles, vacant expression, slurred speech, poor handwriting, and LOCOMOTOR ATAXIA, followed by inability to dress, paralysis, convulsions, loss of bladder and bowel control, and gradual deterioration to a vegetative state. General paresis was formerly known as **general paralysis of the insane**, **dementia paralytica**, **paralytic dementia**, and **paretic psychosis**. Also called **general paralysis**.

**general practitioner (GP)** see FAMILY MEDICINE.

**General Problem Solver (GPS)** a computer program so named because its approach to problem solving using MEANS-ENDS ANALYSIS was intended to address many different problems and problem types. It employs a general recursive goal-reduction search procedure that looks to a problem-specific table of connections for goal and subgoal solution formulas. [built in 1961 by U.S. cognitive and computer scientist Allen Newell (1927–1992) and Herbert A. SIMON]

**general psychology** the broad study of the basic principles, problems, and methods underlying the science of psychology, including areas such as behavior, human growth and development, emotions, motivation, learning, the senses, perception, thinking processes, memory, intelligence, personality theory, psychological testing, behavior disorders, social behavior, and mental health. The study is

viewed from various perspectives, including physiological, historical, theoretical, philosophical, and practical.

**general semantics** an early attempt in the philosophy of language to establish the relationship between words and REFERENCES on a scientific basis. It proved influential in a number of disciplines in the 1930s and 1940s. See SEMANTICS; SEMIOTICS. [introduced by Polish-born U.S. philosopher and scientist Alfred Korzybski (1879–1950) in his *Science and Sanity* (1933)]

**general slowing** an explanation of COGNITIVE AGING that attributes poorer performance of older adults on a variety of cognitive tasks to reduced speed of COGNITIVE PROCESSES.

**general systems theory** an interdisciplinary conceptual framework focusing on the wholeness, pattern, relationship, hierarchical order, integration, and organization of phenomena. It was designed to move beyond the reductionistic and mechanistic tradition in science (see REDUCTIONISM) and integrate the fragmented approaches and different classes of phenomena studied by contemporary science into an organized whole. In this framework, an entity or phenomenon should be viewed holistically as a set of elements interacting with one another (i.e., as a system), and the goal of general systems theory is to identify and understand the principles applicable to all systems. The impact of each element in a system depends on the role played by other elements in the system, and order arises from interaction among these elements. Also called **systems theory**. [formulated by Austrian biologist Ludwig von Bertalanffy (1901–1972)]

**general transfer** the transfer of general skills or principles acquired in one task or situation to problems in a totally different field. An example is applying the capacity for logical thought acquired in a philosophy course to problems arising in business (see TRANSFER OF TRAINING). Also called **transfer by generalization; transfer of principles**. Compare SPECIFIC TRANSFER. See also COGNITIVE GENERALIZATION.

**generate–recognize model** see TWO-PROCESS MODEL OF RECALL.

**generation** *n.* **1.** the act or process of reproduction or creation. **2.** all of the offspring that are at the same stage of descent from a common ancestor. See also FILIAL GENERATION. **3.** the average time interval between the birth of parents and the birth of their offspring.

**generation effect** the finding that memory for items to be remembered in an experiment is enhanced if the participants help to generate the items. For example, the word *hot* will be better remembered if the studied item is “Opposite of COLD: H\_” than if the word *hot* is simply read. Though generation often yields a memory benefit, there are circumstances in which it does not increase retention relative to studying the items.

**generation gap** the differences in values, morals, attitudes, and behavior apparent between younger and older people in a society. The term was first used with reference to the burgeoning YOUTH CULTURE of the late 1960s.

**generative grammar** an approach to linguistics in which the goal is to account for the infinite set of possible grammatical sentences in a language using a finite set of generative rules. Unlike earlier inductive approaches that set out to describe and draw inferences about grammar on the basis of a corpus of natural language, the theories of

generative grammar developed by Noam CHOMSKY in the 1950s and 1960s took for their basic data the intuitions of native speakers about what is and is not grammatical (see COMPETENCE; GRAMMATICALITY). In taking this mentalist approach, Chomsky not only repudiated any behaviorist account of language use and acquisition but also revolutionized the whole field of linguistics, effectively redefining it as a branch of COGNITIVE PSYCHOLOGY. Much research in PSYCHOLINGUISTICS has since focused on whether the various models suggested by generative grammar have psychological reality in the production and reception of language. See also FINITE-STATE GRAMMAR; GOVERNMENT AND BINDING THEORY; PHRASE-STRUCTURE GRAMMAR; TRANSFORMATIONAL GENERATIVE GRAMMAR.

**generativity versus stagnation** the seventh stage of ERIKSON’S EIGHT STAGES OF PSYCHOSOCIAL DEVELOPMENT. Generativity is the positive goal of middle adulthood, interpreted in terms not only of procreation but also of creativity and fulfilling one’s full parental and social responsibilities toward the next generation, in contrast to a narrow interest in the self, or self-absorption. Also called **generativity versus self-absorption**.

**generator potential** see RECEPTOR POTENTIAL.

**generic knowledge** see SEMANTIC KNOWLEDGE.

**generic name** the nonproprietary name for a pharmaceutical compound. In the United States, the name is adopted by the United States Adopted Name Council and, if recognized by the United States Pharmacopoeia, becomes the official name of the compound. Compare PROPRIETARY DRUG; TRADEMARK.

**generosity** *n.* the quality of freely giving one’s support or resources to others in need. See also KINDNESS. —**generous** *adj.*

–**genesis** *suffix* creation, origin, or development (e.g., PAR- THENOGENESIS).

**gene splicing** the technique of inserting genetic material, in the form of DNA, into an existing DNA molecule. This is commonly performed in GENETIC ENGINEERING when genetic material from one organism is introduced into another organism, usually of a different species. The resultant RECOMBINANT DNA may create new sources of drugs or similar organic substances from microorganisms or may correct genetic defects.

**gene therapy** the insertion of segments of healthy DNA into human body cells to correct defective segments responsible for disease development. A carrier molecule (**vector**) is used to deliver the therapeutic gene to the patient’s target cells, restoring them to a normal state of producing properly functioning proteins. The most common vector is a virus that has been specifically altered to carry normal human DNA, but several nonviral options are being explored as well. Though experimental, current gene therapy holds significant promise as an effective treatment for a variety of pathological conditions, including neurodegenerative disorders. It is not, however, without its share of challenges and limitations: (a) difficulties integrating therapeutic DNA into the genome and the rapidly dividing nature of many cells have prevented any long-term benefits; (b) if the body’s immune system response to foreign objects is triggered, benefits of the therapy may be mitigated; and (c) conditions that arise from mutations in a single gene are the best candidates for gene therapy, yet some of the most commonly occurring disorders (e.g., heart disease, high blood pressure, Alzheimer’s disease, arthritis, diabe-

tes) are caused by the combined effects of variations in many genes. There are also ethical, legal, and social concerns associated with the practice. See also GENETIC ENGINEERING.

**genetic** *adj.* relating to GENES or GENETICS.

**genetic algorithm** a search procedure from ARTIFICIAL INTELLIGENCE in which populations of solutions to a problem (usually encoded in strings of BITS) are combined to make new possible solutions for the problem. A fitness measure is used to determine which solutions are suitable for making the new populations of solutions. Genetic operators, such as crossover (where sections of two solutions are interchanged) and mutation (where various bits in a solution are switched), are used to produce the new generations of solutions. This approach to creating problem solutions is intended to be an analogue of NATURAL SELECTION in actual evolutionary processes.

**genetic clock** see TELOMERE.

**genetic code** the instructions in genes that “tell” the cell how to make specific proteins. The code resides in the sequence of bases occurring as constituents of the genetic material, DNA or RNA. These bases are represented by the letters A, T, G, and C (which stand for ADENINE, THYMINE, GUANINE, and CYTOSINE, respectively). In messenger RNA, ADENIL (U) replaces thymine. Each unit, or CODON, of the code consists of three consecutive bases. Hence, there are 64 possible triplet combinations of the four bases, which specify the amino acids that make up each protein molecule.

**genetic counseling** an interactive method of educating a prospective parent about genetic risks, benefits and limitations of genetic testing, reproductive risks, and options for surveillance and screening related to diseases with potentially inherited causes. Genetic counseling is most often provided by GENETICISTS or **genetic counselors** who are trained to discuss hereditary disease with individuals, take PEDIGREES, and help individuals and families make decisions about the options open to them with regard to genetic disease. If genetic testing is performed, genetic counselors also assess the psychological implications of risk notification and the need for further psychological counseling following disclosure of test results. Also called **genetic guidance**. See also PRETEST COUNSELING; POST-TEST COUNSELING.

**genetic defect** any abnormality (MUTATION) in a gene or a chromosome. Generally, the defect is expressed in a failure to synthesize a normally functioning enzyme that is required for a specific step in building a certain body cell or for a vital stage in the metabolism of a food element.

**genetic determinism** the doctrine that human and nonhuman animal behavior and mental activity are largely (or completely) controlled by the genetic constitution of the individual and that responses to environmental influences are for the most part innately determined. See BIOLOGICAL DETERMINISM; DETERMINISM; NATURE–NURTURE.

**genetic disorder** any disease or condition that is due to an abnormality of a gene or chromosome (see MUTATION). Also called **inherited disorder**.

**genetic engineering** techniques by which the genetic contents of living cells or viruses can be deliberately altered, either by modifying the existing genes or by introducing novel material (e.g., a gene from another species). Genetic engineering is undertaken for many different rea-

sons, including basic research on genetic mechanisms, the large-scale production of particular gene products (e.g., medically useful proteins), and the genetic modification of crop plants. There have also been attempts to modify defective human body cells in the hope of treating certain genetic diseases. There remains, however, considerable public concern about the risks and limits of genetic engineering in plants and animals, including humans. See also GENE SPLICING; RECOMBINANT DNA.

**genetic epistemology** a term used by Jean PIAGET to denote his theoretical approach to and experimental study of the development of knowledge.

**genetic error** an error in the DNA code of a single gene. The genetic error may be due to a mutation that is spontaneous or one caused by an environmental factor, such as radiation. In either case, the error alters a gene's ability to provide the proper instructions for cellular manufacture of an enzyme required to metabolize an important amino acid. A genetic error that becomes hereditary usually is not lethal to an embryo or fetus; the individual is able to survive birth and become a fertile adult, thus capable of transmitting the error to another generation of individuals. Some genetic errors, however, may result in fetal death or mortality for the individual before he or she reaches adulthood. More than 2,000 kinds of genetic errors have been cataloged.

**genetic guidance** see GENETIC COUNSELING.

**geneticist** *n.* a health professional who specializes in the study of GENETICS. A geneticist may be a member of a medical services department of a hospital, medical college, or research institution.

**genetic linguistics** an approach to linguistics in which languages are classified according to their historical “family” relationships. The world's 4,000 or so languages are conventionally divided into some 18 families, each of which is presumed to have developed from a common ancestral PROTOLANGUAGE. The larger families, such as Indo-European, are further divided into subfamilies, such as Celtic, Germanic, Aryan, and so on. See COMPARATIVE LINGUISTICS; DIACHRONIC LINGUISTICS.

**genetic linkage** see GENE LINKAGE.

**genetic map** a chromosome map of a species that shows the position of its known genes, GENETIC MARKERS, or both relative to each other. In humans, genetic mapping entails examining the pattern of inheritance of numerous traits or other markers, over many generations, to establish the degree of GENE LINKAGE.

**genetic marker** a gene or segment of DNA with an identifiable location on a chromosome and whose inheritance can be readily tracked through different generations. Because DNA segments that lie near each other on a chromosome tend to be inherited together, markers are often used to determine the inheritance of a gene that has not yet been identified but whose approximate location is known.

**genetic method** the study of psychological processes in terms of hereditary origins and developmental history, with an emphasis on the role of genes as explanatory devices.

**genetic monogamy** see MONOGAMY.

**genetic predisposition** a tendency for certain traits to be inherited, including physical and mental conditions and

disorders. Schizophrenia, for example, is a mental disorder with a genetic predisposition that affects less than 1% of the general population; however, increasingly larger percentages of distant relatives, siblings, and identical twins of individuals are affected. Also called **hereditary predisposition**.

**genetic programming** a search process for generating problem solutions based on research in GENETIC ALGORITHMS. In this situation, problem solutions are represented by computer code. Genetic operators, including the exchange of components of code between two solutions as well as the mutation of pieces of a solution code, are used to produce new solutions. A fitness metric is used to determine which solutions are most appropriate for use in producing each new generation of solutions.

**genetic programming theory** a group of theories that describe aging as resulting from genetic encoding within an individual's DNA whereby one is born with a predetermined tendency toward a developmental timetable. Also called **planned obsolescence theory**. Compare VARIABLE RATE THEORY.

**genetic psychology** the study of the development of mental functions in children and their transformation across the lifespan. In the 19th and early 20th centuries, the term was preferred over the synonymous DEVELOPMENTAL PSYCHOLOGY.

**genetics** *n.* the branch of biology that is concerned with the mechanisms and phenomena of heredity and the laws that determine inherited traits. See also BEHAVIORAL GENETICS; BIOGENESIS; POLITICAL GENETICS; SOCIOGENETICS.

**genetic sequence** the order of base pairs along a particular strand or segment of a DNA or MESSENGER RNA molecule.

**genetics of intelligence** a research area concerned with the influence of one's genetic makeup on intelligence. Investigators have identified precise genes or genetic sequences thought to be involved in generating individual differences in intelligence, but these findings remain speculative.

**genetic theory** **1.** the view that behavior can be explained in hereditary and developmental terms. **2.** the theoretical principles accepted in the science of genetics.

**genetic underclass** see UNDERCLASS.

**genetic variation** differences in the observable characteristics (PHENOTYPE) of the members of a population or species due to spontaneous or environmentally induced genetic alterations or rearrangements. Genetic variation is the basis for NATURAL SELECTION. In one set of conditions, those with certain features will have higher REPRODUCTIVE SUCCESS, but if conditions change, then individuals with other features might be favored.

**genetotrophic disease** any disease due to an inherited inability of enzymes to break down the nutrients necessary to meet an organism's metabolic requirements. PHENYLKETONURIA and other inborn errors of metabolism are examples of genetotrophic diseases.

**-genic** *suffix* produced by or producing (e.g., PSYCHGENIC).

**geniculate nucleus** any of four small oval clusters of nerve cell bodies on the underside of the THALAMUS in the brain. There are two pairs—the LATERAL GENICULATE NU-

CLEI and the MEDIAL GENICULATE NUCLEI—with one of each pair on either lobe of the thalamus; these relay, respectively, visual impulses and auditory impulses to the cerebral cortex. Also called **geniculate body**.

**genistein** *n.* a phytoestrogen (see ESTROGEN) found in soy beans and other legumes. The effects of genistein in mitigating against learning and memory deficits associated with Alzheimer's disease and in alleviating menopause-related hot flashes, as well as other potential uses, are being studied.

**genital** *adj.* relating to the sex organs. See GENITALIA.

**genital arousal in sleep** penile erection in men and clitoral enlargement and vaginal lubrication in women that occur during REM SLEEP. Absence of nocturnal penile tumescence is a marker of a physical cause of ERECTILE DYSFUNCTION.

**genital character** see GENITAL PERSONALITY.

**genital disorder** any adverse condition affecting the genitalia. Such a condition may be congenital, caused by infection, sexually transmitted, or the result of injury.

**genital herpes** a HERPES INFECTION that involves the genitals, usually caused by herpes simplex Type 2. However, genital infection with herpes simplex Type 1 is becoming more common. Genital herpes is incurable, although medications are available to manage outbreaks.

**genitalia** *pl. n.* the reproductive organs of the male or female. The **male genitalia** include the penis, testes and related structures, prostate gland, seminal vesicles, and bulbourethral glands. The **female genitalia** consist of the vulva, vagina, vestibular glands, uterus, ovaries, fallopian tubes, and related structures. The **external genitalia** comprise the vulva (including the clitoris, labia, and vestibule of the vagina) in females and the penis and testicles in males. Also called **genitals**. See also AMBIGUOUS GENITALIA.

**genitality** *n.* the capacity to experience erotic sensation in the genital organs, starting with childhood masturbation and culminating in adult sexuality.

**genital love** in classical psychoanalytic theory, sexually mature love of another person achieved during the GENITAL STAGE of psychosexual development. See also GENITAL PERSONALITY.

**genital mutilation** the destruction or physical modification of the external genitalia, especially when done for cultural reasons (as in CIRCUMCISION or FEMALE GENITAL MUTILATION) or as a form of self-punishment.

**genital personality** in classical psychoanalytic theory, the sexually mature, adult personality that ideally develops during the GENITAL STAGE of psychosexual development. Individuals who have reached this stage of development are posited to have fully resolved their OEDIPUS COMPLEX and to exhibit a mature sexuality that involves true intimacy and expresses equal concern for their own and their partner's satisfaction. Also called **genital character**. See also GENITAL LOVE.

**genital stage** in classical psychoanalytic theory, the final stage of PSYCHOSEXUAL DEVELOPMENT, ideally reached in puberty, when the OEDIPUS COMPLEX has been fully resolved and erotic interest and activity are focused on intercourse with a sexual partner. Also called **genital phase**. See also GENITAL LOVE; GENITAL PERSONALITY.

**genital stimulation** stimulation of the genitalia to produce sexual pleasure and response.

**genital zone** any of the external reproductive organs and adjacent areas that are capable of producing erotic or sexual sensations. See also EROGENOUS ZONE.

**genitive** *n.* a CASE of nouns, pronouns, and noun phrases that expresses a possessor–possessed relation. In English, unlike more inflected languages, the genitive case is apparent only in the possessive pronouns (*my/mine, your/yours, our/ours*, etc.) and the use of the noun ending *-s* or *-'* to indicate possession. Compare ACCUSATIVE; DATIVE; NOMINATIVE.

**genitofemoral nerve** a nerve that receives sensory impulses from the genitalia and the leg. It divides into femoral and genital branches. In men, the genital branch innervates the cremaster muscle and skin of the scrotum; in women, it accompanies one of the ligaments of the uterus. The femoral branch subdivides into other smaller nerves of the leg.

**genito-pelvic pain/penetration disorder** a DSM–5 diagnosis that combines VAGINISMUS and DYSpareunia based on their frequent comorbidity and similar presentation.

**genius** *n.* an extreme degree of intellectual or creative ability, or any person who possesses such ability.

**genocide** *n.* the intentional and systematic annihilation of a racial, ethnic, national, or religious group. Thus defined, genocide was declared an international crime by the United Nations Genocide Convention of 1948. See also ETHNIC CLEANSING. —**genocidal** *adj.*

**genocopy** *n.* a GENOTYPE at one position (or locus) of a chromosome that produces a nearly identical PHENOTYPE, or observable characteristic, to that produced by a genotype at another position.

**genogram** *n.* a diagrammatic representation of a family that not only includes PEDIGREE information—that is, individual histories of illness and death—but also incorporates aspects of the interpersonal relationships between family members.

**genome** *n.* all of the genetic material contained in an organism or cell. The HUMAN GENOME PROJECT mapped the estimated 20,000 to 25,000 genes in human DNA.

**genotype** *n.* the genetic composition of an individual organism as a whole or at one or more specific positions or loci on a chromosome. Compare PHENOTYPE. See also PARATYPE. —**genotypic** *adj.*

**genotype–environment effects** the effects of genetic constitution on experience, based on the proposal that an individual's genotype influences which environments he or she encounters and the type of experiences he or she has. Three types of genotype–environment effects are proposed: passive (through environments provided by biologically related parents); evocative (through responses elicited by individuals from others); and active (through the selection of different environments by different individuals). [proposed in 1983 by U.S. psychologists Sandra Scarr (1936– ) and Kathleen McCartney (1955– )]

**genotype–phenotype correlation** a correlation between the location or nature of a mutation in a gene and the expression of that mutation in the individual, based on observations of affected individuals and their genotypes. Attempts at such correlations are made to elucidate which

characteristics of a mutation affect, for example, the age of onset or severity of diseases with a genetic etiology.

**gentrification** *n.* the physical upgrading of neighborhoods and housing that accompanies an influx of wealthier residents. It is theorized that an important adverse effect of gentrification is the displacement of many long-term residents who can no longer afford to live in the gentrified area. —**gentrify** *vb.*

**genu** *n.* (*pl. genua*) **1.** the knee, or an anatomical structure that resembles a knee. **2.** the anterior portion of the CORPUS CALLOSUM as it bends forward and downward.

**genus** *n.* (*pl. genera*) in BIOLOGICAL TAXONOMY, a main subdivision of a FAMILY, containing a group of similar, related SPECIES.

**geocentric theory** the theory, attributed to Alexandrian astronomer, geographer, and mathematician Ptolemy (2nd century CE), that the earth is the center of the universe and that the heavenly bodies move around it. Also called **Ptolemaic theory**. Compare HELIOCENTRIC THEORY.

**Geodon** *n.* a trade name for ZIPRASIDONE.

**geographical mobility** the capacity or facility of individuals to move from one geographic region to another. See also SOCIAL MOBILITY.

**geometric distribution** the PROBABILITY DISTRIBUTION of the number of failed trials before the first success in a series of BERNOULLI TRIALS.

**geometric illusion** any misinterpretation by the visual system of a figure made of straight or curved lines. Examples of such illusions are the MÜLLER-LYER ILLUSION and the ZÖLLNER ILLUSION.

**geometric mean** a measure of CENTRAL TENDENCY calculated for *k* numbers  $x_1 \dots x_k$  as  $(x_1 \times x_2 \times x_3 \dots x_k)^{1/k}$ . A geometric mean is similar to an arithmetic MEAN except that the latter involves the sum of the quantities divided by the number of quantities, whereas the former is the product of the quantities with the product raised to the power of 1 divided by the number of quantities. Thus, for the numbers 1, 2, and 3, the arithmetic mean is  $6/3 = 2$ , and the geometric mean is the cube root of  $(1)(2)(3) = 6^{1/3} = 1.817$ . See also HARMONIC MEAN.

**geon** *n.* a simple three-dimensional element (e.g., sphere, cube) regarded as a fundamental component in the perception of a more complex object. See RECOGNITION BY COMPONENTS THEORY. [first proposed by U.S. psychologist Irving Biederman (1939– )]

**geophagy** *n.* the eating of dirt or clay. It is most commonly seen in individuals with intellectual disability, young children, and occasionally in pregnant women. It is usually a symptom of PICA, but in some cultures, it is an accepted practice.

**geostatistics** *n.* a set of methods for analyzing data related to the physical environment. In psychology, for example, geostatistics could be used to understand which factors in the environment can bring about or exacerbate behavioral conditions, such as substance abuse, or spread diseases, such as AIDS.

**geotaxis** *n.* the involuntary movement of an organism that helps it maintain a postural orientation related to the force of gravity. See TAXIS.

**geriatric assessment** a multidisciplinary evaluation of

an older person's medical history as well as current physical and mental health, functional and cognitive abilities, and psychosocial stressors (e.g., loss of spouse) that is used to diagnose and to plan treatment for cognitive, emotional, and social problems that the individual may have.

**Geriatric Depression Scale (GDS)** an assessment instrument specifically designed for use with adults ages 65 years and older. It is self-administered and comprises a series of 30 yes–no questions (e.g., “Do you often get bored?”; “Is it easy for you to make decisions?”; “Do you enjoy getting up in the morning?”) about depressive symptoms that excludes somatic disturbances often experienced by older adults. [originally developed in 1982 by psychologist T. L. Brink (1949– ), psychiatrist Jerome A. Yesavage, and colleagues]

**geriatric disorder** any disease or chronic condition that occurs commonly, but not exclusively, among older people. Examples of geriatric disorders include glaucoma, arthritis, and Alzheimer's disease and other dementias.

**geriatrician** *n.* a physician, psychologist, or other health care provider who specializes in the biopsychosocial treatment and management of older adults.

**geriatric neuropsychology** an applied subspecialty in neuropsychology addressing the assessment and intervention of COGNITIVE DYSFUNCTION in older adults and aimed at improving their functioning and quality of life.

**geriatric psychology** see GEROPSYCHOLOGY.

**geriatric psychopharmacology** the branch of pharmacology that studies the use of and response to psychoactive agents in older adults, as well as the mechanisms of action responsible. Metabolic changes associated with aging can affect a drug's biological activity and may increase the sensitivity of the individual's central nervous system to drugs.

**geriatric psychotherapy** the use of talk therapy to treat the mental disorders of older adults. Geriatric psychotherapy requires an understanding of age-related and cohort-related differences (see COHORT EFFECT) in symptoms and behavior.

**geriatric rehabilitation** the process of using somatic therapies (e.g., OCCUPATIONAL THERAPY, PHYSICAL THERAPY) to restore to the fullest extent possible the functional abilities of older adults following an illness or injury that resulted in lost or diminished independence.

**geriatrics** *n.* the branch of medicine that deals with the diagnosis and treatment of disorders in older adults. —**geriatric** *adj.*

**geriatric screening** a program or system administered by a hospital, community center, county health center, or other such agency to provide physical examinations and care, psychological evaluations, and financial counseling to older adults.

**German measles** a disease that is caused by the rubella virus and that produces symptoms similar to measles, although it is less contagious. A woman who develops German measles during pregnancy has a 25% chance of giving birth to a child with congenital rubella. The rate of malformation in the fetus ranges from a low of 6% if the virus is contracted during the 3rd month of pregnancy to as high as 50% in the 1st month. The birth defects include malformations of the eyes, ears, and central nervous sys-

tem (see CONGENITAL RUBELLA SYNDROME). Also called **rubella**.

**germ cell** any of the cells in the gonads that give rise to the GAMETES by a process involving growth and MEIOSIS. See OOGENESIS; SPERMATOGENESIS.

**germinal stage 1.** in humans, the first 1 to 2 weeks of prenatal life after fertilization, in which the fertilized egg (zygote) migrates to the uterus and becomes implanted in the ENDOMETRIUM. The EMBRYONIC STAGE follows the germinal stage. **2.** in plants, the season during which germination occurs.

**germ layer** any of the three layers of cells in an animal embryo at the GASTRULA stage, from which the various organs and tissues develop. The outermost layer is the ECTODERM, the middle layer is the MESODERM, and the inner layer is the ENDODERM.

**germ line** the line of cells that gives rise to the reproductive cells—the ova and spermatozoa—and is thereby continued between successive generations of organisms. Germ-line MUTATIONS, unlike somatic mutations (i.e., mutations in body cells), are transmitted to offspring and may predispose the offspring to disease or other traits.

**germ plasm 1.** the region of cytoplasm in an egg cell that is destined to give rise to the GERM CELLS during subsequent embryological development. Compare SOMATOPASM. **2.** the hereditary material that, according to German cytologist August Weismann (1834–1914) in his germ plasm theory (also known as **continuity of germ plasm** or **Weismannism**), passes unchanged from generation to generation in the germ cells. It is now identified as DNA.

**germ theory** the doctrine that infectious diseases are caused by the presence and activity of microorganisms, such as bacteria, viruses, or fungi, in body tissues.

**geront-** (**gero-**) *combining form* old age.

**gerontology** *n.* the scientific interdisciplinary study of old age and the aging process. Those involved in gerontology include psychologists, biologists, sociologists, medical scientists, medical practitioners, geriatric service providers, and scholars from the humanities and social sciences. See also SOCIAL GERONTOLOGY. —**gerontological** *adj.* —**gerontologist** *n.*

**gerophilia** *n.* sexual attraction to much older partners. Also called **gerontophilia**.

**geropsychology** *n.* a specialization in psychology dealing with enhancing the welfare and mental health of older adults via the provision of various psychological services. Also called **geriatric psychology**. —**geropsychological** *adj.* —**geropsychologist** *n.*

**Gerstmann's syndrome** a set of four symptoms associated with lesions of a specific area of the (usually left) PARIETAL LOBE. They are inability to recognize one's individual fingers (finger agnosia; see TACTILE AGNOSIA), inability to distinguish between the right and left sides of one's body (RIGHT–LEFT DISORIENTATION), inability to perform mathematical calculations (ACALCULIA), and inability to write (AGRAPHIA). The existence of Gerstmann's syndrome as a true independent entity is subject to debate. [Josef G. Gerstmann (1887–1969), Austrian neurologist]

**Gesamtvorstellung** *n.* the act of holding in mind the entire content of a sentence before the first word is spoken.

[German, literally: “complete representation”; coined by Wilhelm WUNDT]

**Geschwind's theory** the hypothesis that excessive intrauterine exposure to ANDROGENS inhibits development of the THYMUS gland and left cerebral hemisphere, explaining why autoimmune disorders tend to be associated with learning disabilities (including dyslexia) and are more frequent in males than in females. [proposed in 1984 by U.S. neuroscientists Norman **Geschwind** (1926–1984) and Albert Galaburda (1948– )]

**Gesellschaft** *n.* a type of society (the literal meaning of this German word) or social group in which people feel relatively isolated from each other. Their relationships are primarily contractual in nature, being guided chiefly by rational self-interest and the logic of the marketplace. Compare GEMEINSCHAFT. [first described in 1887 by German sociologist Ferdinand Julius Tönnies (1855–1936)]

**GESP** abbreviation for GENERAL EXTRASENSORY PERCEPTION.

**gestalt** *n.* an entire perceptual configuration (from German: “shape,” “configuration,” “totality,” “form”), made up of elements that are integrated and interactive in such a way as to confer properties on the whole configuration that are not possessed by the individual elements. See PERCEPTUAL ORGANIZATION. See also GESTALT PRINCIPLES OF ORGANIZATION; GESTALT PSYCHOLOGY.

**gestalt completion test** a visual-perceptual task in which the participant is required to synthesize elements from fragmented, ambiguous pictures of items to form a “whole.” Poor performance on this test (i.e., inability to report complete objects) may indicate impairment of right-hemisphere brain function. This testing technique was initially developed in 1931 by U.S. psychologist Roy F. Street but has since been adapted by others. The original **Street Gestalt Completion Test** (also known as the **Street Gestalt test** or **Street test**) consists of 13 incomplete silhouettes of common objects.

**gestalt grouping factor** a condition (e.g., proximity) that favors perception of a GESTALT figure, that is, of wholeness or entirety.

**gestalt homology** in GESTALT PSYCHOLOGY, the notion that components of two different structures can have the same role in their respective structures and be defined by that role. For example, a hypotenuse has the same function in any right triangle and is defined by its relationship to the other two sides and the right angle opposite.

**gestalt principles of organization** principles of perception, derived by the Gestalt psychologists, that describe the tendency to perceive and interpret certain configurations at the level of the whole rather than in terms of their component features. They include the **laws of grouping** identified by German psychologist Max WERTHEIMER in 1923: for example, the laws of CLOSURE, COMMON FATE, GOOD CONTINUATION, PROXIMITY, SIMILARITY, and SYMMETRY. Also called **gestalt laws of organization**. See also GOODNESS OF CONFIGURATION; PRÄGNANZ.

**Gestalt psychology** a psychological approach that focuses on the dynamic organization of experience into patterns or configurations (from German *Gestalt* [*pl. Gestalten*]: “shape,” “form,” “configuration,” “totality”). This view was espoused by German psychologists Wolfgang KÖHLER, Kurt KOFFKA, and Max WERTHEIMER in the early 20th century as a revolt against STRUCTURALISM, which analyzed

experience into static, atomistic sensations, and also against the equally atomistic approach of BEHAVIORISM, which attempted to dissect complex behavior into elementary conditioned reflexes. Gestalt psychology holds instead that experience is an organized whole of which the pieces are an integral part. A crucial demonstration (1912) was that of Wertheimer with two successively flashed lights, which gave the illusion of motion between them rather than of individually flashing lights. Later experiments gave rise to principles of perceptual organization, which were then applied to the study of learning, insight, memory, social psychology, and art.

**gestalt therapy** a form of psychotherapy in which the central focus is on the totality of the client's functioning and relationships in the HERE AND NOW rather than on investigation of past experiences and developmental history. One of the themes is that growth occurs by assimilation of what is needed from the environment and that psychopathology arises as a disturbance of contact with the environment. Gestalt techniques, which can be applied in either a group or an individual setting, are designed to bring out spontaneous feelings and self-awareness and promote personality growth. Examples of such techniques are ROLE PLAY, the EMPTY-CHAIR TECHNIQUE, and the HOT-SEAT TECHNIQUE. [first proposed in the 1940s by German-born U.S. psychiatrist Frederick (Fritz) S. Perls (1893–1970)]

**gestation** *n.* the development of the embryo and fetus in the uterus until birth. See PREGNANCY. —**gestational** *adj.*

**gestational age** the age of a fetus calculated from the date of conception. Also called **fetal age**. See also MENSTRUAL AGE.

**gestational surrogate** a woman who is implanted with an embryo produced by IN VITRO FERTILIZATION using the ova and sperm of another couple.

**gestation period** the period during which an offspring is carried in the uterus of the mother. Gestation periods range from 20 days for the shrew to 550 days for the African rhinoceros and 22 months for the elephant. In human beings, the expected date of birth is usually calculated as 280 days or 9 calendar months from the beginning of the woman's last menstruation.

**gestural communication** nonverbal transmission and reception of messages (ideas, feelings, signals) by means of body movements. SIGN LANGUAGE is an example.

**gesture** *n.* **1.** a movement, such as the clenching of a fist, the waving of a hand, or the stamping of a foot, that communicates a particular meaning or indicates the individual's emotional state or attitude. Gestures can enhance, clarify, or moderate the meaning of verbal communication. See EMBLEM; ICONIC GESTURE. See also NONVERBAL BEHAVIOR. **2.** a statement or act, usually symbolic, that is intended to influence the attitudes of others (as in a *gesture of goodwill*). —**gestural** *adj.*

**GH** abbreviation for GROWTH HORMONE.

**GHB** gamma-hydroxybutyrate: sodium oxybate, a potent CNS DEPRESSANT that is a metabolic product of the inhibitory neurotransmitter GAMMA-AMINOBUTYRIC ACID (GABA). It is currently used for treatment of narcolepsy and management of alcohol withdrawal, and in some countries (although not the United States), it has been used as an intravenous general anesthetic. It is commonly encountered as a drug of abuse that produces euphoria and sedation and purportedly enhances sexual arousal. Its abil-



ity to induce amnesia or unconsciousness has led it to be characterized as a DATE-RAPE DRUG. Signs of severe toxicity may occur at levels greater than 40 to 60 mg/kg, and deaths have been reported, usually when the substance is mixed with alcohol. Withdrawal syndromes, characterized by anxiety, tremor, confusion, and rarely seizures, have also been reported. U.S. trade name: **Xyrem**.

**Gheel colony** a colony of people with serious mental illness at Gheel in Belgium, a town of refuge where they are given shelter in individual homes and employed in various capacities. This practice dates from the 13th century and is associated with the legend of St. Dymphna, who was martyred at Gheel and became the patron saint of the mentally ill, incest victims, and runaways. The colony became a government institute in 1850. See SAINT DYMPHNA'S DISEASE.

**ghost** *n.* any APPARITION of a disembodied figure that retains some general bodily characteristics of a previously living person. Ghosts are rarely "seen" by more than one individual at a time, even when others are present, and tend to be perceived in periods of emotional crisis. The image often includes some implausible physical factors; for example, the ghost wears clothing, rides a horse, or carries a heavy object.

**ghost in the machine** a phrase used to emphasize the problems associated with CARTESIAN DUALISM, in which the mind is seen as a nonphysical entity (a "ghost") that somehow inhabits and interacts with a mechanical body (the "machine"). See DUALISM; MIND-BODY PROBLEM. [coined by British philosopher Gilbert Ryle (1900–1976)]

**ghost sickness** a CULTURE-BOUND SYNDROME found in Native American communities and attributed to ghosts or sometimes witchcraft. Symptoms include recurring nightmares, weakness, loss of appetite, fear, anxiety, hallucinations, confusion, and a sense of suffocation.

**GHQ** abbreviation for GENERAL HEALTH QUESTIONNAIRE.

**ghrelin** *n.* a peptide secreted by endocrine cells in the stomach that binds to growth hormone receptors in the hypothalamus and anterior pituitary, stimulating appetite and the release of growth hormone.

**giant cell arteritis** see ARTERITIS.

**GIFT** acronym for GAMETE INTRAEPALLOPIAN TRANSFER.

**giftedness** *n.* the state of possessing a great amount of natural ability, talent, or intelligence, which usually becomes evident at a very young age. Giftedness in intelligence is often categorized as an IQ of two standard deviations above the mean or higher (130 for most IQ tests), obtained on an individually administered IQ test. Many schools and service organizations now use a combination of attributes as the basis for assessing giftedness, including one or more of the following: high intellectual capacity, academic achievement, demonstrable real-world achievement, creativity, task commitment, proven talent, leadership skills, and physical or athletic prowess. The combination of several attributes, or the prominence of one primary attribute, may be regarded as a threshold for the identification of giftedness. —**gifted** *adj.*

**gigantism** *n.* an abnormally large body size due to excessive secretion of growth hormone by the pituitary gland during childhood.

**GIGO** abbreviation for GARBAGE IN, GARBAGE OUT.

**gigolo** *n.* a man who is paid to be a woman's social com-

panion or escort, or to provide sexual services for her, or both.

**Gilles de la Tourette's syndrome** see TOURETTE'S DISORDER.

**Gillespie syndrome** see ANIRIDIA, CEREBELLAR ATAXIA, AND MENTAL DEFICIENCY. [described in 1965 by Frederick D. Gillespie (1927– ), U.S. ophthalmologist]

**Gindler method** a series of exercises involving breathing, gentle touch, and posturing intended to foster personal growth and enhance sensory awareness. [Elsa Gindler (1885–1961), German gymnastics teacher]

**ginkgo** *n.* a tree, *Ginkgo biloba*, that is indigenous to Asia but now cultivated widely. An extract of the leaves has been used for centuries by Chinese herbalists and is reputed to possess medicinal and psychotropic properties. It is also a popular dietary supplement primarily used to improve mental acuity, although clinical evidence supporting this effect is largely lacking. The active compounds in ginkgo extract have anticoagulant properties, and ginkgo has been investigated as a treatment for vascular disorders, both peripheral and cerebral (e.g., vascular dementia), the latter with equivocal results. Ginkgo may also have neuroprotective properties, but studies have not shown beneficial effects relative to placebo in preventing neurological disorders such as Alzheimer's disease. Side effects of ginkgo use are rare and may include headaches or mild gastrointestinal disturbances. However, data suggest that continual long-term use of ginkgo may be associated with excessive bleeding or spontaneous hemorrhage. Additionally, there are several known and potential interactions of ginkgo with other agents, including anticoagulants, anticonvulsants, MONOAMINE OXIDASE INHIBITORS, and NSAIDS. Ginkgo may also lower seizure thresholds and should not be used by people who have a history of seizures.

**ginseng** *n.* the root of various plants of the genus *Panax*, valued for its medicinal properties, particularly in Asian cultures. It has a reputation as an aphrodisiac and is also used to enhance overall physical and mental well-being, boost energy, and relieve stress, but there is little clinical evidence supporting its effectiveness for any of these purposes. Some studies, however, have suggested that ginseng may help regulate blood glucose levels, which has prompted investigation of its potential use as a treatment for diabetes, and may improve immune function. Side effects of ginseng use are infrequent but may include nausea and vomiting, diarrhea, insomnia, headaches, nosebleeds, and blood pressure abnormalities. Additionally, ginseng may interact with anticoagulants, caffeine, MONOAMINE OXIDASE INHIBITORS, and oral hypoglycemics.

**girdle sensation** the sensation of feeling a tight band around the trunk, sometimes experienced in multiple sclerosis.

**give-and-take process** see INTERPERSONAL ACCOMMODATION.

**given-new distinction** in a sentence or other linguistic structure, the distinction made between information that is probably new to the recipient and that which is probably already known (or can be regarded as given by the context). A speaker's or writer's assumptions about which information falls into which category will usually affect word order, stress, and other observable features of language. The distinction is important in PRAGMATICS and DISCOURSE ANALYSIS. See FOREGROUNDING.

**glabrous skin** the tough, thick, hairless skin that is found on the soles of the feet and the palms of the hands.

**gland** *n.* an organ that secretes a substance for use by or discharge from the body. EXOCRINE GLANDS release their products through a duct onto internal or external bodily surfaces, whereas ENDOCRINE GLANDS are ductless and secrete their products directly into the bloodstream.

**glans penis** the roughly mushroom-shaped cap at the tip of the penis. It consists of the expanded extremity of the CORPUS SPONGIOSUM associated with connective tissue and is covered in skin (see FORESKIN).

**glare** *n.* a quality of intense brightness, due either to a reflection from a glass or metallic surface or to any strong and harsh light that hinders visual acuity (e.g., high-beam headlights). See also DIRECT GLARE.

**Glasgow Coma Scale (GCS)** a standardized observational tool widely used to assess level of consciousness following a head injury. Scores range from 3 to 15 and represent the sum of clinician ratings of three aspects of patient functioning: eye-opening response (graded 1–4), motor response (1–6), and verbal response (1–5). Scores of 8 or below are indicative of severe brain injury and coma, scores of 9 to 12 are indicative of moderate injury, and scores of 13 or higher are indicative of mild injury. Although the GCS is the most popular method of evaluating impairment severity, monitoring neurological status, and evaluating prognosis in traumatic brain injury—having been widely validated and shown to have good reliability—it is not without limitations. Shortcomings, such as the inability of the GCS to test brainstem reflexes or to obtain a verbal subscore in intubated patients, have prompted the development of other instruments to assess neurological alterations associated with trauma, notably the GRADY COMA SCALE, the FULL OUTLINE OF UNRESPONSIVENESS SCORE, and the Wessex Head Injury Matrix (see VEGETATIVE STATE). [introduced in 1974 by British neurologists Graham Michael Teasdale (1940– ) and William Bryan Jennett (1926–2008) while at the University of Glasgow, Scotland]

**Glasgow Outcome Scale (GOS)** a rating scale to assess social activity and independent functioning after traumatic brain injury. The five categories of the original scale are death, persistent vegetative state, severe disability, moderate disability, and good recovery. An extended GOS that divides each of the latter three levels into an upper and lower degree of disability is also available. [originally developed in 1975 by British neurologist William Bryan Jennett (1926–2008) and British psychiatrist Michael R. Bond (1936– ) at the University of Glasgow, Scotland]

**glass ceiling** an unofficial, intangible psychological, social, or organizational barrier that prevents able and ambitious individuals, particularly women and members of minority groups, from rising to the highest positions of authority in many organizations. Compare LEADERSHIP LABYRINTH.

**Glass's *d*** an EFFECT SIZE measure that represents the standardized difference between means (i.e., the difference in average values for two samples divided by the STANDARD DEVIATION of the second sample). It is often used in META-ANALYSIS and other research in which it is important to determine whether an effect persists across studies in order to consolidate a result. Also called **Glass's delta**. See also COHEN'S *D*; HEDGES'S *G*. [Gene V. Glass (1940– ), U.S. statistician]

**glaucoma** *n.* a common eye disease marked by raised INTRAOCULAR PRESSURE in one or both eyes and, in uncontrolled glaucoma, severe peripheral visual field loss. Age, myopia, and vascular disease are among the risk factors for glaucoma, and there is a higher incidence of the disease among those of African ancestry than in those of other groups. The acute form causes pain and abrupt reduction of visual acuity, visual blurring, and, if untreated, severe visual impairment. Chronic glaucoma is characterized by progressive visual failure without accompanying pain. See also CONGENITAL GLAUCOMA; TUNNEL VISION.

**glia** *n.* nonneuronal tissue in the nervous system that provides structural, nutritional, and other kinds of support to neurons. It may consist of very small cells (MICROGLIA) or relatively large ones (MACROGLIA). The latter include ASTROCYTES, EPENDYMAL CELLS, and the two types of cells that form the MYELIN SHEATH around axons: OLIGODENDROCYTES in the central nervous system and SCHWANN CELLS in the peripheral nervous system. Also called **neuroglia**. —**glial** *adj.*

**glioma** *n.* a form of brain tumor that develops from support cells (glia) of the central nervous system. There are three main types, grouped according to the form of support cell involved: **astrocytoma** (from ASTROCYTES), **ependymoma** (from EPENDYMAL CELLS), and **oligodendroglioma** (from OLIGODENDROCYTES). Astrocytomas are classified from Grade I to Grade IV by severity and rate of growth: Grade I tumors (also called **pilocytic astrocytomas**), Grade II **astroblastomas**, Grade III **anaplastic astrocytomas**, and Grade IV **glioblastomas**. Glioma is the most common type of brain cancer and accounts for about a quarter of spinal cord tumors. Also called **neuroglioma**.

**gliosis** *n.* an excess of nonneuronal cells (glia) in a damaged area of the central nervous system. A particular type involving the proliferation of astrocytes is called ASTROCYTOSIS, although the two terms sometimes are used interchangeably. Gliosis is a prominent feature of some neurological disturbances, including stroke.

**glittering generalities** vague but catchy phrases and slogans frequently used in propaganda and political campaigns to elicit favorable reactions. Examples are “good, clean government” and “our noble heritage.”

**GLM 1.** abbreviation for GENERALIZED LINEAR MODEL. **2.** abbreviation for GENERAL LINEAR MODEL.

**global amnesia** loss of memory for recent events (retrograde amnesia) combined with an inability to remember new information (anterograde amnesia). It is a very rare condition of unknown etiology. See also TRANSIENT GLOBAL AMNESIA.

**global analysis** see MOLAR.

**global aphasia** a severe, nonfluent form of APHASIA characterized by a complete loss of or drastic reduction in both expressive language skills—one's ability to use speech and writing to communicate—and receptive language skills—one's ability to comprehend the speech and writing of others. Neurological lesions in global aphasia are extensive and typically involve the entire left PERISYLVIAN LANGUAGE ZONE.

**Global Assessment of Functioning Scale (GAF Scale)** a scale used for treatment planning and outcome evaluation on Axis V of DSM-IV-TR's multiaxial evaluation system. Scores (1–100) reflect the clinician's judgment of a patient's overall level of psychological, social,

and occupational functioning at the time of assessment. The GAF scale is also used to measure the highest level of such functioning in the past year.

**Global Deterioration Scale (GDS)** a 7-point scale used to indicate the severity of a primary degenerative dementia, such as Alzheimer's disease, in an older adult, based on caregivers' observations of behaviors in the individual. The scale ranges from *no cognitive decline* (1) to *very severe cognitive decline* (7). [developed in 1982 by U.S. geriatric psychiatrist Barry Reisberg (1947– )]

**global intelligence** verbal and nonverbal intelligence, especially as measured by the verbal and performance subtests in various WECHSLER scales.

**globalization** *n.* **1.** the process by which goods, information, labor, services, business, finance, natural resources, and cultural products move transnationally. Globalization is usually considered a defining characteristic of the contemporary world. **2.** the integration of regional economies, societies, and cultures into a global network of ideas as a result of advances in communication, trade, and transportation. The process of globalization has set in motion the gradual disappearance of traditional boundaries between individual societies and those in different parts of the world. See CULTURAL ERGONOMICS. —**globalize** *vb.*

**global memory model** a mathematical model of the structure and organization of memory that is intended to explain data from a range of experimental tasks and manipulations, as opposed to more restricted models of single phenomena. See also MINERVA 2; SEARCH OF ASSOCIATIVE MEMORY.

**global neuronal workspace** a variation of GLOBAL WORKSPACE THEORY: a proposed cognitive architecture in which long-distance neurons connect multiple specialized processors into a neural computational space, synchronizing their individual signals and distributing them to the brain as a whole to produce a global transmission of information that is experienced as consciousness. According to the model, workspace neurons can sustain only a single global representation at a time, making the transition to consciousness an all-or-none occurrence that depends on attention: Neural activity must be robust and focused enough to trigger the large-scale and self-sustained synchronicity that elevates processing from subliminal to reportable. Although distributed throughout the brain, long-distance workspace neurons are particularly dense in the PREFRONTAL CORTEX, ANTERIOR CINGULATE CORTEX, and PARIETAL CORTEX. [developed by French cognitive neuroscientist Stanislas Dehaene (1965– ), French neuroscientist Jean-Pierre Changeux (1936– ), French neurologist Lionel Naccache (1969– ), and colleagues]

**global perception** overall perception of an object or a situation, focusing on the totality rather than the parts.

**global workspace theory** a theory suggesting that consciousness involves the distribution of information processed in and recruited from specialized, nonconscious parts of the brain; this is widely broadcast to other parts of the brain (i.e., the global workspace) wherein the information is then made consciously accessible. [originated by U.S. psychologist Bernard J. Baars (1946– )]

**globus pallidus** one of the BASAL GANGLIA. It is the main output region of the basal ganglia: Its output neurons terminate on thalamic neurons, which in turn project to the cerebral cortex.

**globus pharyngeus** a sensation of having a lump in the throat for which no medical cause can be identified. It can be a symptom of CONVERSION DISORDER. Also called **globus hystericus**.

**G-LOC** abbreviation for GRAVITY-INDUCED LOSS OF CONSCIOUSNESS.

**glomerulus** *n.* (*pl.* **glomeruli**) **1.** a small tuft or cluster in which OLFACTORY NERVE fibers terminate in part of the OLFACTORY BULB. **2.** a small tuft or cluster of blood capillaries enclosed in a kidney capsule. —**glomerular** *adj.*

**glosso-** (**gloss-**) *combining form* **1.** tongue (e.g., GLOSSOPHARYNGEAL NERVE). **2.** speech (e.g., GLOSSOLALIA).

**glossodynia** *n.* a feeling of pain in the tongue or in the tongue and buccal mucous membranes without any observable cause. Also called **glossalgia**.

**glossolalia** *n.* utterances that have a phonic similarity to human language but no intelligible semantic content. Glossolalia is found in religious ecstasy ("speaking in tongues") and in hypnotic or mediumistic trances. See also NEOLOGISM; WORD SALAD.

**glossopharyngeal nerve** the ninth CRANIAL NERVE, which supplies the pharynx, soft palate, and posterior third of the tongue, including the taste buds of that portion. It contains both motor and sensory fibers and is involved in swallowing and conveying taste information.

**glossosynthesis** *n.* the creation of nonsense words.

**glottal** **1.** *adj.* pertaining to or involving the glottis or larynx. **2.** *n.* a speech sound produced by constriction of the glottis, as in the [h] sound in *hobble*.

**glottal stop** a PLOSIVE speech sound produced by complete closure of the glottis followed by sudden release of the breath stream. Although this is a standard speech sound in some languages, in English it occurs mostly in certain dialects, as in the Cockney pronunciation of the *t* in *daughter*, or in certain words "loaned" from other languages, such as the native pronunciation of *Hawai'i*, in which the stop is indicated by the single quote.

**glottis** *n.* the opening between the VOCAL CORDS or, by extension, the vocal cords themselves or the collective elements of the larynx that are involved in voice production.

**glove anesthesia** a SENSORY CONVERSION SYMPTOM in which there is a functional loss of sensitivity in the hand and part of the forearm (i.e., areas that would be covered by a glove). See also STOCKING ANESTHESIA.

**GLS** abbreviation for generalized least squares. See GENERALIZED LEAST SQUARES REGRESSION.

**glucagon** *n.* a polypeptide hormone, secreted by the A cells of the ISLETS OF LANGERHANS, that increases the concentration of glucose in the blood. It opposes the effects of INSULIN by promoting the breakdown of glycogen and fat reserves to yield glucose. Glucagon is administered therapeutically to relieve symptoms of HYPOGLYCEMIA.

**glucocorticoid** *n.* any CORTICOSTEROID hormone that acts chiefly on carbohydrate metabolism. Glucocorticoids include CORTISOL, CORTICOSTERONE, and CORTISONE.

**glucoreceptor** *n.* any of certain cells in the HYPOTHALAMUS that bind glucose. Glucoreceptors are a putative mechanism for detecting levels of circulating glucose and conveying this information to brain areas. Also called **glucodetector**; **glucostat**.

**glucose** *n.* a soluble sugar, abundant in nature, that is a major source of energy for body tissues. The brain relies almost exclusively on glucose for its energy needs. Glucose is derived from the breakdown of carbohydrates, proteins, and—to a much lesser extent—fats. Its concentration in the bloodstream is tightly controlled by the opposing actions of the hormones INSULIN and GLUCAGON. See also BLOOD SUGAR.

**glucose transporter** a molecule that spans the plasma membrane of a cell and transports glucose molecules across the membrane.

**glucostat** *n.* see GLUCORECEPTOR. —**glucostatic** *adj.*

**glucostatic theory** the theory that short-term regulation of food intake is governed by the rate of glucose metabolism (i.e., utilization) rather than by overall blood levels of glucose. See also LIPOSTATIC HYPOTHESIS. [proposed in the 1950s by French-born U.S. nutritionist Jean Mayer (1924–1993)]

**glucuronidation** *n.* a metabolic process by which drugs or other substances are combined with glucuronic acid to form more water-soluble compounds, which are more readily excreted by the kidneys or in bile. Glucuronidation is the most prevalent of the Phase II reactions of DRUG METABOLISM.

**glue sniffing** a form of substance abuse in which the fumes of certain adhesives, particularly plastic model glue, are inhaled for their stimulant and euphoric effects. TOLUENE is the ingredient with psychoactive effects; other hydrocarbons used for this purpose include XYLENE and BENZENE. See INHALANT.

**glutamate** *n.* a salt or ester of the amino acid GLUTAMIC ACID that serves as the predominant excitatory NEUROTRANSMITTER in the brain. Glutamate plays a critical role in cognitive, motor, and sensory functions. It exerts its effects by binding to GLUTAMATE RECEPTORS on neurons. Excessive activity of glutamate at these receptors is associated with damage to nerve tissue (neurotoxicity) and cell death (see EXCITOTOXICITY), possibly the result of calcium ions flooding into the cell following overstimulation of NMDA RECEPTORS.

**glutamate hypothesis** the theory that decreased activity of the excitatory neurotransmitter glutamate is responsible for the clinical expression of schizophrenia. The hypothesis, supported by a number of studies, developed from observations that administration of NMDA RECEPTOR antagonists, such as PCP (phencyclidine) and KETAMINE, produce psychotic symptoms in humans. See also DOPAMINE HYPOTHESIS.

**glutamate receptor** any of various receptors that bind and respond to the excitatory neurotransmitter glutamate. Glutamate receptors are found on the surface of most neurons. There are two main divisions of these receptors: IONOTROPIC RECEPTORS and METABOTROPIC RECEPTORS. Ionotropic glutamate receptors are further divided into three classes: NMDA RECEPTORS, AMPA RECEPTORS, and kainate receptors. Metabotropic glutamate receptors (mGlu or mGluR) are subdivided into several classes denoted by subscript numbers (i.e., mGlu<sub>1</sub>, mGlu<sub>2</sub>, etc.).

**glutamatergic** *adj.* responding to, releasing, or otherwise involving glutamate. For example, a **glutamatergic neuron** is one that uses glutamate as a neurotransmitter. Also called **glutaminergic**.

**glutamic acid** an AMINO ACID that is regarded as nonessential in diets but is important for normal brain function. It is converted into GAMMA-AMINOBUTYRIC ACID (GABA) in a reaction catalyzed by the enzyme glutamic acid decarboxylase and requiring pyridoxal phosphate, formed from vitamin B<sub>6</sub> (pyridoxine), as a coenzyme.

**glutamic acid decarboxylase** the enzyme responsible for the formation of the neurotransmitter gamma-aminobutyric acid (GABA) from glutamic acid.

**glutamic–oxaloacetic transaminase** see ASPARTATE AMINOTRANSFERASE.

**glutethimide** *n.* one of the nonbarbiturate sedatives introduced in the early 1950s. Structurally similar to and pharmacologically interchangeable with the BARBITURATES, glutethimide offered no advantages for treatment of anxiety or insomnia. Now rarely used clinically, it is sometimes encountered as a drug of abuse. U.S. trade name: **Doriden**.

**glycine** *n.* an AMINO ACID that serves as one of the two major inhibitory neurotransmitters in the central nervous system (particularly the spinal cord), the other being GAMMA-AMINOBUTYRIC ACID (GABA). Glycine is also a cotransmitter with GLUTAMATE at excitatory NMDA RECEPTORS. Glycine synthesis occurs via two different pathways; in the most important of these, glycine is synthesized from the amino acid serine in a single reaction catalyzed by the enzyme serine hydroxymethyltransferase.

**glycogen** *n.* a polysaccharide formed in the liver from GLUCOSE and stored in the liver and other body tissues as a primary source of chemical energy. It is easily broken down into glucose molecules as needed for energy. Also called **animal starch**.

**glycosaminoglycan** *n.* see MUCOPOLYSACCHARIDOSIS.

**G<sub>M2</sub> gangliosidosis** see TAY–SACHS DISEASE.

**GNAT** abbreviation for GO/NO-GO ASSOCIATION TASK.

**gnostic neuron** see GRANDMOTHER CELL.

**gnothi se auton** know thyself (Greek). These words, which were inscribed over the portico of the temple of Apollo at Delphi in ancient Greece, have been ascribed to various sources. The pursuit of self-knowledge, or knowledge of the psyche, became a key element in the philosophical project of SOCRATES. In a sense, this project is the fundamental undertaking of psychology.

**GnRH** abbreviation for GONADOTROPIN-RELEASING HORMONE.

**goal** *n.* **1.** the end state toward which a human or nonhuman animal is striving; the purpose of an activity or endeavor. It can be identified by observing that an organism ceases or changes its behavior upon attaining this state. **2.** a target of proficiency to be achieved in a task within a set period of time. See GOAL SETTING.

**goal-attainment model** in evaluation research, a process that focuses on the achievement of a particular time-limited goal and measures the degree to which that goal has been achieved (e.g., by a program).

**goal-based evaluation** an evaluation that determines the extent to which a program has achieved its goals. This approach relies heavily on stated program goals and objectives, and as such it might overlook other aspects of the program. Compare GOAL-FREE EVALUATION. See also QUANTITATIVE EVALUATION.

**goal-directed behavior** behavior that is oriented toward attaining a particular goal. It is typically identifiable by observing that an organism ceases search behavior and engages in detour behavior when it encounters obstacles to the goal.

**goal-free evaluation** an evaluation of a program that is conducted without special knowledge of the program's stated goals and objectives and is therefore less subject to the preconceptions or biases of the researcher. Instead, the evaluation attempts to assess the program's actual effects on its clients and, importantly, any unintended negative side effects emerging from the program. Also called **value-free evaluation**. Compare GOAL-BASED EVALUATION. See also QUALITATIVE EVALUATION.

**goal gradient** systematic changes in behavior that occur as a function of spatial or temporal distance from a REINFORCER.

**goal model of evaluation** a system of assessing organizational effectiveness by focusing on the organization's public goals or expectations rather than its private goals. See also GOAL-BASED EVALUATION; GOAL-FREE EVALUATION.

**goal object** that which an individual is seeking to attain, particularly the ultimate goal following a series of sub-goals.

**goal orientation 1.** the tendency to physically or mentally position oneself toward a goal. **2.** the characteristic of individuals who tend to direct their behaviors toward attaining goals, particularly long-term goals.

**goal response 1.** in HULL'S MATHEMATICO-DEDUCTIVE THEORY OF LEARNING, the unconditioned response elicited by a GOAL STIMULUS. **2.** more generally, the final response in a chain of behavior directed toward obtaining a goal. In conditioning, it specifically refers to the response given to a positive reinforcing stimulus. See also CONSUMMATORY RESPONSE.

**goal setting** a process that establishes specific, time-based behavior targets that are measurable, achievable, and realistic. In work-related settings, for example, this practice usually provides employees with both (a) a basis for motivation, in terms of effort expended, and (b) guidelines or cues to behavior that will be required if the goal is to be met. Goal setting is effective only if individuals concerned are aware of what is to be accomplished and accept the goals for themselves, believing in their attainability. See also LOCKE'S THEORY OF GOAL SETTING; PERFORMANCE GOAL.

**goal specificity** the degree to which a goal is defined.

**goal stimulus 1.** in HULL'S MATHEMATICO-DEDUCTIVE THEORY OF LEARNING, a desired object or goal. **2.** more generally, a proprioceptive or other interoceptive stimulus arising from GOAL-DIRECTED BEHAVIOR.

**go-around** *n.* a technique used in group psychotherapy in which each member in turn is requested to react to another member, a discussion theme, or a described or enacted situation.

**goblet figure** see RUBIN'S FIGURE.

**Gödel's proof** a proof that in any logic system at least as powerful as arithmetic it is possible to state theorems that can be proved to be neither true nor false, using only the proof rules of that system. Published in 1931, this incompleteness result was very challenging to the mathematics of the time. British mathematician Alan Turing (1912–1954), with his proof of the undecidability of the halting

problem, extended this result to computation (see TURING MACHINE). [Kurt Gödel (1906–1978), Austrian-born U.S. mathematician]

**goiter** *n.* a swelling in the front part of the neck caused by enlargement of the thyroid gland. See EXOPHTHALMOS; GRAVES' DISEASE; THYROTOXICOSIS.

**Golden Rule** the principle of reciprocity in ethics. In the Christian tradition, it is usually expressed as "Do unto others as you would have them do unto you," but versions are found in most world religions and many ethical systems. Immanuel KANT proposed a similar principle in the CATEGORICAL IMPERATIVE.

**goldenseal** *n.* a shrub, *Hydrastis canadensis*, with medicinal properties. Indigenous to the eastern United States, it has a long history as a folk remedy to control uterine bleeding, and its leaves are commonly used as a poultice and antibacterial agent. There are few clinical studies evaluating the efficacy of goldenseal, but its active ingredients, the alkaloids berberine and hydrastine, have been studied extensively. Berberine has been shown to have antimicrobial properties and may also be effective in preventing the growth of cancer cells. Hydrastine has vasoconstrictive and abortifacient effects and, when taken orally, has been shown to induce labor in pregnant women. At recommended doses, goldenseal appears to have minimal adverse effects (e.g., irritation of the mouth, throat, and stomach; tingling of the skin), but at higher doses it may cause hypertension and increase heart rate. It has also been associated with seizures and other evidence of overstimulation of the central nervous system, and at very high doses may be toxic, potentially causing paralysis, respiratory failure, and death. Chronic long-term use may inhibit vitamin B absorption. Additionally, goldenseal may interact with other agents, including anticoagulants, antihypertensives, and drugs metabolized by the CYTOCHROME P450 3A4 enzyme (e.g., clonidine, nefazodone, St. John's wort).

**golden section** the division of a line or area so that the ratio of the smaller to the larger portion is equal to the ratio of the larger portion to the whole line or area. Since classical times, this ratio has been regarded as having aesthetic value. Also called **golden mean**.

**golem** *n.* in medieval Jewish folklore, a being created from inanimate material, specifically clay, and used as a servant by its creator. In spite of such disadvantages as an inability to speak or think and act on their own, golems were often associated with holiness, wisdom, and magical powers. More recently, the term has come to signify a brainless, clumsy oaf or an automaton.

**Golgi apparatus** an irregular network of membranes and vesicles within a cell that is responsible for modifying, sorting, and packaging proteins produced within the cell. [Camillo Golgi (1843–1926), Italian histologist]

**Golgi tendon organ** a receptor in muscle tendons that sends impulses to the central nervous system when a muscle contracts. When tension in the tendon becomes high enough to cause damage to tissues, Golgi tendon organs send inhibitory messages to the motor neurons of the attached muscle. Also called **Golgi corpuscle**. [Camillo Golgi]

**Golgi Type I neuron** see PROJECTION NEURON. [Camillo Golgi]

**Golgi Type II neuron** see LOCAL CIRCUIT NEURON. [Camillo Golgi]

**Goltz syndrome** a congenital multisystem disorder marked by eye anomalies, absent or extra digits, and especially skin lesions, particularly nodules of herniated subcutaneous fat in thin skin areas. About 5% of affected individuals tested have been found to have intellectual disability. Also called **focal dermal hypoplasia**; **Goltz–Gorlin syndrome**. [Robert William **Goltz** (1923– ) and Robert James **Gorlin** (1923–2006), U.S. physicians]

**Gompertz curve** a function or curve used to describe a pattern of growth that is slow at the beginning and end but rather rapid or steep in the middle, thus forming a shape resembling a leaning letter S. For example, the adoption of a fashion fad may follow a Gompertz curve: Few people purchase the product initially, but there is a subsequent period of highly increased sales that precedes a lessening of interest in the product and ultimately very low sales as the fad dies out. Gompertz curves often are used in SURVIVAL ANALYSIS. Also called **Gompertz distribution**; **Gompertz function**. [Benjamin **Gompertz** (1779–1865), British mathematician]

**Gompertz hypothesis** a hypothesis suggesting that the probability of human mortality increases exponentially with age in a geometric proportion, doubling every 8 years, between the ages of 20 and 80. Also called **Gompertz equation**. [Benjamin **Gompertz**]

**gonad** *n.* either of the primary male and female sex organs—that is, the TESTIS or the OVARY, respectively. —**gonadal** *adj.*

**gonadal dysgenesis** see TURNER SYNDROME.

**gonadal hormones** the primary male and female SEX HORMONES.

**gonadopause** *n.* the cessation of endocrine-related reproductive function that occurs with age in either sex. See also CLIMACTERIC; MALE CLIMACTERIC.

**gonadostat theory** a mechanism, associated with the initiation of puberty, by which ovarian or testicular hormones regulate hypothalamic and pituitary secretions. [proposed in 1955 by neuroendocrinologist Geoffrey Wingfield Harris (1913–1971)]

**gonadotropin** *n.* any of several hormones that stimulate functions of the gonads. Gonadotropins include FOLLICLE-STIMULATING HORMONE and LUTEINIZING HORMONE, produced by the anterior pituitary gland in response to GONADOTROPIN-RELEASING HORMONE, and chorionic gonadotropin, which is produced by the placenta (see HUMAN CHORIONIC GONADOTROPIN). Also called **gonadotropic hormone**. See also HUMAN MENOPAUSAL GONADOTROPIN. —**gonadotropic** *adj.*

**gonadotropin-releasing hormone (GnRH)** a HYPOTHALAMIC HORMONE that controls the release of LUTEINIZING HORMONE and FOLLICLE-STIMULATING HORMONE from the anterior pituitary gland. See also RELEASING HORMONE.

**goniometer (goncometer)** *n.* **1.** an instrument for measuring angles, particularly the arc or range of motion of a joint. Also called **arthrometer**. **2.** an instrument for measuring balance, consisting of a gradually raised plank. It is used to test for disease of the vestibular system.

**go/no-go** in CONDITIONING, denoting two-stimulus DISCRIMINATION procedures in which a particular action is reinforced in the presence of one stimulus (the *go* stimulus) and not reinforced in the presence of the other (the *no-go* stimulus). In neurological assessment, a **go/no-go task** as-

sesses the ability to inhibit a simple motor response after it has been established. A common go/no-go task requires the participant to display two fingers when the examiner presents one finger (*go*) and to display no fingers when the examiner presents two fingers (*no-go*). Performance on these tasks is generally impaired following frontal lobe damage or disease.

**Go/No-go Association Task (GNAT)** an IMPLICIT ATTITUDE MEASURE based on performance of a joint categorization task in which people judge if the target words are members of a specified category (e.g., insects) as well as if a second set of intermixed words, selected to be highly evaluative in nature, represent a designated evaluative category (e.g., good). Respondents are required to hit (*go*) a response key if a stimulus word represents the target category of interest or the designated evaluative category or to do nothing (*no-go*) if the stimulus does not represent either category. In one phase of the test, words from the category of interest are jointly judged with a positive evaluative designation. In a second phase, the category of interest is jointly judged with a negative evaluative designation. Attitudes are inferred from the relative speed in performing the task when the target category being judged is paired with the good versus bad evaluative category. The GNAT is conceptually similar to the IMPLICIT ASSOCIATION TEST. [developed by U.S. psychologists Brian A. Nosek and Mahzarin R. Banaji (1956– )]

**gonorrhea** *n.* a sexually transmitted disease caused by the bacterium *Neisseria gonorrhoeae* (the gonococcus). The primary focus of infection is the genital tract. Untreated, gonorrhea can lead to sterility and gonococcal conjunctivitis, a serious condition that can cause blindness. See also URETHRITIS.

**good behavior game** an intervention to decrease vocal interruptions, unexcused seat leaving, fighting, and other disruptive actions in elementary school classrooms. Children are divided into teams and informed of the specific behaviors that are not allowed during the game. Teachers penalize teams for misbehavior by any member and award special privileges to the teams with the most points at the game's conclusion. The amounts of time and the situations in which the game is played are gradually extended throughout the course of the school year, until ultimately the intervention is withdrawn altogether.

**good-boy-nice-girl orientation** see CONVENTIONAL LEVEL.

**good breast** in the psychoanalytic theory of Melanie KLEIN, the internalized representation (see INTROJECTION) of the mother's breast as nourishing and satisfying. According to Klein, the infant first experiences the mother and the nourishing breast as PART-OBJECTS with positive qualities—the good breast—and negative qualities—the BAD BREAST. Klein thought that the development of these internalized representations of the breast was the first manifestation of SPLITTING.

**good continuation** one of the GESTALT PRINCIPLES OF ORGANIZATION. It states that people tend to perceive objects in alignment as forming smooth, unbroken contours. For example, when two lines meet in a figure, the preferred interpretation is of two continuous lines: A cross is interpreted as a vertical line and a horizontal line rather than as two right angles meeting at their vertices. Also called **law (or principle) of continuity**; **law (or principle) of good continuation**.

**good death** an end of life that is in accordance with the dying person's values and is consistent with his or her wishes with regard to medical and surgical interventions, life-support technology (e.g., ventilation, feeding tube), pain management and alleviation of suffering, location where he or she wants to die (e.g., home, hospice, hospital), and emotional, spiritual, religious, or other available support prior to and during the dying process. See also APPROPRIATE DEATH.

**good enough mother** in the OBJECT RELATIONS THEORY of British psychoanalyst Donald Winnicott (1896–1971), the ordinary, devoted mother who provides an adequate or good enough environment for the growth of the infant's ego to express its TRUE SELF. The good enough mother begins mothering by adapting entirely to the infant and providing an environment free of IMPINGEMENTS, but later she gradually and inadvertently creates small failures of adaptation that allow the infant to tolerate the frustrations of reality.

**good enough parent** a parent who cares for his or her child in any way that is adequate for proper development. [proposed by U.S. psychologist Sandra Scarr (1936– )]

**good-faith bargaining** under the NATIONAL LABOR RELATIONS ACT of the United States, the principle that employers recognizing a union as the representative of their employees must treat that union as the exclusive representative of the employees and agree to bargain with that union in an honest, open manner over the terms and conditions of employment. See COLLECTIVE BARGAINING.

**good figure** see LAW OF GOOD FIGURE.

**good genes hypothesis** a hypothesis of female mate selection arguing that certain features of male behavior and body structure reflect GENETIC VARIATIONS that are correlated with positive survival attributes such as health and strength and that females choose males with such features, thereby enhancing their offspring's chances of survival. Compare RUNAWAY SELECTION. [proposed in 1982 by British evolutionary biologist William D. Hamilton (1936–2000) and U.S. behavioral ecologist Marlene Zuk (1956– )]

**good gestalt** the quality possessed by an arrangement of stimuli that is complete, orderly, and clear, with a high degree of GOODNESS OF CONFIGURATION. Although this is related to the principle of PRÄGNANZ, it is distinct in that the arrangement of stimuli need not be the simplest one possible. See also GESTALT; GESTALT PRINCIPLES OF ORGANIZATION.

**Goodman–Kruskal's gamma** a measure of association between two CATEGORICAL VARIABLES, where 0 represents no relationship and 1 represents perfect association. For example, a marketing researcher may want to assess the relationship between the location of a store and the type of clothes purchased. A Goodman–Kruskal's gamma of .30 or higher would indicate a medium-sized correlation, such that clothes distributors desiring to maximize sales should provide specific kinds of clothes at specific locations. Also called **Goodman–Kruskal's tau**. [Leo A. Goodman (1928– ) and William Henry Kruskal (1919–2005), U.S. statisticians]

**good me** in the SELF-SYSTEM theory of Harry Stack SULLIVAN, the child's personification of behaviors and impulses that meet with the approval of the parents. The good me is posited to develop as a part of the socialization process and to protect the child from anxiety about himself or herself. Compare BAD ME; NOT ME.

**goodness of configuration** the quality of a shape or form that has high levels of simplicity, regularity, symmetry, or continuity. Gestalt psychologist Wolfgang KÖHLER speculated that the mind tends to perceive more goodness of configuration than may actually exist in a shape. See also CLOSURE; GESTALT PRINCIPLES OF ORGANIZATION; PRÄGNANZ.

**goodness of fit** the degree to which values predicted by a model agree with empirically observed values. For example, a researcher may wish to assess whether a pattern of frequencies from a study is the same as theoretically expected, whether two CATEGORICAL VARIABLES are independent, or whether a REGRESSION EQUATION correctly predicts obtained data. A small, nonsignificant value from a statistical **goodness-of-fit test** indicates a well-fitting model.

**good object** in the OBJECT RELATIONS THEORY of Melanie KLEIN, an introjected PART-OBJECT that is perceived as benevolent and satisfying (see INTROJECTION). It is an early object representation that derives from the object SPLITTING into parts containing positive and negative qualities. The good object forms the core of the infant's immature ego. Compare BAD OBJECT.

**good shape** one of the GESTALT PRINCIPLES OF ORGANIZATION. It states that people tend to perceive figures in the most uniform and stable forms possible. Also called **law** (or **principle**) of **good shape**.

**goose bumps** (**goose flesh**; **goose pimples**) see PILOERECTOR.

**Gordon Diagnostic System (GDS)** an assessment device that aids in the diagnosis of attention deficits. It provides information about an individual's ability to sustain attention and exert self-control on a continuous performance test. The GDS is a microprocessor-based, portable unit that administers a series of tasks in the form of games. [Michael Gordon (1952– ), U.S. psychologist]

**GOS** abbreviation for GLASGOW OUTCOME SCALE.

**gossip 1. n.** personal talk or communication of often unsubstantiated information. Gossip may be scandalous in content or malicious in intention, but it need not be so. Many of the functions of gossip have significant implications for group processes, including bonding, norm transmission, and norm reinforcement. **2. vb.** to engage in such talk.

**Gottschaldt Figures Test** see CLOSURE FLEXIBILITY TEST.

**government and binding theory** an enhanced version of GENERATIVE GRAMMAR involving multiple levels of abstraction that seeks to explain, among other things, the relation between universals and particulars that accounts for the generativity of all human languages.

**GP** abbreviation for general practitioner. See FAMILY MEDICINE.

**GPA** abbreviation for grade-point average. See POINT-HOUR RATIO.

**G-protection device** an aeronautic device to counter the effects of gravity during flight. The faster the speed, the greater the acceleration due to gravity (acceleration of free fall). Inflatable pressure cuffs in the flight suit help counter some of the gravity effects in order to keep the pilot from losing consciousness.

**G protein** any of a class of proteins that are coupled to

the intracellular portion of a type of membrane **RECEPTOR (G-protein-coupled receptor)** and are activated when the receptor binds an appropriate ligand (e.g., a neurotransmitter) on the extracellular surface. G proteins thus have a role in signal transduction, being involved, for example, in indirect chemical **NEUROTRANSMISSION**. They work in conjunction with the nucleotides guanosine diphosphate (GDP) and guanosine triphosphate (GTP) and serve to transmit the signal from the receptor to other cell components (e.g., ion channels) in various ways, such as by controlling the synthesis of **SECOND MESSENGERS** within the cell.

**GPS** abbreviation for **GENERAL PROBLEM SOLVER**.

**GPT** abbreviation for **GROOVED PEGBOARD TEST**.

**graafian follicle** a small pouchlike cavity in an ovary in which an ovum develops (see **OOGENESIS**). At ovulation, one of the follicles ruptures and releases a mature ovum into a **FALLOPIAN TUBE**, where it may be fertilized. The ruptured follicle becomes the site of the **CORPUS LUTEUM**. Also called **ovarian follicle**. [Reijner de **Graaf** (1641–1673), Dutch histologist]

**graceful degradation** a property of cognitive networks in which damage to a portion of the network produces relatively little damage to overall performance, because performance is distributed across the units in the network and no one unit is solely responsible for any aspect of processing. It is a property of the **NEURAL NETWORK** model of cognition and of models derived from the **PARALLEL DISTRIBUTED PROCESSING** hypothesis. See also **DISTRIBUTED PROCESSING**.

**gracile fasciculus** the medial portion of either of the **DORSAL COLUMNS** of the spinal cord, composed of ascending fibers that terminate in the **NUCLEUS GRACILIS** of the medulla oblongata. Also called **fasciculus gracilis**. See also **CUNEATE FASCICULUS**.

**gracile nucleus** see **NUCLEUS GRACILIS**.

**gracile tubercle** an elongated swelling on the upper end of the **GRACILE FASCICULUS** in the medulla oblongata. The tubercle contains the **NUCLEUS GRACILIS**, which receives **DORSAL ROOT** fibers from sensory receptors in the leg. Also called **clava**.

**gradation method** the psychophysical technique of measuring change in small equal units.

**graded potential** any change in electric potential of a neuron that is not propagated along the cell (as is an **ACTION POTENTIAL**) but declines with distance from the source. Kinds of graded potential include **RECEPTOR POTENTIALS**, **POSTSYNAPTIC POTENTIALS**, and **SUBTHRESHOLD POTENTIALS**.

**grade equivalent** a measure of achievement or performance expressed in terms of the average grade level at which the observed score is typically obtained by a student. For example, if a third-grader's score conforms to fifth-grade norms, the grade equivalent is expressed as five. Also called **grade score**.

**grade-equivalent scale** a standardized scale with scores expressed in terms of the **GRADE NORM**. Also called **grade scale**.

**grade inflation** a trend that results in higher grades being awarded for lower levels of scholarship. Also called **upward grade homogenization**.

**grade norm** the standard score or range of scores that represent the average achievement level of students of a particular grade.

**grade-point average (GPA)** see **POINT–HOUR RATIO**.

**grade points** **1.** numbers equivalent to letter-grade assignments for academic coursework. Usually, A = 4, B = 3, C = 2, D = 1, and F = 0. The resulting average allows the appropriate reward to be given or disciplinary action to be taken on the basis of academic performance. **2.** letter grades converted to a numerical value, typically as follows: A = 90 to 100 (superior work that is clearly above average); B = 80 to 89 (good work, meeting all requirements and eminently satisfactory); C = 70 to 79 (competent work, meeting requirements); D = 60 to 69 (fair work, minimally acceptable); F = 59 and below (failing work). See also **POINT–HOUR RATIO**.

**grade skipping** see **EDUCATIONAL ACCELERATION**.

**gradient** *n.* **1.** the slope of a line or surface. **2.** a measure of the change of a physical quantity (e.g., temperature). **3.** in motivational psychology, a graduated change in the strength of a **DRIVE** resulting from a change in the environment, such as time interval, distance from a situation, and degree of conflict. See also **APPROACH GRADIENT**; **AVOIDANCE GRADIENT**.

**gradient of effect** the principle that, in a stimulus–response sequence in which one of the responses is reinforced, the responses closely preceding or following the reinforced response are likely to show the effects of the reinforcement procedure to a greater extent than those that are remote from that response.

**gradient of reinforcement** the generalization that the closer in time a response is to reinforcement, the stronger it will be.

**gradient of texture** the progressively finer appearance of textures and surface grains of objects as the viewer moves away from them. See also **VISUAL TEXTURE**.

**grading** *n.* the process by which an instructor assigns a performance rank to a student's work. A definitive way of portraying a student's acquired knowledge, grading is usually based on both quantitative achievements (e.g., test results, essay completion, attendance) and qualitative considerations (e.g., class participation, teacher's perception).

**gradual withdrawal** see **TAPERING**.

**graduated and reciprocated initiatives in tension reduction (GRIT)** an approach to intergroup conflict reduction that encourages the parties to communicate cooperative intentions, engage in behaviors that are consistent with these intentions, and initiate cooperative responses even in the face of competition. GRIT is usually recommended when disputants have a prolonged history of conflict, misunderstanding, misperception, and hostility. [originated in 1962 by Charles E. **OSGOOD**]

**Graduate Record Examinations (GRE)** a collection of aptitude tests used in the graduate school admissions process to make decisions regarding applicants. The GRE General Test, currently consisting of two essay writing tasks and approximately 60 multiple-choice questions, evaluates critical thinking, analytical writing, verbal reasoning, and quantitative reasoning abilities. The eight GRE Subject Tests (biochemistry, biology, chemistry, computer science, literature in English, mathematics, physics, psy-



chology), currently consisting of between 66 and 230 multiple-choice questions, evaluate knowledge specific to particular disciplines.

**Grady Coma Scale** a scale used to rate level of consciousness, with five grades corresponding to confusion (Grade I), stupor (Grade II), deep stupor (Grade III), DECEREBRATE RIGIDITY (Grade IV), and COMA (Grade V). Compare GLASGOW COMA SCALE. [developed in the 1970s at Grady Memorial Hospital in Atlanta, Georgia]

**Graeco-Latin square (Greco-Latin square)** an experimental design that superimposes one LATIN SQUARE upon another. In this type of FRACTIONAL FACTORIAL DESIGN, two sets of elements are arranged in the same set of cells in such a way that every row and every column contains each element of both sets once and once only, and each cell contains a different ordered pair. Graeco-Latin squares are used in research to minimize or eliminate the influence of extraneous variables and to balance ORDER EFFECTS.

**Graefenberg spot (Gräfenberg spot; G-spot)** an area on the anterior wall of the vagina, about 4 cm (1–2 in.) into the vagina, stimulation of which some women find very sexually pleasurable. See also FEMALE EJACULATION. [Ernst Gräfenberg (1881–1957), German gynecologist]

**grammar** *n.* in linguistics, an abstract system of rules that describes how a language works. Although it is traditionally held to consist of SYNTAX (rules for arranging words in sentences) and MORPHOLOGY (rules affecting the form taken by individual words), PHONOLOGY and SEMANTICS are also included in some modern systems of grammar. —**grammatical** *adj.*

**grammaticality** *n.* the quality of adhering to the rules of grammar. In the linguistics of Noam CHOMSKY, the grammaticality (or otherwise) of a sentence can be intuited by native speakers and explained by the rules of FORMAL GRAMMAR. A sentence can be recognized as grammatical even when it is otherwise meaningless, as in the case of Chomsky's famous example *Colorless green ideas sleep furiously*.

**grandiose delusion** see DELUSION OF GRANDEUR.

**grandiosity** *n.* an exaggerated sense of one's greatness, importance, or ability. In extreme form, it may be regarded as a DELUSION OF GRANDEUR.

**grand mal seizure** see TONIC–CLONIC SEIZURE.

**grand mean** a numerical average (MEAN) of a group of averages. For example, if the average test score for one classroom is 75 and the average score for another classroom is 73, the grand mean of the two classrooms is  $(75 + 73)/2 = 74$ . Similarly, if an ANALYSIS OF VARIANCE reveals average values of 3, 10, and 20 on a response or DEPENDENT VARIABLE for three groups of study participants, the grand mean of scores—that is, the average of all participants' responses regardless of the condition of the INDEPENDENT VARIABLES—is  $(3 + 10 + 20)/3 = 11$ .

**grandmother cell** any hypothetical neuron in the VISUAL ASSOCIATION CORTEX that is stimulated only by a single highly complex and meaningful stimulus, such as a particular individual (e.g., one's grandmother) or a particular well-known object (e.g., the Sydney Opera House). It is an extension of the FEATURE DETECTOR concept to a degree that has been dismissed by many as overly simplistic and untenable. However, research on the activity patterns of single neurons in memory-linked areas of the brain has

provided support for the concept by revealing a much higher degree of neuronal specificity than previously believed. [coined in 1969 by U.S. cognitive scientist Jerome Ysroael Lettvin (1920–2011), although the concept itself was proposed two years earlier by Polish neurophysiologist Jerzy Konorski (1903–1973), who referred to it as a **gnostic neuron**]

**grandmother hypothesis** the proposition, based on evolutionary theory, that the contribution of grandparents (particularly grandmothers) to the care of their grandchildren has been a factor in extending the human lifespan. [proposed by U.S. evolutionary biologist George C. Williams (1926–2010)]

**Grandry–Merkel corpuscle** see MERKEL'S TACTILE DISK.

**Granit theory of color vision** a theory that the perception of color relies on the activation of three types of cells: (a) scotopic dominators, which are RETINAL RODS most sensitive to wavelengths of 500 nm; (b) photopic dominators, which are RETINAL CONES most sensitive to wavelengths of 560 nm; and (c) photopic modulators, other cones sensitive to very narrow frequency ranges. [Ragnar Arthur Granit (1900–1991), Finnish-born Swedish physiologist]

**granular cortex** the portion of the cerebral cortex that contains GRANULE CELLS, which are located in layers II and IV of the cortex (see CORTICAL LAYERS). The term refers particularly to primary sensory cortex, in which layer IV (the major input area) is very thick. Compare AGRANULAR CORTEX.

**granular layer** see DENTATE GYRUS.

**granule cell** a type of small, grainlike neuron found in certain layers of the cerebral cortex and cerebellar cortex.

**granulocyte** *n.* see LEUKOCYTE.

**grapevine** *n.* the unofficial channel of communication in which information, especially rumors and gossip, is passed informally from person to person.

**graph** *n.* **1.** a visual representation of the relationship between numbers or quantities, which are plotted on a drawing with reference to axes at right angles (see X-AXIS; Y-AXIS) and linked by lines, dots, or the like. BAR GRAPHS, HISTOGRAMS, and FREQUENCY POLYGONS are commonly used examples. **2.** in computer programming, a data structure consisting of a set of nodes (not necessarily finite in number) and a set of arcs that connect pairs of nodes. In a **directed graph**, the arcs have a unique direction from one node (the parent) to the other node (the child). The set of child nodes of one parent are called siblings of each other. A path is a sequence of connected parent–child arcs, in which each child in the sequence is also a parent of the next state in the sequence. A **rooted graph** has a unique node from which all paths in the graph originate. A **tip node** or **leaf node** in the graph is a node without children. The graph structure is often used for representing SEARCH in games or other situations of problem solving or for capturing relationships, as in SEMANTIC NETWORKS. See also TREE.

**graph-** *combining form* writing or drawing.

**grapheme** *n.* a minimal meaningful unit in the writing system of a particular language. It is usually a letter or fixed combination of letters corresponding to a PHONEME in that language. —**graphemic** *adj.*

**grapheme-color synesthesia** see SYNESTHESIA.

**graphemic cued-recall test** see PERCEPTUAL TEST.

**graphesthesia** *n.* the recognition of numbers or letters that are spelled out on the skin, as with finger movements or a dull pointed object. This form of PASSIVE TOUCH has been used as a diagnostic tool for brain damage. In addition, people with both visual and hearing impairment are taught to communicate with those who are unfamiliar with sign language by digitally spelling out words on the skin.

**graphical user interface (GUI)** an interface that enables a user to operate a computer system using visual devices such as windows, icons, and pull-down menus. Compare PERCEPTUAL USER INTERFACE; TANGIBLE USER INTERFACE.

**graphic rating scale** a series of anchored points (usually from low to high) on a continuum, often used to evaluate the performance or behavior of individuals in a work or learning environment. For example, a graphic rating scale for assessing an employee's overall performance during the past year might take the form of a line with the response options of 1 (*poor*), 2 (*below average*), 3 (*average*), 4 (*above average*), and 5 (*excellent*) listed. The supervisor would mark the line to indicate the employee's performance level.

**graphology** *n.* the study of the physical characteristics of handwriting, particularly as a means of inferring the writer's psychological state or personality characteristics. Graphology is based on the premise that writing is a form of expressive behavior, although there is little empirical evidence for its validity. Also called **handwriting analysis**. —**graphological** *adj.* —**graphologist** *n.*

**graphomania** *n.* a pathological impulse to write, which may degenerate into **graphorrhea**—the compulsive writing of incoherent and meaningless words.

**graphomotor apraxia** inability to perform the motor activities involved in writing or drawing despite normal capacity to hold and manipulate a writing implement. Also called **apraxic agraphia**.

**graphopathology** *n.* the interpretation of personality disorders by studying handwriting. See also GRAPHOLOGY.

**graphospasm** *n.* a rare name for WRITER'S CRAMP.

**graph theory** the study of the use of visual representations (graphs) to describe relationships, structures, and dynamics. Applications in psychology include BALANCE THEORY, SOCIOMETRY, and analyses of SOCIAL NETWORKS, NEURAL NETWORKS, and LIFE SPACE.

**grasp reflex** an involuntary grasping by an individual of anything that touches the palm. This reflex is typical of infants, but in older individuals, it may be a sign of FRONTAL LOBE damage or disease.

**gratification** *n.* the state of satisfaction following the fulfillment of a desire or the meeting of a need. See DELAY OF GRATIFICATION; IMMEDIATE GRATIFICATION.

**gratification of instincts** see SATISFACTION OF INSTINCTS.

**grating** *n.* in vision, a stimulus that consists of parallel light and dark bars.

**gratitude** *n.* a sense of thankfulness and happiness in response to receiving a gift, either a tangible benefit (e.g., a

present, favor) given by someone or a fortunate happenstance (e.g., a beautiful day).

**Graves' disease** a disorder characterized by enlargement and overactivity of the thyroid gland and marked by a swelling in the neck (GOITER), abnormal protrusion of the eyeballs (EXOPHTHALMOS), and rapid pulse and other symptoms of THYROTOXICOSIS. [Robert J. **Graves** (1796–1853), Irish physician]

**graviceptor** *n.* any of various specialized nerve endings and receptors located in the inner ear, joints, muscles, and tendons that provide the brain with information regarding body position, equilibrium, and gravitational forces. Also called **gravireceptor**.

**gravida** *n.* a pregnant woman. The use of a Roman numeral after the term indicates the number of pregnancies a particular woman has undergone (e.g., **gravida IV** indicates a woman in her fourth pregnancy). In contrast, the term **gravid** (*adj.*) is used primarily to describe an egg-laying organism, usually a fish or reptile, when it is carrying eggs. See also MULTIGRAVIDA; PRIMIGRAVIDA.

**gravity** *n.* see PREGNANCY.

**gravity-induced loss of consciousness (G-LOC)** loss of consciousness associated with g-forces (forces of gravity) resulting from acceleration. When acceleration is of high value and rapid onset, loss of consciousness may occur suddenly and without warning, before any other physiological symptoms are noticed. See ACCELERATION EFFECTS.

**gray** *n.* a visual sensation that has neither hue (color) nor saturation and can vary from black to white.

**gray commissure** a bundle of nerve fibers that surrounds the central canal of the spinal cord and connects the anterior and dorsal horns of GRAY MATTER in each half of the cord.

**gray literature** research findings that are not readily available because they have not been published in archival sources. Examples include dissertations, papers presented at meetings, papers either rejected or not submitted for publication, and technical reports. Gray literature contributes to the FILE-DRAWER PROBLEM in META-ANALYSIS, the situation in which analytic results are biased because researchers have no access to nonsignificant findings from such nonarchival sources. Also called **fugitive literature**.

**gray matter** any area of neural tissue that is dominated by CELL BODIES and is devoid of myelin, such as the CEREBRAL CORTEX and the H-shaped PERIAQUEDUCTAL GRAY of the spinal cord. Compare WHITE MATTER.

**grayout** *n.* an increasing loss of peripheral vision to the point that one seems to be looking through a small tube (see TUNNEL VISION). It results from reduced blood flow to the head, as may be experienced, for example, by pilots performing high-speed turning maneuvers in an aircraft.

**gray ramus** a short nerve in the autonomic nervous system that carries unmyelinated postganglionic fibers from a SYMPATHETIC GANGLION to an adjacent spinal nerve. The fibers within a gray ramus are called **gray rami communicantes**.

**GRE** abbreviation for GRADUATE RECORD EXAMINATIONS.

**great chain of being** a construction, attributed to Greek philosopher PLATO and elaborated by many subsequent philosophers, that sees creation as a continuous

linked hierarchy that descends from God at the top, through heavenly beings, humans, animals, and plants to nonliving matter. The classic work on the history of this idea is the 1936 study by U.S. philosopher Arthur O. Lovejoy (1873–1963).

**great commissure** **1.** in vertebrate brains, the CORPUS CALLOSUM, so called because it is by far the largest COMMISSURE that connects the two cerebral hemispheres. **2.** in insect brains, the commissure that connects the two lateral protocerebra.

**greater superficial petrosal nerve** (GSP nerve) the sensory nerve that carries taste information from the soft palate. The GSP nerve merges with the **chorda tympani** (the nerve that innervates TASTE BUDS on the front of the tongue) to form the **intermediate nerve** (or **nerve of Wrisberg**), the sensory component of the predominantly motor FACIAL NERVE (seventh cranial nerve).

**great imitator** slang for a disease that is difficult to diagnose due to nonspecific symptoms; such diseases include lupus erythematosus, Lyme disease, and syphilis.

**great man theory** a view of political leadership and historical causation that assumes that history is driven by a small number of exceptional individuals (traditionally presumed to be men) with certain innate characteristics that predispose them for greatness. A ZEITGEIST (spirit of the times) view of history, in contrast, supposes that history is largely determined by economics, technological development, and a broad spectrum of social influences. [associated with British historian Thomas Carlyle (1795–1881)]

**Greco-Latin square** see GRAECO-LATIN SQUARE.

**Greek cross** a simple figure resembling an equal-armed cross (+), the drawing of which is used to measure basic constructional ability or to screen for UNILATERAL NEGLECT.

**green brand** a product (or suite of products) that is created to be environmentally friendly, such as a hybrid car or food containers made from recycled material. Apart from serving as a manufacturer's response to environmental and social concerns, green brands are designed to enhance consumer appeal for a product and to boost the manufacturer's image.

**greeting behavior** a form of ATTACHMENT BEHAVIOR that in humans begins to manifest itself clearly at about 6 months of age, when the infant responds to the arrival of a parent or caregiver.

**gregariousness** *n.* the tendency for human beings to enjoy the company of others and to want to associate with them in social activities. Gregariousness gives people security, companionship, acceptance, and a sense of belonging. In nonhuman animals, gregariousness is seen in the tendency to congregate in herds or flocks. See NEED FOR AFFILIATION; SOCIAL INSTINCT. —**gregarious** *adj.*

**grid cell** a type of neuron that encodes abstract spatial information about distances, forming a gridlike array of activity presumably used by other brain structures in spatial computations. Originally found in the medial ENTORHINAL CORTEX, which acts as a gateway regulating the flow of information from sensory cortices to the hippocampus, grid cells have since been identified in areas of the SUBICULUM as well. They have response properties independent of any particular environment; each cell fires selectively at multiple spatial locations, which are geometrically arranged to form a hexagonal lattice representing an organ-

ism's surroundings. Several theories have been proposed to account for the precise mechanisms by which grid cells code trajectories through space, such as the **oscillatory interference model** and the **moiré interference model**. See also SPATIAL COGNITION. [discovered in rats in 2005 by Norwegian physiologist Torkel Hafting (1972– ), U.S.-born Norwegian neuroscientist Marianne Fyhn, Norwegian physiologist Sturla Molden, and Norwegian neuroscientists May-Britt Moser (1963– ) and Edvard I. Moser (1962– )]

**grid organizational development** (grid OD) a comprehensive organizational intervention based on the BLAKE–MOUTON MANAGERIAL GRID. The aim is to increase managers' concerns for both production and people, thereby improving ORGANIZATIONAL EFFECTIVENESS. It consists of six phases conducted in the following order: (a) a seminar on the Blake–Mouton grid, (b) teamwork development, (c) intergroup development, (d) development of an ideal strategic corporate model, (e) implementation of the ideal strategic model, and (f) systematic critique. [designed by U.S. psychologists Robert R. Blake (1918–2004) and Jane S. Mouton (1930–1987)]

**grief** *n.* the anguish experienced after significant loss, usually the death of a beloved person. Grief is often distinguished from BEREAVEMENT and MOURNING. Not all bereavements result in a strong grief response, and not all grief is given public expression (see DISENFRANCHISED GRIEF). Grief often includes physiological distress, SEPARATION ANXIETY, confusion, yearning, obsessive dwelling on the past, and apprehension about the future. Intense grief can become life-threatening through disruption of the immune system, self-neglect, and suicidal thoughts. Grief may also take the form of regret for something lost, remorse for something done, or sorrow for a mishap to oneself.

**grief counseling** the provision of advice, information, and psychological support to help individuals whose ability to function has been impaired by someone's death, particularly that of a loved one or friend. It includes counseling for the grieving process and practical advice concerning arrangements for the funeral and burial of the loved one. Grief counseling is sometimes offered by staff in specialized agencies (e.g., hospices), or it may be carried out in the context of other counseling. See also BEREAVEMENT THERAPY.

**grief cycle model** see STAGES OF GRIEF.

**grief work** (**griefwork**) *n.* the theoretical process through which bereaved people gradually reduce or transform their emotional connection to the person who has died and thereby refocus appropriately on their own ongoing lives. Originally conceived by Sigmund FREUD in his 1917 essay "Mourning and Melancholia" as a process in which the successful outcome is the bereaved's emotional detachment from the deceased, grief work has in recent years revolved around the notion of a CONTINUING BOND. That is, the bereaved does not sever all emotional connections with the deceased but instead transforms the relationship symbolically as an ongoing bond that provides a sense of meaning and value conducive to forming new relationships.

**grievance** *n.* **1.** a feeling of resentment arising from a sense of having been unjustly treated. **2.** in industrial and organizational psychology, a complaint filed by an employee according to rules and procedures set forth by the

management of the organization or in a contract negotiated with the union representing that employee.

**Griggs v. Duke Power Co.** a case resulting in an influential 1971 ruling by the U.S. Supreme Court regarding discrimination in hiring practices. The ruling established that proof of discrimination does not require the plaintiff to show that the defendant had intention or motives to discriminate if the selection practices had an ADVERSE IMPACT on a particular group (e.g., those defined by ethnicity, age, or sex).

**Grip Strength Test** a test in which the strength of hand grip is assessed with a dynamometer. It is part of the HALSTEAD-REITAN NEUROPSYCHOLOGICAL BATTERY. Also called **Hand Dynamometer Test**.

**grisi siknis** a CULTURE-BOUND SYNDROME found in Nicaragua and characterized by headache, anxiety, anger, and the sudden onset of an episode of hyperactivity and potentially dangerous behavior in the form of running or fleeing. There is ensuing exhaustion, sleep, and amnesia for the episode. The syndrome, which has some similarities to PIBLOKTO, is usually classified as a DISSOCIATIVE TRANCE DISORDER.

**grit** *n.* a personality trait characterized by perseverance and passion for achieving long-term goals. Grit entails working strenuously to overcome challenges and maintaining effort and interest over time despite failures, adversities, and plateaus in progress. Recent studies suggest this trait may be more relevant than intelligence in determining a person's high achievement. For example, grit may be particularly important to accomplishing an especially complex task when there is a strong temptation to give up altogether.

**GRIT** acronym for GRADUATED AND RECIPROCATED INITIATIVES IN TENSION REDUCTION.

**Grit Scale** a 17-item self-report measure used to assess perseverance and passion for achieving long-term goals. Participants use a 5-point scale, ranging from *not like me at all* (1) to *very much like me* (5), to rate how much they agree with statements such as "I finish whatever I begin," "I have overcome setbacks to conquer an important challenge," and "My interests change from year to year." The instrument yields an overall grit score as well as subscale scores for consistency of interest and perseverance of effort. There is also an eight-item version of the measure called the **Short Grit Scale (Grit-S)**. [developed in 2007 by U.S. psychologists Angela Lee Duckworth, Christopher PETERSON, Michael D. Matthews (1953– ), and Dennis R. Kelly]

**grooming** *n.* **1.** a basic function of self-care that includes maintaining one's body, hair, clothes, and general appearance. This includes such activities as bathing, shaving, toothbrushing and flossing, hair brushing and styling, nail trimming, and applying cosmetics. Reacquiring grooming skills that have been lost or compromised due to mental or physical impairment is a central aspect of many rehabilitation programs. **2.** behavior in which a nonhuman animal picks through its own or another animal's hair, fur, or feathers. Whereas the main function of self-grooming is hygienic (i.e., to remove dirt and parasites), grooming of other members of an animal's group may serve both hygienic and social functions. See ALLOGROOMING.

**Grooved Pegboard Test (GPT)** a cognitive-motor test measuring psychomotor speed, fine motor control, and rapid visual-motor coordination. The task is to insert, with

each hand, 25 metal pegs with ridges along the sides into a  $5 \times 5$  matrix of slotted holes that are angled in different directions. Completion times for the dominant and nondominant hands are compared, with a shorter completion time expected for the dominant hand. [developed in the 1960s by Hallgrim Kløve (1927–2010), Norwegian neuropsychologist]

**gross motor** describing activities or skills that use large muscles to move the trunk or limbs and control posture to maintain balance. Examples of **gross motor skills** include waving an arm, walking, hopping, and running. Compare FINE MOTOR.

**ground** *n.* the relatively homogeneous and indistinct background of FIGURE-GROUND perceptions.

**ground bundle** a short tract within the spinal cord that connects different or neighboring levels of the cord. Also called **intersegmental tract**.

**grounded theory** a set of procedures for the systematic analysis of unstructured QUALITATIVE DATA so as to derive by INDUCTION a supposition that explains the observed phenomena. A researcher typically observes the entity of interest in a natural setting before drawing conclusions about its nature and existence.

**ground rules** in psychotherapy, the elements of the contract for therapy, including but not limited to the fee; the time, location, and frequency of the sessions; and therapist confidentiality.

**group** *n.* any collection or assemblage, particularly of items or individuals. For example, in social psychology the term refers to two or more interdependent individuals who influence one another through social interactions that commonly include structures involving roles and norms, a degree of cohesiveness, and shared goals. Such **social groups** thus are contrasted with AGGREGATIONS. Similarly, in animal behavior, a group refers to an organized collection of individuals that moves together or otherwise acts to achieve some common goal (e.g., protection against predators) that would be less effectively achieved by individual action, and in research, it denotes a collection of participants who all experience the same experimental conditions and whose responses are to be compared to the responses of one or more other collections of research participants.

**group abilities** abilities, such as verbal-comprehension, spatial, and memory abilities, that are sources of individual differences in some groups of intelligence tests.

**group acceptance** the degree to which group members approve of a new, prospective, or potential member as reflected in his or her admission to the group and relative status and role within it.

**group-analytic psychotherapy** a type of group psychotherapy that focuses on the communication and interaction processes taking place in the group as a whole. Interventions make use of group rather than individual forces as the principal therapeutic agent. Also called **therapeutic group analysis**. [originated in the 1940s by German-born psychoanalyst Sigmund Heinrich Foulkes (1898–1976)]

**group attribution error** the tendency for perceivers to assume that a specific group member's personal characteristics and preferences, including beliefs, attitudes, and decisions, are similar to those of the group to which he or she belongs. For example, observers may assume that an individual who is a member of a group that publicly an-

nounces its opposition to an issue also opposes the issue, even though the group's decision to take the stated position may not have been unanimous. See also GROUP FALLACY; OUTGROUP HOMOGENEITY BIAS. [originally described in 1985 by U.S. social psychologists Scott T. Allison and David M. Messick]

**group behavior** actions performed by a group as a whole or by individuals when part of a group. In the latter case, it applies particularly to those actions that are influenced (either directly or indirectly) by the group and are atypical of actions performed by the same individuals when alone.

**group boundary** the implicit and explicit standards that set limits on aspects of the group, including who can be members, the expected duties of members, and the types of actions that the group will permit members to perform.

**group-centered leader** see DEMOCRATIC LEADER.

**group climate** the relative degree of acceptance, tolerance, and freedom of expression that characterizes the relationships within a counseling or therapy group. Interpersonal behavioral boundaries are generally freer and broader than in nontherapeutic social contexts, and the meaning of interpersonal behavior is often the specific focus of group discussion.

**group cohesion** the unity or solidarity of a group, including the integration of the group for both social and task-related purposes. Group cohesion is indicated by the strength of the bonds that link members to the group as a whole, the sense of belongingness and community within the group, the feelings of attraction for specific group members and the group itself as experienced by individuals, and the degree to which members coordinate their efforts to achieve goals, although these factors are neither necessary nor sufficient conditions for cohesion. In many cases, the higher the cohesion, the stronger the members' motivation to adhere to the group's standards and the more stable the group's membership. Group cohesion frequently is considered essential to effective GROUP THERAPY. Also called **group cohesiveness**. See also ESPRIT DE CORPS; GROUP SOLIDARITY.

**group-comparison design** a type of research approach that investigates potential differences across sets of individuals who are often randomly assigned to a CONTROL CONDITION or to one or more specific EXPERIMENTAL CONDITIONS. Data from a group-comparison design are often analyzed with statistical methods such as a T TEST or ANALYSIS OF VARIANCE. Also called **group-difference design**.

**group consciousness** **1.** the awareness exhibited by individual group members about the group, its members, and their commonalities. Just as SELF-CONSCIOUSNESS pertains to awareness of the self, so group consciousness pertains to awareness of the collective. **2.** see GROUP MIND.

**group contagion** see SOCIAL CONTAGION.

**group counseling** a method of providing guidance and support for clients organized as a group, as opposed to individual counseling. Group counseling can be used, for example, to assist high school students in choosing a college or to assist employees of an organization in stating dissatisfactions and proposing solutions to managers and employers.

**group decision support systems (GDSS)** technology used to improve the quality, speed, and efficiency of

group decision making and to help the group avoid common sources of error, such as pressures to conform. GDSS most often comes in the form of computer software modules that help the group to communicate freely about an issue, identify key stakeholders and their assumptions, formulate ideas, and evaluate and vote on alternatives.

**group development** **1.** naturally occurring patterns of growth and change that unfold across the lifespan of a group. The term usually implies a progressive movement toward a more complete or advanced state, with different theorists characterizing this movement (a) as either discontinuous and occurring in distinct stages or continuous and incremental and (b) as either irreversible or cyclical and repetitious. See also EQUILIBRIUM MODEL OF GROUP DEVELOPMENT. **2.** a strategic intervention designed to alter the processing and functioning of a group; this usually involves assessing the group's current level of development, helping to clarify its mission and goals, and reviewing its operating procedures. See also TEAM BUILDING.

**group difference** any observed variation between groups of participants in an experiment when considering each group as a single entity. See GROUP-COMPARISON DESIGN.

**group dynamics** **1.** the processes, operations, and changes that occur within social groups, which affect patterns of affiliation, communication, conflict, conformity, decision making, influence, leadership, norm formation, and power. The term, as used by Kurt LEWIN, emphasizes the power of the fluid, ever-changing forces that characterize interpersonal groups. See also INTERGROUP DYNAMICS. **2.** the field of psychology devoted to the study of groups and group processes. **3.** a conceptual and clinical orientation in group psychotherapy that explicitly recognizes and explores group-level processes in the treatment group.

**grouped data** information that is grouped into one or more sets in order to analyze, describe, or compare outcomes at a combined level rather than at an individual level. For example, data from a FREQUENCY DISTRIBUTION may be arranged into CLASS INTERVALS. See also GROUP-COMPARISON DESIGN.

**grouped frequency distribution** a description of how often a set of specific responses, organized into equal-sized subsets of possible responses, occur in a sample. It is a type of FREQUENCY DISTRIBUTION that is particularly useful when there are a large number of response choices (e.g., 10–20 or more) and researchers wish to present the information more concisely. For example, suppose that a researcher wants to summarize the individuals in a sample in which age ranges from 16 to 85 years. Instead of listing all 69 different ages, the researcher could combine the data into 5-year intervals, which would produce 14 subsets of ages (e.g., 16–20, 21–25, 26–30, . . . 81–85), thus reducing a large number of scores into smaller, more manageable groups.

**group effect** a research finding specific to the group of individuals to which a participant belongs. A group effect could appear in an assigned subset, such as a treatment or intervention, or in a naturally occurring subset, such as age level or classroom. For example, a researcher might be interested in a group effect of a specific reading intervention, or in a group effect of book reading for students in the current decade who may be reading less than previous sets of students owing to more common use of the computer and television.

**group experience** in group psychotherapy and counseling, the interactions that give each client in the group an opportunity to gain insight into his or her problems by sharing with and learning from other members. The group experience is particularly valuable in helping clients understand how they are perceived by other people. When group therapy or counseling is given in addition to individual intervention, it allows the therapist or counselor to observe the client's emotional difficulties as revealed in group interactions.

**group experiment** an experiment in which subsets of individuals serve as the unit of analysis. For example, a researcher could compare the performance of different classrooms rather than of specific students.

**group factors** the psychometric entities underlying GROUP ABILITIES.

**group fallacy** **1.** the assumption, regarded as erroneous, that the actions and experiences of people in groups cannot be understood completely through analysis of the qualities of the individual members. **2.** the mistaken assumption that a group is totally uniform, whereas in fact members differ from one another in many respects. See also OUTGROUP HOMOGENEITY BIAS.

**group health plan** an insurance plan that offers health care coverage to a group of individuals under a single insurance contract. In the United States, group health plans are often offered by employers to their employees as a fringe benefit. Membership organizations, such as unions, alumni associations, and professional associations, may also offer group health plans as a benefit of membership.

**group home** a residential facility that offers housing and personal care services, such as meals, supervision, and transportation. Also called **group residence**.

**group hypnosis** the simultaneous hypnosis of several people by the same practitioner. It is sometimes used for therapeutic purposes, as in the treatment of drug addiction. Also called **collective hypnosis**.

**group hysteria** see COLLECTIVE HYSTERIA.

**group identification** **1.** the act or process of associating oneself with a group and its members, such that one imitates and internalizes the group's actions, beliefs, standards, objectives, and so forth. This process can lead to an enhanced sense of group belonging, group pride, and group commitment as well as to AUTOSTEREOTYPING. **2.** more rarely, the act of considering another group's perspective or outlook even though one is not a member of that group.

**group identity** **1.** the image of a group (e.g., reputation, appraisal, expectations about) held by its members or by those external to the group. **2.** an individual's sense of self as defined by group membership. See SOCIAL IDENTITY.

**grouping** *n.* **1.** in education, the process of assigning pupils to grades, classes, or subgroups. **2.** in statistics, the process of arranging scores in categories, intervals, classes, or ranks.

**group intelligence test** an INTELLIGENCE TEST administered simultaneously to all the individuals in a group.

**group interview** an interview in which one or more questioners elicit information from two or more respondents in an experimental or real-life situation. The participation and interaction of a number of people, particularly if they are acquainted with each other as members of a

club or similar group, is believed to yield more informative responses than are typically obtained by interviewing individuals separately.

**group marriage** a family pattern found in some indigenous cultures and certain minority religious groups in which several men and women live together, sharing the burdens of the household, the tasks of child rearing, and a common sexual life. See also COMMUNE; POLYGAMY.

**group medical practice** the practice of medicine by a group of physicians, typically various specialists, associated not only for administrative reasons but also for such clinical purposes as cooperative diagnosis, treatment, and prevention. Also called **group practice**.

**group mind** a hypothetical explanation for the apparent uniformity of individuals' emotional, cognitive, and behavioral reactions when in large crowds and collectives; it supposes that a crowd of people can, in certain instances, become a unified entity that acts as if guided by a single consciousness created by the fusion of the individual minds in a collective. This controversial idea, often seen as a prime example of the GROUP FALLACY, assumes that the group mind is greater than the sum of the psychological experiences of the individuals and that it can become so powerful that it can overwhelm the will of the individual. Also called **collective consciousness**; **collective mind**; **group consciousness**. See also FOLK SOUL.

**group morale** group members' overall level of enthusiasm (confidence, dedication, zeal) for the group, its tasks, and its goals.

**group network** **1.** the relatively organized system of connections linking members of a group, unit, or collective, including social or interpersonal evaluations (e.g., friendship, acquaintanceship, dislike), communication, transfer of resources, and formal role relationships (e.g., supervisor-subordinate). **2.** in SOCIAL NETWORK ANALYSIS, the entire set of connections linking all individuals or nodes in the specific group or collective being studied. Also called **sociocentric network**. Compare EGO-CENTERED NETWORK.

**group norm** see SOCIAL NORM.

**group personal space** see GROUP SPACE.

**group polarization** the tendency for members of a group discussing an issue to move toward a more extreme version of the positions they held before the discussion began. As a result, the group as a whole tends to respond in more extreme ways than one would expect given the sentiments of the individual members prior to deliberation. Polarization is sustained by social comparison (see SOCIAL COMPARISON THEORY), by exposure to other members' relatively extreme responses (see PERSUASIVE ARGUMENTS THEORY), and by groups' implicit SOCIAL DECISION SCHEMES. See CHOICE SHIFT; RISKY SHIFT.

**group potency** the expectations held in common by group members about the group's COLLECTIVE EFFICACY; that is, the group's overall confidence or "can do" attitude.

**group practice** see GROUP MEDICAL PRACTICE.

**group pressure** direct or indirect SOCIAL PRESSURE exerted by a group on its individual members to influence their choices. Such pressure may take the form of rational argument and persuasion (INFORMATIONAL INFLUENCE), calls for conformity to group norms (NORMATIVE INFLUENCE), or more direct forms of influence, such as demands,

threats, personal attacks, and promises of rewards or social approval (INTERPERSONAL INFLUENCE).

**group problem solving** the use of a social group to resolve matters that involve doubt, uncertainty, or unknown difficulties. The typical stages involved in group problem solving include (a) identification of the problem and the process to use in solving it, (b) gathering of information and evaluation of alternatives through discussion, (c) selection of the solution, and (d) implementation of the solution.

**group process** the interpersonal component of a group session, in contrast to the content (such as decisions or information) generated during the session.

**group-randomized trial** a research design in which groups of individuals are randomly assigned to TREATMENT conditions or CONTROL CONDITIONS. In educational or organizational settings, for example, a group-randomized trial could be used to study classrooms or departments, evaluating the data by means of HIERARCHICAL LINEAR MODELING and similar analyses that take the larger group membership (e.g., classroom, department) into account. It is similar to a RANDOMIZED CLINICAL TRIAL but distinct in assigning intact clusters of participants, rather than individual participants, to the specific conditions. Also called **cluster-randomized trial**.

**group relations theory** the view that behavior is influenced not only by one's unique pattern of traits but also by one's need to conform to social demands and expectations. Social determinants become particularly evident in group therapy, which tends to challenge attitudes, such as prejudices, that are based on conformity and restricted thinking. [proposed by Gordon W. ALLPORT]

**group residence** see GROUP HOME.

**group risk taking** embarking on a hazardous, dangerous, or uncertain course of action as a social group. Studies of GROUP POLARIZATION and CHOICE SHIFT indicate that group decisions tend toward greater extremity or risk than individual decisions. See RISKY SHIFT.

**group role** a coherent set of behaviors expected of a person in a specific position within a group. In addition to the basic roles of leader and follower, groups usually allocate TASK ROLES pertaining to the group's tasks and goals and RELATIONSHIP ROLES that focus on the group members' interpersonal and emotional needs.

**group selection** the concept that social groups can act as adaptive units in NATURAL SELECTION. See KIN SELECTION. Compare INDIVIDUAL SELECTION.

**group sequential design** a research design in which a treatment is randomly assigned to different groups at varying times, such that every group receives the treatment eventually. A group sequential design is useful when it is important for each participant to have an opportunity to benefit from the treatment, but a comparison group nonetheless is required: The portion of the sample that receives the treatment later acts as a CONTROL GROUP initially.

**group-serving bias** any one of a number of cognitive tendencies that contribute to an overvaluing of one's group, particularly the tendency to credit the group for its successes but to blame external factors for its failures. Also called **sociocentric bias**. Compare SELF-SERVING BIAS. See also ULTIMATE ATTRIBUTION ERROR; INGROUP BIAS.

**group sex** sexual activity among a group of people who

obtain sexual stimulation through such means as observing each other, experimenting with different techniques, and having multiple partners either simultaneously or in succession.

**group socialization** **1.** the process of interaction between an individual and a group that begins when he or she first considers joining the group and ends when he or she leaves it. The individual learns to adjust to various group norms and behave in a manner acceptable to group members. **2.** the process by which an individual, from infancy onward, acquires social skills, beliefs, values, and behaviors through interaction with and observation of others in a group context.

**group socialization theory** a theory of personality development proposing that children are primarily socialized by their peers and that the influences of parents and teachers are filtered through children's peer groups. According to this theory, children seek to be like their peers rather than like their parents. [proposed by U.S. developmental psychologist Judith Rich Harris (1938– )]

**group solidarity** a sense of fellowship and community displayed by members of a collective who are united by shared purposes, responsibilities, and interests. See also GROUP COHESION; ESPRIT DE CORPS.

**group space** territory defined by the temporary boundary that forms around interacting groups and serves as a barrier to unwanted intrusion by nonmembers. Also called **group personal space; interactional territory**.

**group structure** the arrangement of individuals and their relationships, both implicit and formalized, in a group, including positions, roles, and patterns of authority, attraction, and communication. See also SOCIAL STRUCTURE.

**group superego** in psychoanalytic theory, the portion of the SUPEREGO acquired from peer groups as opposed to the part derived from parental IDENTIFICATIONS. In a group, the collective superego or lack thereof is seen as superordinate to the superegos of the individuals that comprise the group.

**group synergy** **1.** a social process that occurs when a group, by acting in concert, achieves an outcome that is superior to what would be achieved by the most capable member or by any simple pooling of individual member efforts, often summarized by the phrases "the whole is greater than the sum of the parts" or " $2 + 2 = 5$ ." See also ASSEMBLY BONUS EFFECT. **2.** in Raymond B. CATTELL's group psychology, the sum of all individual members' energy going into the group: that is, the total available group energy or investment in itself.

**group territorial behavior** the tendency for ethnic and other groups to establish and defend areas as separate or shared territories. Such behavior can be observed, for instance, in the neighborhoods of large cities and in the activities of city street gangs. A form of intragroup territorial behavior is often seen in family settings and workplaces, where individuals may regard certain rooms or areas or even certain chairs as their personal territory.

**group therapy** treatment of psychological problems in which two or more participants interact with each other on both an emotional and a cognitive level in the presence of one or more psychotherapists who serve as catalysts, facilitators, or interpreters. The approaches vary, but in general they aim to provide an environment in which

problems and concerns can be shared in an atmosphere of mutual respect and understanding. Group therapy seeks to enhance self-respect, deepen self-understanding, and improve interpersonal relationships. Also called **group psychotherapy**. Compare INDIVIDUAL THERAPY.

**groupthink** *n.* a strong CONCURRENCE-SEEKING tendency that interferes with effective group decision making. Symptoms include apparent unanimity, illusions of invulnerability and moral correctness, biased perceptions of the OUTGROUP, interpersonal pressure, self-censorship, and defective decision-making strategies. Causes are thought to include GROUP COHESION and isolation, poor leadership, and the stress involved in making decisions. [identified by Irving L. JANIS]

**groupware** *n.* computer software associated with collaborative work (i.e., among several people on the same project) and GROUP DECISION SUPPORT SYSTEMS.

**GROW** *n.* a mutual-help organization originated in Australia in 1957 to provide help for individuals with depression, anxiety, and other mental health problems. Using a TWELVE-STEP PROGRAM, it offers a "caring and sharing" community to help members attain emotional maturity, personal responsibility, and recovery from mental illness.

**growth** *n.* **1.** the series of physical changes that occur from conception through maturity. **2.** the development of any entity toward its mature state.

**growth cone** the growing tip of an AXON or a DENDRITE.

**growth curve** **1.** a graphic representation of the growth rate of an organism. **2.** a graphic representation of the progressive increase in learning of an individual or group. See LEARNING CURVE.

**growth function** the relationship between a DEPENDENT VARIABLE and several levels of an INDEPENDENT VARIABLE defined in units of time (e.g., days, weeks, months, years).

**growth group** a group that focuses on the development of its individual members. See also ENCOUNTER GROUP; T-GROUP.

**growth hormone (GH)** a hormone, secreted by the anterior PITUITARY GLAND, that promotes the growth of cells and tissues. It stimulates protein synthesis, bone growth in early life, mobilization of fat stores, and carbohydrate storage. In humans, excessive secretion of growth hormone results in GIGANTISM in children and ACROMEGALY in adults. Also called **somatotropic hormone**; **somatotropin**. See also SOMATOMEDIN.

**growth motivation** see METAMOTIVATION.

**growth needs** see EXISTENCE, RELATEDNESS, AND GROWTH THEORY.

**growth principle** the concept that in an atmosphere free of coercion and distortion an individual's creative and integrative forces will lead to fuller adaptation, insight, self-esteem, and realization of potential. [formulated by Carl ROGERS]

**growth spurt** any period of accelerated physical development, especially the PUBESCENT GROWTH SPURT.

**GSP nerve** abbreviation for GREATER SUPERFICIAL PETROSAL NERVE.

**G-spot** abbreviation for GRAEFENBERG SPOT.

**GSR** abbreviation for GALVANIC SKIN RESPONSE.

**G statistic** a value used to assess the presence of spatial clustering or AUTOCORRELATION in a data set. A large G statistic with a small accompanying PROBABILITY LEVEL, or *p* value (e.g., < .05), suggests there are subsets of dependence or clustering.

**G-tolerance limits** the maximum gravitation effects (g-forces) that an individual can withstand before blacking out as a result of acceleration drawing blood out of the head toward the feet (the +Gz direction). Pilots of high-performance aircraft can tolerate +9 Gz with use of G-suits and straining maneuvers. The duration of G-exposure and the type of safety protection used are important in determining whether or not blackout will occur.

**guanfacine** *n.* a drug used for the treatment of hypertension. It acts as an agonist at ALPHA-ADRENERGIC RECEPTORS, directly stimulating  $\alpha_2$ -adrenoreceptors to restrict the flow of impulses in peripheral sympathetic nerves supplying the arteries, thus causing them to relax (widen); most of the other commonly prescribed antihypertensive drugs act as beta blockers or as diuretics. Guanfacine is also a sedating agent used in the treatment of attention-deficit/hyperactivity disorder; it may, however, cause excess sedation and hypotension (low blood pressure). The drug has also been investigated for the management of posttraumatic stress disorder, Tourette's disorder, and Alzheimer's disease. U.S. trade names: **Intuniv**; **Tenex**.

**guanine** (symbol: G) *n.* a purine compound in the nucleotides of living organisms. It is one of the four bases in DNA and RNA constituting the GENETIC CODE, the others being adenine, cytosine, and thymine or uracil.

**guarana** *n.* a shrub (*Paullinia cupana*) indigenous to the Brazilian Amazon, the seeds of which were originally thought to contain guaranine, a METHYLXANTHINE compound that is essentially indistinguishable from CAFFEINE. It is now known that guarana in fact contains a significant amount of caffeine, which is its primary active ingredient, as well as lesser amounts of the methylxanthines theophylline (the active ingredient in tea) and THEOBROMINE. Used as a stimulant and appetite suppressant, guarana is available in many over-the-counter preparations in the United States and other Western nations. At recommended doses, it appears to have the same mild adverse effects known to be associated with other sympathomimetic stimulants (e.g., restlessness, increased urination, gastrointestinal distress) but may interact with medications, particularly MONOAMINE OXIDASE INHIBITORS. Additionally, additive effects and potential toxicity may occur when guarana is combined with other caffeine-containing products, and there is growing concern that use of guarana-containing products may cause such serious adverse events as chest pain, irregular heartbeat, seizures, coma, and possibly death.

**guardian ad litem** an individual appointed by the court to represent in a lawsuit someone who is incapacitated either by age or by mental or physical disability. The individual's status as guardian ad litem is temporary and is dissolved upon resolution of that lawsuit.

**guardianship** *n.* a legal arrangement that places the care of a person and his or her property in the hands of another. When people are MINORS or are deemed incompetent by the court and therefore unable to make decisions about their own care or to manage their own affairs, a **guardian** is appointed by the court to manage their property, make personal decisions on their behalf, and provide for their care and well-being. See also CONSERVATORSHIP; LIMITED GUARDIANSHIP.



**Guérin–Stern syndrome** see ARTHROGRYPOSIS MULTI-PLEX CONGENITA. [Jules René **Guérin** (1801–1886), French orthopedist, and Walter G. **Stern**, U.S. physician]

**guess-who technique** a type of personality rating device used chiefly in schools. Students are given short word pictures depicting a variety of personality types and are directed to identify the classmates whose personalities seem to correspond most closely to those descriptions.

**GUI** abbreviation for GRAPHICAL USER INTERFACE.

**guidance** *n.* direction, advice, and counseling provided in cooperation with the recipient, often using personal data and interviews as important auxiliary tests.

**guidance program** the cumulative resources of staff and techniques used by a school to assist students in resolving scholastic or social problems. A specialized approach will include professionally trained counselors, social workers, and test administrators who each have specified functions within the overall program. In some programs, the use of specialists may be minimized, with teachers and administrators filling guidance functions.

**guidance specialist** an individual who has been trained in a counselor education program or whose credentials and experience are adequate to provide guidance.

**guided affective imagery (GAI)** in psychodynamic psychotherapy, a technique of using imagery to draw out emotional fantasies, or waking dreams, and to facilitate the cathartic release of emotions that are present but painful for the client to discuss. The therapist suggests concentration on past images that would bring up the emotional state or, in some cases, images of desired future successes. See also VISUALIZATION. [developed by German psychiatrist Hanscarl Leuner (1919–1996)]

**guided imagery** a mind–body technique involving the deliberate prompting of mental images to induce a relaxed, focused state with the goal of achieving such varied purposes as managing stress or pain, promoting healing, or enhancing performance. See also VISUALIZATION.

**guided participation** a process in which the influences of social partners and sociocultural practices combine in various ways to provide children and other learners with direction and support, while the learners themselves also shape their learning engagements. It occurs not only during explicit instruction but also during routine activities and communication in everyday life. See SOCIOCULTURAL PERSPECTIVE. [proposed in the early 1980s by U.S. developmental psychologist Barbara Rogoff (1950– )]

**guided performance** the process in which a learner is assisted with information or guidance to minimize errors, as when a teacher guides the learner's movements or steps in solving a problem.

**guided-search theory** a two-stage model of visual processing in which initial parallel search mechanisms direct subsequent serial search mechanisms. In the first stage, basic stimuli features are processed simultaneously at all locations across the visual field; then, in the second, limited-capacity serial stage, processing is more complex and restricted to a particular item or location based on information obtained in the previous stage. For example, during a VISUAL SEARCH for a red circle among green circles and red squares, the model suggests that a color processor scans for all red items while a shape processor simultaneously scans for all circles, and the combination of these two sources of information then narrows subsequent attentional focus to

that item most likely to be the target; if that item proves not to be the target, attention proceeds to the next most promising item. Guided search departs from FEATURE-INTEGRATION THEORY and other models that consider second-stage serial resources to be deployed from item to item relatively randomly. [proposed in 1989 by British-born U.S. cognitive psychologist Jeremy M. Wolfe (1955– ), Kyle R. Cave, and Susan L. Franzel]

**guiding fiction** a personal principle that serves as a guideline by which individuals can understand and evaluate their experiences and determine their lifestyle. In individuals considered to be in good or reasonable mental health, the guiding fiction is assumed to be realistic and adaptive. In those who are not, it is assumed to be unrealistic and nonadaptive. [term originally used by Alfred ADLER]

**Guilford dimensions of intelligence** three dimensions of intelligence postulated by Joy Paul GUILFORD to underlie individual differences in scores on intelligence tests, namely, contents, operations, and products. Each mental ability represents a combination of these three facets. For example, performance on a verbal-analogies test would represent a combination of cognition (operation) of verbal (content) relations (product). The number of mental abilities initially proposed by Guilford was 120; this was later increased to 150. The validity of this theory was subsequently called into question by the work of U.S. psychologist John L. Horn (1928–2006), which suggested that the existence of the proposed factors is not supported by research results. See also STRUCTURE OF INTELLECT MODEL.

**Guilford–Zimmerman Temperament Survey (GZTS)** a personality inventory for use with individuals ages 16 years and older, measuring 10 traits identified by FACTOR ANALYSIS: ascendance, sociability, friendliness, thoughtfulness, personal relations, masculinity, objectivity, general activity, restraint, and emotional stability. It comprises 300 descriptive statements to which participants respond *yes*, *no*, or *?*. [originally developed in 1949 by U.S. psychologists Joy Paul GUILFORD and Wayne S. Zimmerman (1916– )]

**Guillain–Barré syndrome** an acute, progressive, demyelinating type of PERIPHERAL NEUROPATHY that starts with muscular weakness and loss of normal sensation in the extremities, spreading inward as the disease progresses. The condition often begins in the feet and ascends toward the head. These symptoms can increase in intensity until the muscles cannot be used at all and the individual is almost totally paralyzed, in which case the disorder is life threatening. Because the syndrome often develops after an infection, it may result from an immune reaction. [Georges **Guillain** (1876–1961) and Jean **Barré** (1880–1967), French neurologists]

**guilt** *n.* a SELF-CONSCIOUS EMOTION characterized by a painful appraisal of having done (or thought) something that is wrong and often by a readiness to take action designed to undo or mitigate this wrong. It is distinct from SHAME, in which there is the additional strong fear of one's deeds being publicly exposed to judgment or ridicule. —**guilty** *adj.*

**guilt by association** responsibility for a misdeed ascribed to an innocent person solely because he or she has some connection with the perpetrator (or perpetrators) of the wrong. The observer's negative attitude toward the wrongdoer generalizes to the associated person.

**guilt culture** a trend or organizing principle in a society

characterized by the use of guilt to promote socially acceptable behavior. Guilt cultures emphasize both self-control in the face of temptation and self-initiated responsibility for one's actions if transgressions should occur. Compare SHAME CULTURE.

**guilty but mentally ill (GBMI)** a court judgment that may be made in some states when defendants plead insanity (see INSANITY DEFENSE). Defendants found guilty but mentally ill are treated in a mental hospital until their mental health is restored; they then serve the remainder of their sentence in the appropriate correctional facility.

**guilty knowledge test** a form of lie detection in which knowledge about the details of a crime is tested. A POLYGRAPH examiner presents examinees with multiple-choice questions concerning the crime, to which only the guilty party should know the correct answers; it is assumed that innocent examinees will see all options as equally plausible. The polygraph examiner measures the examinees' physiological arousal as each option is presented and identifies which option produces the highest physiological response. Over a series of questions, if an individual consistently shows the greatest response to the correct option, the examiner may identify that person as untruthful in his or her denial of knowledge of the details of the crime. See also CONTROL QUESTION TEST; RELEVANT-IRRELEVANT TEST.

**Gulf War syndrome** a collection of unexplained symptoms experienced by some veterans of the 1991 Gulf War. Symptoms may include headaches, fatigue, joint pain, skin rashes, and memory loss.

**Günther's disease** a congenital form of PORPHYRIA in which excess porphyrin is formed in the bone marrow. Psychological and neurological changes often accompany pain, nausea, and other symptoms. [Hans **Günther** (1884–1929), German physician]

**guru** *n.* **1.** in Hinduism and Sikhism, a spiritual teacher or leader, specifically one charged with keeping alive the oral teachings. **2.** in general usage, any teacher, counselor, or intellectual leader, particularly one regarded as having special knowledge. [Sanskrit, literally: "teacher"]

**gustation** *n.* the sense of TASTE. Taste is at the threshold between the external (chemical) and internal (biochemical) worlds; it serves an organism's nutritional needs and protects it from poisons. —**gustatory** *adj.*

**gustatory agnosia** the inability to identify or categorize gustatory (taste) stimuli, despite the capacity to experience them.

**gustatory encoding** see VISUAL ENCODING.

**gustatory hallucination** a false and enduring taste sensation, usually of bitterness or sourness. It is often attributable to tonic stimulation of TASTE CELLS or of the peripheral taste nerves.

**gustatory nerve** see LINGUAL NERVE.

**gustatory neuron types** categories into which taste neurons of the peripheral and central nervous system can be grouped according to their sensitivities to PRIMARY TASTE qualities. About 40% of the taste neurons in primates are most responsive to sweet stimuli, 35% to those that are salty, 20% to bitter chemicals, and 5% to acids. Therefore, some 75% of neurons are devoted to detecting nutrients and 25% to avoiding toxins.

**gustatory qualities** the range of taste sensations to

which humans are sensitive. These are often categorized into basic, or primary, tastes—thought to be SWEET, SALTY, UMAMI, SOUR, and BITTER—although the full range of taste perceptions may exceed these categories.

**gustatory stimulus** a chemical capable of activating TASTE CELLS. Gustatory stimuli include sugars (SWEET), salts of sodium (SALTY) and heavier elements (BITTER or rarely sweet), acids (SOUR), alkaloids (bitter), and monosodium glutamate (UMAMI), among others. Also called **sapid stimulus**; **taste stimulus**.

**gustatory system** the primary structures and processes involved in an organism's detection of and responses to gustatory stimuli. The gustatory system includes lingual PAPILLAE, TASTE BUDS and TASTE CELLS, TASTE TRANSDUCTION, neural impulses and pathways (see GREATER SUPERFICIAL PETROSAL NERVE), and associated brain areas and their functions (see TASTE CORTEX; SOLITARY NUCLEUS; THALAMIC TASTE AREA). The responses of this system can be modified to an extent by an organism's physiology, its immediate needs, and its experiences. Also called **taste system**.

**gustatory transduction** see TASTE TRANSDUCTION.

**gustometer** *n.* an instrument used to deliver a predetermined volume and concentration of a taste (gustatory) stimulus to the tongue over a specified period of time.

**gut hormone** any hormone that is released by the stomach or intestines, sometimes in response to food.

**Guttman scale** a type of attitude measure that consists of multiple verbal statements ordered to reflect increasing levels of positive evaluation. Endorsement of a particular statement implies endorsement of all statements less extreme than that statement. For example, Item 1 could state "I believe that education is valuable," Item 2 could state "I believe that people who are educated are more productive," and Item 3 could state "I believe that I would be more productive if I had more education." A person who agreed with the third statement thus would also agree with the first and second statements. Although generally used to measure attitudes, Guttman scales can also be used to assess other properties of a target of judgment. Also called **cumulative scale**; **scalogram**. [first described in 1944 by Louis **Guttman** (1916–1987), U.S. experimental psychologist]

**gutturophonia** *n.* a form of DYSPHONIA characterized by a throaty or low-pitched voice.

**gymnemic acid** an extract of the Indian plant *Gymnema sylvestris*, noted for its capacity to block sweet taste. It is one of a family of triterpene saponins (plant glucosides producing a soapy lather) that also includes ziziphin, gummamarin, and hodulcin.

**gynandromorph** *n.* an organism, especially an insect, with both male and female physical characteristics. —**gynandromorphism** *n.*

**gynecology** *n.* the branch of medicine concerned with diseases and disorders of the reproductive organs of women. —**gynecological** *adj.* —**gynecologist** *n.*

**gynecomastia** *n.* abnormal development of breast tissue in males. In young men, the condition usually occurs on both sides, whereas in men over age 50, gynecomastia tends to be unilateral. It may occur as a result of a hormonal imbalance related to a tumor or as a side effect of therapy with ANTIANDROGENS or with DOPAMINE-RECEPTOR ANTAGONISTS, which include many antipsychotic drugs.

Dopamine inhibits the release from the anterior pituitary of the hormone PROLACTIN; therefore, inhibition of dopaminergic activity may result in excess secretion of prolactin, leading to engorgement of breast tissue and possibly expression of breast milk (see GALACTORRHEA). Gynecomastia may also be observed (though rarely) with administration of SSRIs.

**gynemimesis** *n.* a boy or man displaying or taking on the bodily appearance, dress, or behavior typical of a female, including passing as a woman. Also called **gynecomimesis**.

**gynemimetophilia** *n.* sexual interest in and arousal by

men who are cross-dressing and playing the role of women.

**gynectresia** *n.* the condition of having imperforate female genitalia (i.e., the vagina lacks an opening).

**gyno-** (**gyn-**) *combining form* women or female.

**gyrus** *n.* (*pl.* **gyri**) a ridged or raised portion of the cerebral cortex, bounded on either side by a SULCUS.

**gyrus cinguli** see CINGULATE CORTEX.

**gyrus fasciolaris** see FASCIOLUS GYRUS.

**GZTS** abbreviation for GUILFORD–ZIMMERMAN TEMPERAMENT SURVEY.

# Hh

**$H_0$**  symbol for NULL HYPOTHESIS.

**$H_1$**  symbol for ALTERNATIVE HYPOTHESIS.

**$H_a$**  symbol for ALTERNATIVE HYPOTHESIS.

**Haab's pupillary reflex** the normal contraction of both pupils when the eyes focus on a bright object in a darkened room. [Otto **Haab** (1850–1931), Swiss ophthalmologist]

**habeas corpus** a writ requiring a court to determine whether there is sufficient cause to hold someone in a correctional or other facility (Latin, literally: “you may have the body”). In the context of forensic psychology, it is typically used to determine whether confinement to a mental institution has been carried out with DUE PROCESS.

**habilitation** *n.* the process of enhancing the independence, well-being, and level of functioning of an individual with a disability or disorder by providing appropriate resources, such as treatment or training, to enable that person to develop skills and abilities he or she had not had the opportunity to acquire previously. The term is often used specifically to refer to the functional training of children with congenital disabilities, such as congenital visual impairment. Compare REHABILITATION.

**habit** *n.* a well-learned behavior or automatic sequence of behaviors that is relatively situation specific and over time has become motorically reflexive and independent of motivational or cognitive influence—that is, it is performed with little or no conscious intent. For example, the act of hair twirling may eventually occur without the individual's conscious awareness. —**habitual** *adj.*

**habitability** *n.* the degree to which a specific environment meets the functional and aesthetic requirements of its occupants. See also ENVIRONMENTAL DESIGN.

**habitat** *n.* the external environment in which an organism lives. Nonhuman animals are assumed to select habitats that provide optimal features for survival and reproduction. An organism's habitat includes other animal and plant species that are important to it, as well as the physical aspects of the environment, including soil, substrate, and climate.

**habit disorder** any repetitive maladaptive behavior that may interfere with social or educational functioning or other important activities.

**habit family hierarchy** the concept that several different routes to the same goal—or more generally, responses to the same stimulus—are available, each having a particular strength that determines its arrangement in a preferential order and hence its potential for expression. Also called **habit hierarchy**. [developed by Clark L. HULL]

**habit formation** the process by which, through repetition or conditioning, animals or humans acquire a behavior that becomes regular and increasingly easy to perform.

**habit-forming drug** a drug with ABUSE POTENTIAL.

**habit hierarchy** **1.** see HABIT FAMILY HIERARCHY. **2.** the

arrangement of simple habits into progressively more complex habit patterns.

**habit regression** the act of returning to a previously discontinued habit or automatic pattern of behavior, often as a result of emotional distress.

**habit reversal** a technique of BEHAVIOR THERAPY in which the client must learn a new, correct response to a stimulus and stop responding to a previously learned cue. Habit reversal is used, for example, to control such unwanted behavior as overeating, smoking, hair pulling (trichotillomania), and nail biting.

**habit strength** a hypothetical construct said to reflect learning strength, which varies with the number of reinforcements, the amount of reinforcement, the interval between stimulus and response, and the interval between response and reinforcement. [proposed in 1943 by Clark L. HULL]

**habit tic** a brief, recurrent movement that is psychogenic in nature, as contrasted with TICS of neurological origin. Examples are grimacing, blinking, and repeatedly turning the head to one side.

**habituation** *n.* **1.** in general, the process of growing accustomed to a situation or stimulus. **2.** the diminished effectiveness of a stimulus in eliciting a response, following repeated exposure to the stimulus. Compare DISHABITUATION. **3.** the process of becoming psychologically dependent on the use of a particular drug, such as cocaine, but without the increasing tolerance and physiological dependence that are characteristic of addiction; the preferred term is PSYCHOLOGICAL DEPENDENCE. **4.** the elimination, through repetition and practice, of extraneous responses that interfere with learning a skill.

**habitus** *n.* **1.** in social psychology, a person's view of the world and of his or her place in it, formed through socialization during childhood and reinforced throughout life. **2.** the general appearance of the body. **3.** a susceptibility to certain types of physical disorders associated with particular SOMATOTYPES.

**haemo-** *combining form* see HEMO-.

**hair cell** **1.** any of the sensory receptors for hearing, located in the ORGAN OF CORTI within the cochlea of the inner ear. They respond to vibrations of the BASILAR MEMBRANE via movement of the fine hairlike structures (**stereocilia**) that protrude from them. In humans, there are 12,000 **outer hair cells** and 3,500 **inner hair cells**. Almost all auditory nerve fibers communicate only with inner hair cells. The outer hair cells appear to be capable of movement and may provide amplification of the vibration that stimulates the inner hair cells. **2.** any of the sensory receptors for balance, similar in structure to the cochlear hair cells. They are located in the inner ear within the ampullae of the SEMICIRCULAR CANALS (forming part of the CRISTA) and within the SACCULE and UTRICLE (forming part of the MACULA).

**hair esthesiometer** a device used to measure sensitivity to pressure. See also ESTHESIOMETRY.

**hair follicle** the protective casing of the root of a hair. Inside the follicle, the end of the hair shaft is surrounded by a FLOWER-SPRAY ENDING, one of the basic types of somatosensory receptors. As part of defense behavior, a follicular nerve ending stimulates muscle fibers that contract and cause PILOERECTION.

**hair-pulling disorder** see TRICHOTILLOMANIA.

**halazepam** *n.* a BENZODIAZEPINE used for the management of anxiety disorders and the short-term treatment of insomnia. As with most of the long-acting benzodiazepines, halazepam is metabolized to the active intermediate compound desmethyldiazepam (nordiazepam), which has a very long HALF-LIFE (and therefore duration of action). This allows halazepam to be taken only once a day but also is associated with its accumulation in older adults and other people who have a reduced ability to metabolize the long-acting benzodiazepines. U.S. trade name: **Paxipam**.

**Halcion** *n.* a trade name for TRIAZOLAM.

**Haldol** *n.* a trade name for HALOPERIDOL.

**half-life** (symbol:  $t_{1/2}$ ) *n.* in pharmacokinetics, the time necessary for the concentration in the blood of an administered drug to fall by 50%. Half-life is a function of the rate of CLEARANCE of a drug and its VOLUME OF DISTRIBUTION in various body systems; it is expressed by the equation  $t_{1/2} = (0.7 \times \text{volume of distribution}) / \text{clearance}$ . Clinically, half-life varies among individuals as a result of age, disease states, or concurrent administration of other drugs. Half-life is useful in predicting the duration of effect of a drug and the time required for a drug to reach a state of equilibrium (steady state) in the body—that is, when the amount of drug administered is equal to that excreted. Generally, steady state is predicted to be achieved after 4 to 5 half-lives of a drug; for example, if a drug has a measured half-life of 8 hours (and its dosing schedule remains the same), steady state would be anticipated within 32 to 40 hours.

**half-show** *n.* a form of child psychotherapy in which a psychological problem is presented as a puppet-show drama, which is stopped at a crucial moment. The child is then asked to suggest how the story should end.

**halfway house** a transitional living arrangement for people, such as individuals recovering from alcohol or substance abuse, who have completed treatment at a hospital or rehabilitation center but still require support to assist them in restructuring their lives.

**Hallermann–Streiff syndrome** a very rare congenital disorder marked by craniofacial anomalies, including a small, beaked nose, small eyes, and low-set ears. In many affected individuals, the skull sutures are slow to close and may remain open into puberty. Short stature and eye problems leading to blindness are common among those with Hallermann–Streiff syndrome. Intellectual disability is present in about 15% of these individuals. [reported in 1948 by Wilhelm Hallermann (1901–1976), German physician, and in 1950 by Enrico Bernardo Streiff (1908–1988), Swiss ophthalmologist]

**hallucination** *n.* a false sensory perception that has a compelling sense of reality despite the absence of an external stimulus. It may affect any of the senses, but AUDITORY HALLUCINATIONS and VISUAL HALLUCINATIONS are most common. Hallucinations are typically a symptom of a PSYCHOTIC DISORDER, particularly schizophrenia, but also may result from substance use, neurological abnormalities, and other conditions. It is important to distinguish hallucina-

tions from ILLUSIONS, which are misinterpretations of real sensory stimuli.

**hallucinogen** *n.* a substance capable of producing a sensory effect (visual, auditory, olfactory, gustatory, or tactile) in the absence of an actual stimulus. Because they produce alterations in perception, cognition, and mood, hallucinogens are also called **psychedelic drugs** or **psychedelics** (from the Greek, meaning “mind-manifesting”). They are a group of heterogeneous compounds, many of which are naturally occurring; others are produced synthetically. Many hallucinogens are structurally similar to one of several neurotransmitters, which may be used as a mechanism of categorization. For example, serotonin-like hallucinogens include the indolealkylamines, exemplified by lysergic acid diethylamide (see LSD), PSILOCIN, DMT, DET, and BUFOTENIN; catecholamine-like hallucinogens include the PHENYLETHYLAMINES and their derivatives, such as Mescaline, DOM, MDA, and MDMA. Both classes in general produce visual hallucinations via activity on subtypes of SEROTONIN RECEPTORS. Other hallucinogens include PCP and various natural substances, including AYAHUASCA. —**hallucinogenic** *adj.*

**hallucinogen abuse** in DSM–IV–TR, a pattern of drug use marked by recurrent significant adverse consequences related to the repeated ingestion of hallucinogens. This diagnosis is preempted by the diagnosis of HALLUCINOGEN DEPENDENCE: If the criteria for hallucinogen abuse and hallucinogen dependence are both met, only the latter diagnosis is given. In DSM–5, however, both have been combined into single “use disorders” (e.g., phencyclidine use disorder) and are no longer considered distinct diagnoses. See also SUBSTANCE ABUSE.

**hallucinogen-affective disorder** see HALLUCINOGEN-INDUCED MOOD DISORDER.

**hallucinogen dependence** in DSM–IV–TR, a pattern of repeated or compulsive use of hallucinogens despite significant behavioral, physiological, and psychosocial problems associated with their use, as well as tolerance and characteristic withdrawal symptoms if use is suspended. In DSM–5, hallucinogen dependence has been combined with HALLUCINOGEN ABUSE into single “use disorders” (e.g., phencyclidine use disorder); they are no longer considered distinct diagnoses. See also SUBSTANCE DEPENDENCE.

**hallucinogen hallucinosis** see HALLUCINOGEN-INDUCED PSYCHOTIC DISORDER.

**hallucinogen-induced mood disorder** a prominent and persistent disturbance of mood experienced during and after HALLUCINOGEN INTOXICATION. It may be characterized by depression or anxiety, self-reproach, feelings of guilt, and tension. Also called **hallucinogen-affective disorder**.

**hallucinogen-induced psychotic disorder** prominent hallucinations, delusions, or both due to HALLUCINOGEN INTOXICATION that are not recognized by the individual as having been induced by hallucinogens. The hallucinations and delusions exceed those usually associated with such intoxication, being sufficiently severe to warrant clinical attention. Also called **hallucinogen hallucinosis**.

**hallucinogen intoxication** in DSM–IV–TR and DSM–5, a reversible syndrome that is due to the recent ingestion of a specific hallucinogen and is marked by euphoria, subjective intensification of perceptions, hallucinations, SYNTHESIAS, pupillary dilation, increased heart rate,

sweating, palpitations, blurring of vision, tremors, and incoordination. With higher levels of intoxication, clinically significant behavioral or psychological changes can include marked anxiety or depression, DELUSION OF REFERENCE, difficulty focusing attention, fear of losing one's mind, paranoia, and impaired judgment. See also PHENCYCLIDINE INTOXICATION; SUBSTANCE INTOXICATION.

**hallucinosi** *n.* a pathological condition characterized by prominent and persistent hallucinations without alterations of consciousness, particularly when caused by the direct physiological effects of a substance or associated with neurological factors.

**halo effect** a rating bias in which a general evaluation (usually positive) of a person, or an evaluation of a person on a specific dimension, influences judgments of that person on other specific dimensions. For example, a person who is generally liked might be judged as more intelligent, competent, and honest than he or she actually is.

**haloperidol** *n.* a HIGH-POTENCY ANTIPSYCHOTIC of the BUTYRPHENONE class, in use in Europe in the 1950s and in the United States from 1965. Haloperidol and other high-potency antipsychotics were preferred over lower potency PHENOTHIAZINES because of their lack of cardiovascular and ANTICHOLINERGIC EFFECTS; however, they were associated more with EXTRAPYRAMIDAL SYMPTOMS and TARDIVE DYSKINESIA than lower potency agents. The increased safety profile of the second-generation ATYPICAL ANTIPSYCHOTICS has led to a decline in use of haloperidol, although it is still used individually and in conjunction with newer agents. Some argue that few differences exist between the newer agents and haloperidol if the latter is used in much lower doses than has been customary. U.S. trade name: **Haldol**.

**Halstead Category Test** see CATEGORY TEST.

**Halstead-Reitan Impairment Index** see IMPAIRMENT INDEX. [Ward C. **Halstead** (1908–1969) and Ralph M. **Reitan** (1922– ), U.S. psychologists]

**Halstead-Reitan Neuropsychological Battery (HRNB)** a set of tests used to diagnose and localize brain damage by providing a comprehensive assessment of cognitive functioning. The battery includes five core subtests (the CATEGORY TEST, TACTUAL PERFORMANCE TEST, SEASHORE RHYTHM TEST, SPEECH SOUNDS PERCEPTION TEST, and FINGER TAPPING TEST) and five optional subtests (the TRAIL MAKING TEST, REITAN INDIANA APHASIA SCREENING TEST, REITAN-KLÖVE SENSORY PERCEPTUAL EXAMINATION, GRIP STRENGTH TEST, and Lateral Dominance Examination) purportedly measuring elements of language, attention, motor dexterity, sensory-motor integration, abstract thinking, and memory. The MINNESOTA MULTIPHASIC PERSONALITY INVENTORY and either the WECHSLER ADULT INTELLIGENCE SCALE or the WECHSLER INTELLIGENCE SCALE FOR CHILDREN are often administered as well. There is a version of the HRNB for adults, for children ages 5 to 8 years, and for children ages 9 to 14 years. [Ward C. **Halstead** and Ralph M. **Reitan**]

**halving method** see FRACTIONATION.

**Hamilton Rating Scale for Depression (HAM-D; HRSD)** an interview-based, clinician-administered measure of the severity of DYSPHORIA, insomnia, weight loss, and other symptoms in individuals who have been diagnosed with depression. It is the most widely used measure of the effectiveness of antidepressant medication in clinical trials. A 38-item self-report version, the **Hamilton Depres-**

**sion Inventory (HDI)**, was developed in 1995. Also called **Hamilton Depression Scale**. [originally published in 1960 by Max **Hamilton** (1912–1988), British psychiatrist]

**hammer** *n.* see OSSICLES.

**hand-arm vibration syndrome (HAVS)** an occupational disorder caused by excessive exposure to vibrations from the use of handheld equipment. It is a form of RAYNAUD'S DISEASE. Also called **vibration white finger**.

**Hand-Christian-Schüller syndrome** a rare disturbance of lipid metabolism marked by the presence of large phagocytic blood cells and an accumulation of cholesterol plus a triad of symptoms: membranous bone defects, diabetes insipidus, and protrusion of the eyes. Growth and mental development may also be delayed. [Alfred **Hand** (1868–1949), U.S. pediatrician; Henry A. **Christian** (1876–1951), U.S. physician; Arthur **Schüller** (1874–1958), Austrian neurologist]

**hand dominance** see HANDEDNESS.

**Hand Dynamometer Test** see GRIP STRENGTH TEST.

**handedness** *n.* the consistent use of one hand rather than the other in performing certain tasks. The preference usually is related to a DOMINANCE effect of the MOTOR CORTEX on the opposite side of the body. Also called **hand dominance**; **manual dominance**. See CEREBRAL DOMINANCE; LATERALITY; LEFT-HANDEDNESS; RIGHT-HANDEDNESS.

**handicap 1.** *n.* any disadvantage or characteristic that limits or prevents a person from performing various physical, cognitive, or social tasks or from fulfilling particular roles within society. For example, a nonaccessible building entry or exit for a person in a wheelchair would be considered a handicap, as would the person's inability to walk. The term generally is considered pejorative and its use has fallen into disfavor. See also DISABILITY. **2.** *vb.* to place an individual or group of individuals at a disadvantage, or to hinder or impede progress. —**handicapped** *adj.*

**handicap principle** the idea that nonhuman animals use high-cost HONEST SIGNALS to demonstrate their potential as mates. The long, loud, continuous song of songbirds, the tails of peacocks, and the loud roars of howler monkeys are all energetically costly and make the caller conspicuous to predators. However, if these "handicaps" provide accurate information about the condition or quality of the animal, superior individuals will become preferred mates, and the conspicuous and costly traits will be maintained in future generations.

**hand-tool dexterity test** a test of the ability to use hand tools effectively.

**hand-washing compulsion** a persistent and irrational preoccupation with washing the hands, characteristic of OBSESSIVE-COMPULSIVE DISORDER.

**handwriting analysis** see GRAPHOLOGY.

**hanging rootogram** a type of HISTOGRAM in which the horizontal *x*-axis is slightly elevated and the vertical *y*-axis depicts the square root of frequencies using bars that "hang" downward from a curve showing the expected NORMAL DISTRIBUTION. A hanging rootogram allows researchers to see how well their observed distribution (e.g., of debt for a group of middle-class families) fits an expected THEORETICAL DISTRIBUTION. If the observed data differ from the expected pattern, the hanging histogram bars will drop below the elevated horizontal axis, thereby indicating places of poor match between the observed and theoretical

distributions. Also called **suspended rootogram**. See **ROOTOGRAM**.

**hangover** *n.* the physiological effects experienced after cessation of heavy drinking, usually appearing within hours and lasting up to a day. Symptoms include malaise, thirst, headache, dizziness, fatigue, loss of appetite, nausea, and vomiting. A hangover is different from **ALCOHOL WITHDRAWAL**, particularly in the duration of alcohol use required for it to develop. —**hung over** *adj.*

**Hans** *n.* see **CLEVER HANS**; **LITTLE HANS**.

**haphazard sampling** any method of selecting research participants that is neither random nor systematic and hence is likely to be biased. **CONVENIENCE SAMPLING** is an example. Thus, if researchers decided to solicit participants from an Internet advertisement the process would be biased toward individuals who own a computer and who are more likely to respond to computer-based communications. Depending on the prevalence and likelihood of computer use in various facets of the population, the sample could be biased by gender, ethnicity, geographical location, economic status, or age, among other possible variables.

**haplodiploidy** *n.* the state in which individuals of one sex have only one set of chromosomes (i.e., are **HAPLOID**), because they have developed from an unfertilized egg, and individuals of the other sex have two sets of chromosomes (i.e., are **DIPLOID**). Haplodiploidy is common in bees and wasps, in which males are haploid. Their female offspring inherit identical paternal genes and thus share 75% of their genes (siblings of diploid parents share only 50% of their genes). This provides a genetic basis for **EUSOCIALITY**. —**haplodiploid** *adj.*

**haploid** *adj.* describing a nucleus, cell, or organism that possesses only one representative of each chromosome, as in a sperm or egg cell. In most organisms, including humans, fusion of the haploid sex cells following fertilization restores the normal **DIPLOID** condition of body cells, in which the chromosomes occur in pairs. Hence for humans, the **haploid number** is 23 chromosomes, which is half the full complement of 46 chromosomes.

**happiness** *n.* an emotion of joy, gladness, satisfaction, and well-being. —**happy** *adj.*

**happy-puppet syndrome** see **ANGELMAN SYNDROME**.

**haptic** *adj.* relating to the sense of touch and the cutaneous sensory system in general. It typically refers to **ACTIVE TOUCH**, in which the individual intentionally seeks sensory stimulation, moving the limbs to gain information about an object or surface.

**haptic hallucination** see **TACTILE HALLUCINATION**.

**haptic horizontal-vertical illusion** an illusion in touch in which verticals may be judged as different in length from horizontals. The illusion depends upon figural characteristics and is especially strong when one feels inverted T shapes.

**haptic illusion** any mistaken perception arising from voluntary, directed contact with an object (see **ACTIVE TOUCH**). The **HAPTIC MÜLLER-LYER ILLUSION** is an example. Compare **TACTILE ILLUSION**.

**haptic map** a tactile map that can be felt by people with visual impairment. Such maps may be two-dimensional, comprising raised lines, or they can use three-dimensional landmarks.

**haptic Müller-Lyer illusion** an illusion in touch in which tangible lines that end in a pattern with arrowheads that face toward each other are judged as longer than lines that end with arrowheads that face away from each other. See also **HAPTIC ILLUSION**. [Franz **Müller-Lyer** (1857–1916), German psychiatrist and sociologist]

**haptic perception** perception by **ACTIVE TOUCH** and intentional exploration of objects and surfaces. See also **TOUCH SENSE**.

**haptic picture** a picture produced with raised lines so that it can be felt by people with visual impairment.

**haptics** *n.* the study of touch, particularly as a means of actively exploring and gaining information about the environment, and the applications of this study in communication systems.

**hard colors** yellows and reds.

**hard data** information that is **QUANTITATIVE** and specific, usually obtained from rigorous **EXPERIMENTAL RESEARCH**, systematic measurement, and **STATISTICAL ANALYSIS**. Hard data are sometimes contrasted with **SOFT DATA**, which may be more **QUALITATIVE** and involve anecdotal evidence that is not obtained systematically.

**hard determinism** the doctrine that human actions and choices are causally determined by forces and influences over which a person exercises no meaningful control. The term can also be applied to nonhuman events, implying that all things must be as they are and could not possibly be otherwise. Compare **SOFT DETERMINISM**. See **DETERMINISM**.

**hard drug** a colloquial name for a psychoactive drug of abuse that produces **PHYSICAL DEPENDENCE** and is associated with high rates of adverse consequences. In contrast, a **soft drug** does not produce physical dependence but may produce **PSYCHOLOGICAL DEPENDENCE**. Whether a drug is perceived as hard or soft may depend on the social and cultural connotations surrounding its use and on its legal restrictions, if any, in particular locations. For example, alcohol fits the definition of a hard drug but remains legal and is considered by many not to be a drug at all. See **SUBSTANCE ABUSE**; **SUBSTANCE DEPENDENCE**.

**hardiness** *n.* an ability to adapt easily to unexpected changes combined with a sense of purpose in daily life and of personal control over what occurs in one's life. Hardiness dampens the negative effects of stress and can be a **PROTECTIVE FACTOR** against illness. See also **RESILIENCE**. —**hardy** *adj.*

**hard palate** the bony anterior portion of the roof of the mouth, covered above and below, respectively, by the mucous membranes of the nasal and oral cavities. Also called **palatum durum**. Compare **SOFT PALATE**.

**hard problem** in philosophy of mind, the difficulty of explaining the emergence of the qualitative nature (see **QUALIA**) of subjective experience on the basis of the physical nature of the brain. [terminology proposed by Australian philosopher David Chalmers (1966– )]

**hard psychology** a colloquial name for **EXPERIMENTAL PSYCHOLOGY** in contradistinction to so-called **SOFT PSYCHOLOGY**, which is seen as having a more subjective, less rigorous approach.

**hard sell** an attempt to sell a product or service by using strong persuasive or compliance techniques, such as setting artificial deadlines or offering special deals to encour-

age potential buyers to commit themselves. A hard sell can be compared to a **soft sell**, in which more unobtrusive methods are used and little pressure is placed on the consumer to make an immediate decision.

**hardware** *n.* the physical equipment in which an information-processing program is implemented, such as the physical components of a computer system or the brain. Compare SOFTWARE.

**hard-wired** *adj.* **1.** referring to electrical or electronic circuits in which the connections among components are permanently established and which are usually designed to perform a specific function. **2.** in neurophysiology, referring to fixed, inflexible NEURAL NETWORKS or NEURAL CIRCUITS.

**Hardy–Rand–Rittler pseudoisochromatic plates (H–R–R plates)** embedded figures composed of small elements that can be distinguished from identical small background elements only on the basis of hue. The figures are used to test for color blindness. Also called **American optical H–R–R plates**. See also ISHIHARA TEST FOR COLOR BLINDNESS. [developed in the 1950s by LeGrand H. **Hardy** (1895–1954), U.S. ophthalmologist; Gertrude **Rand** (1886–1970), U.S. experimental psychologist; and M. Catherine **Rittler** (1905–1987)]

**harem** *n.* in animal behavior, a group of females controlled by or associated with one or two males, as seen in highly polygynous species. See POLYGYNY.

**harmaline** *n.* see AYAHUASCA.

**harm avoidance** see CLONINGER'S PSYCHOBIOLOGICAL MODEL OF PERSONALITY; TEMPERAMENT AND CHARACTER INVENTORY.

**harmine** *n.* a naturally occurring hallucinogen derived from the plants *Peganum harmala*, native to the Middle East, and *Banisteriopsis caapi*, native to the South American tropics. Harmine is a potent MONOAMINE OXIDASE INHIBITOR and is a principal ingredient in AYAHUASCA, a psychoactive beverage.

**harmonic** *n.* a PURE-TONE component whose frequency is an integer multiple of the fundamental FREQUENCY. For example, the third harmonic of 500 Hz is 1500 Hz. An **overtone** is a harmonic, but the numbering is different: 1500 Hz is the second overtone of 500 Hz.

**harmonic mean** a measure of CENTRAL TENDENCY. It is computed for *n* scores by dividing the scores by the sum of their RECIPROCALs; that is, *n* divided by the sum of  $1/x_1 + 1/x_2 + 1/x_n$ . See also GEOMETRIC MEAN; MEAN.

**harmony** *n.* **1.** friendly or cooperative relations among people, such that social interactions are congruous and conflict free. **2.** in a design, work of art, or the like, an arrangement of parts (e.g., lines or musical tones) into a whole pattern that is considered to be balanced and pleasing. —**harmonious** *adj.*

**harm reduction** an approach designed to reduce the adverse effects of risky behaviors (e.g., alcohol use, drug use, indiscriminate sexual activity), rather than to eliminate the behaviors altogether. Programs focused on alcohol use, for example, do not advocate abstinence but attempt instead to teach people to anticipate the hazards of heavy drinking and learn to drink safely.

**HAROLD** acronym for HEMISPHERIC ASYMMETRY REDUCTION IN OLDER ADULTS.

**Harrisburg Seven** seven Vietnam War protesters who were arrested and tried in Harrisburg, Pennsylvania, in 1972 for various antiwar activities. Their trial was one of the earliest occasions of the use of social science methods to help attorneys select jurors (see SCIENTIFIC JURY SELECTION).

**Harris v. Forklift Systems Inc.** a case resulting in a 1993 U.S. Supreme Court ruling that in SEXUAL HARASSMENT cases the victim is not required to show psychological injury as a consequence of the offensive behavior and that a REASONABLE PERSON STANDARD should be used to judge the offensiveness of the conduct. See also HOSTILE WORK ENVIRONMENT.

**Harvey Impostor Phenomenon Scale (HIPS)** see IMPOSTOR PHENOMENON.

**hashish** *n.* the most potent CANNABIS preparation. It contains the highest concentration of delta-9-TETRAHYDROCANNABINOL (THC) because it consists largely of pure resin from one of the species of the *Cannabis* plant from which it is derived.

**hasty generalization** see CONVERSE ACCIDENT.

**hate** *n.* a hostile emotion combining intense feelings of detestation, anger, and often a desire to do harm. Also called **hatred**.

**hate crime** violence motivated by hatred or prejudice toward the group to which the victim of the violence belongs. Examples of hate crimes are killing a person because he or she is (or is thought to be) gay and bombing a place of worship of a religious minority.

**haunted swing illusion** an illusory perception of self-movement that occurs when an individual is seated on a stationary swing and the surrounding environment is moved. See INDUCED MOVEMENT.

**HAVS** abbreviation for HAND–ARM VIBRATION SYNDROME.

**Hawthorne effect** the effect on the behavior of individuals of knowing that they are being observed or are taking part in research. The Hawthorne effect is typically positive and is named after the Western Electric Company's Hawthorne Works plant in Cicero, Illinois, where the phenomenon was first observed during a series of studies on worker productivity conducted from 1924 to 1932. These **Hawthorne Studies** began as an investigation of the effects of ILLUMINATION CONDITIONS, monetary incentives, and rest breaks on productivity, but evolved into a much wider consideration of the role of worker attitudes, supervisory style, and GROUP DYNAMICS. The HUMAN RELATIONS THEORY of management is usually considered to have developed from these studies.

**Hayflick limit** the finite number of times a cell is able to divide before undergoing PROGRAMMED CELL DEATH. Discovered in 1961 by U.S. microbiologist Leonard Hayflick (1928– ), the limit was subsequently proposed to occur when TELOMERES become too short for further division.

**Hay method** a JOB EVALUATION technique used in determining the pay structure in an organization. Jobs are evaluated on the extent to which they require know-how, problem solving, and accountability, then compensated accordingly. The method combines elements of the FACTOR-COMPARISON METHOD and the POINT METHOD. [Edward N. **Hay** (1891–1958), U.S. management expert]

**hazard** *n.* a potential source of danger, injury, illness, or equipment damage or malfunction. —**hazardous** *adj.*



**hazard analysis** an analysis used to identify the level of risk associated with some process or new product (e.g., a new food item). It involves identifying potential hazards, determining their probability, and evaluating the likely severity of their effects. Also called **hazard modeling**.

**hazard-assessment matrix** see RISK-ASSESSMENT MATRIX.

**hazard control** the process of identifying, evaluating, and eliminating hazards from an environment, system, or product (ENGINEERING CONTROLS) or of protecting users and workers from exposure to hazards where these cannot be completely eliminated (ADMINISTRATIVE CONTROLS). See also SAFETY ENGINEERING.

**hazard-control protocol** the order of priority that applies in the process of eliminating or protecting against hazards. The protocol is design out, guard against, warn, and train. See ADMINISTRATIVE CONTROLS; ENGINEERING CONTROLS.

**hazard function** a mathematical formula that describes the relationship between the risk of a particular event occurring and time. It is one element of SURVIVAL ANALYSIS.

**hazard rate** in HAZARD ANALYSIS, a value used to indicate the immediate potential or risk of an event's occurrence at a particular instance in time. It often is used in health studies and will vary depending on the time point of interest. For example, a hazard rate may be used to determine whether an individual who is abstinent from alcohol or drugs at 6 months is likely to relapse in the near future.

**hazing** *n.* the initiation of new members into a group by subjecting them to rituals that involve mental or physical discomfort, harassment, embarrassment, ridicule, or humiliation. Hazing is thought to promote group-relevant skills and attitudes, reinforce the status hierarchy, and create social dependency.

**Hb** abbreviation for HEMOGLOBIN.

**HCBS** abbreviation for HOME AND COMMUNITY-BASED SERVICES.

**HCFA** abbreviation for Health Care Financing Administration. See CENTERS FOR MEDICARE AND MEDICAID SERVICES.

**HD** abbreviation for HUNTINGTON'S DISEASE.

**HDI** abbreviation for Hamilton Depression Inventory. See HAMILTON RATING SCALE FOR DEPRESSION.

**headache** *n.* a pain in the head from any cause. Examples include CLUSTER HEADACHES, MIGRAINE HEADACHES, and TENSION HEADACHES.

**head banging** the act or habit of repeatedly striking the head on a crib, wall, or other object, observed in infants and young children as a stereotyped behavior (see STEREOTYPY) or during a temper tantrum. See also STEREOTYPIC MOVEMENT DISORDER.

**head-direction cell** a type of neuron that discharges as a function of the orientation of an animal's head within the environment. Head-direction cells are located in several regions of the brain, including the THALAMUS and MAMMILLARY BODIES of the limbic system and the ENTORHINAL CORTEX and SUBICULUM of the medial temporal lobe memory system. Each has a preferred direction of maximal firing, and their combined activity is influenced by visual and other sensory inputs, motor feedback signals, and internally generated cues from the VESTIBULAR SYSTEM and other INTEROCEPTIVE and PROPRIOCEPTIVE sources. It has

been suggested that the information head-direction cells provide is used by the animal to map its external space and that this representation of the environment then guides the animal's navigational and other spatial behavior. [initially discovered in rats in 1984 by neuroscientist James B. Ranck Jr.]

**head injury** any physical injury to the scalp or skull or any brain damage that may result. Head injuries are usually caused by blunt force, such as a blow to the head, but may result from significant acceleration or deceleration in the absence of physical contact (see ACCELERATION-DECELERATION INJURY). They are commonly classified as either closed, in which the head strikes an object (e.g., a CONCUSSION), or open (penetrating), in which a foreign object passes through the skull and enters the brain (e.g., a gunshot wound). A variety of transient or permanent neuropsychological consequences may result, including changes in emotion, behavior, and personality; disturbances of EXECUTIVE FUNCTIONS; memory and attention difficulties; and sensory and motor deficits. Also called **head trauma**.

**head nystagmus** the slow movement of the head in the opposite direction after an individual is rotated, followed by a rapid movement of the head in the direction of rotation.

**head-of-the-table effect** the propensity for group members to associate the leadership role and its responsibilities with the seat located at the head of the table. As a result, individuals who occupy such positions tend to emerge as leaders in groups without designated leaders. See also STEINZOR EFFECT.

**head-related transfer function (HRTF)** a function that describes the spectral characteristics of sound measured at the TYMPANIC MEMBRANE when the source of the sound is in three-dimensional space. It is used to simulate externally presented sounds when the sounds are introduced through headphones. The HRTF is a function of frequency, azimuth, and elevation and is determined primarily by the acoustical properties of the external ear, the head, and the torso. HRTFs can differ substantially across individuals but, because measurement of an individual HRTF is expensive, an averaged HRTF is often used.

**head retraction** reflex withdrawal of the head when receptors in the nasal cavities are sharply irritated.

**head rolling** repeated movements of the head from side to side as manifested by some children before going to sleep. The condition has been attributed to inhibition of movement in the crib, lack of stimulating play, and possibly fetal passivity during intrauterine life. Also called **jactatio capitis nocturnis**.

**headshrinking** *n.* the shrinking of severed heads, usually human, through the application of heat or herbal liquids, as practiced among various indigenous societies, mainly in southeast Asia and South America. The heads are used for various ritual purposes, including healing rituals. The slang SHRINK (short for **headshrinker**), meaning a psychiatrist or psychologist, is probably derived from this practice.

**head-slaved** *adj.* describing a VIRTUAL REALITY environment in which head movements by the user produce corresponding changes in the virtual scene. See also PERCEPTUAL USER INTERFACE.

**Head Start** a U.S. government-funded program designed to enhance early childhood education and foster school readiness, with special emphasis on high-risk, inner-city,

and minority children up to 5 years of age and their families. It was initially designed in 1965 by developmental psychologist Edward Zigler, with the intention of breaking the cycle of poverty by providing preschool children of low-income families with a comprehensive program to meet their emotional, social, health, nutritional, and psychological needs in an 8-week summer program. In 1977, the program became bilingual, and by 1998, it had expanded to full-day, full-year services. Head Start has served more than 30 million children since its inception and now includes a variety of services and program options, including Early Head Start, a home visit- and center-based program for children up to age 3 and their families. Head Start serves more than a million children and their families each year in urban and rural areas in all 50 states, the District of Columbia, Puerto Rico, and the U.S. territories. Also called **Project Head Start**. See also **PROJECT FOLLOW THROUGH**.

**headstick** *n.* a type of **PHYSICAL EXTENSION DEVICE** used by individuals with disabilities who have adequate head function. The stick is mounted on a headpiece and can be used to press against, grasp, pull, or point to an object.

**head trauma** see **HEAD INJURY**.

**head-up display (HUD)** a type of machine display in which critical information is presented within the forward view of the operator, as, for example, on the windshield of a vehicle. Head-up displays are used to reduce the need for the operator to look away from the forward field. See also **LOOK ANGLE**.

**head voice** the upper reaches, or higher range, of the speaking or singing voice, in which tone resonates primarily in the mouth, nasal cavity, and bones of the skull. An excited or anxious speaking tone is generally produced in a head voice. Compare **CHEST VOICE**.

**healing group** broadly, any of a variety of groups formed for the purpose of improving or promoting the mental and emotional health and well-being or interpersonal relationships of the members, as in **GROUP THERAPY**, **SELF-HELP GROUPS**, **ENCOUNTER GROUPS**, and **CONSCIOUSNESS-RAISING** groups.

**health** *n.* the condition of one's mind, body, and spirit, the ideal being freedom from illness, injury, pain, and distress.

**health activities questionnaire** any questionnaire designed to measure an individual's current repertoire of health-related behaviors. In health care there is an increased emphasis on prevention, and many inventories exist to measure an individual's compliance with physical activity, dietary control, preventive inoculations, and screening for potential health problems, such as mammography and prostate or colon cancer testing.

**health anxiety** excessive or inappropriate anxiety about one's health, based on misinterpretation of symptoms (e.g., pain, gastrointestinal distress) as indicative of serious illness. Health anxiety is often associated with **HYPOCHONDRIASIS**.

**health-belief model** a model that identifies the relationships of the following issues to the likelihood of taking preventive health action: (a) individual perceptions about susceptibility to and seriousness of a disease, (b) sociodemographic variables, (c) environmental cues, and (d) perceptions of the benefits and costs. See also **EXERCISE-BEHAVIOR MODEL**.

**health care** services and delivery related to the health and well-being of individuals and communities, including preventive, diagnostic, therapeutic, rehabilitative, maintenance, monitoring, and counseling services. In its broadest sense, health care relates to both physical and mental health and is provided by medical and mental health professionals. See also **MENTAL HEALTH CARE**; **MENTAL HEALTH SERVICES**.

**Health Care Financing Administration (HCFA)** see **CENTERS FOR MEDICARE AND MEDICAID SERVICES**.

**healthcare information system (HIS)** see **INFORMATION SYSTEMS**.

**health care proxy** see **ADVANCE DIRECTIVE**.

**health care psychology** see **HEALTH PSYCHOLOGY**.

**health care reform movement** the social and political efforts to improve health and mental health care access, advance quality of care, and control health and mental health care costs.

**health education** **1.** instruction in the care and hygiene of the human body, with emphasis on illness prevention. **2.** any type of education regarding physical, mental, and emotional health. Conducted in school, institutional, and community settings, this education may cover stress management, smoking cessation, nutrition and fitness, reproductive health, self-esteem, relationship issues, health risks, personal safety (e.g., self-defense and rape prevention), and minority health issues.

**health home** an evolving concept, originating in 1967 with the idea of the American Academy of Pediatrics (AAP) of archiving each child's medical records in a central ("home") location, intended to provide patients of all ages with access to continuous, comprehensive, family-centered, coordinated, compassionate, and culturally effective care. The AAP together with the American Academy of Family Physicians, American College of Physicians, and American Osteopathic Association jointly endorsed the following principles of this medical approach: that (a) each patient have a personal physician; (b) the personal physician direct a team of practitioners, who collectively are responsible for providing the patient's ongoing medical and mental health care (i.e., acute, chronic, and preventative services); (c) the personal physician take a whole-person approach to the patient's care, either personally treating the patient or arranging for care from other qualified professionals; and (d) the patient's physical and mental health care be coordinated or integrated across the health care system and the patient's community, such that care is received where and when the patient wants it and in an appropriate manner (e.g., in the patient's preferred language, in a culturally relevant way). Ideally, benefits of this approach are higher quality care, improved safety, enhanced access to care (e.g., through expanded hours, open scheduling, and new methods of communication between the patient and the medical and mental health teams), reduced costs in service delivery, and better reimbursement for services provided. Also called **medical home**; **patient-centered medical home**.

**health insurance** a contractual relationship in which an insurance company undertakes to reimburse the insured for health care expenses in exchange for a premium. Such payment protections might include, for example, medical expense, outpatient mental health, accident, dental, disability income, and accidental death and dismemberment insurances.

**health locus of control** the perceived source of control over health, either personal behaviors or external forces. See also LOCUS OF CONTROL.

**health maintenance organization** see HMO.

**health plan** an organized program that provides a defined set of health care benefits. Health plans may be HMOs, PPOs, insured plans, self-insured plans, or other plans that cover health care services.

**Health Plan Employer Data and Information Set (HEDIS)** a set of annual performance measures for health plans originally developed for the NATIONAL COMMITTEE FOR QUALITY ASSURANCE (NCQA) in 1991 and designed to standardize the way health plans report data to employers. HEDIS consists of 76 measures across five major areas of health plan performance: quality, access and patient satisfaction, membership and utilization, finance, and descriptive information on health plan management.

**health professional** an individual who has received advanced training or education in a health-related field, such as direct patient care, administration, or ancillary services.

**health promotion** education, wellness programs, public policies, fiscal measures, legislation, or other coordinated actions that aim to give people more control over their physical and mental health, with the goal of improving their overall health and well-being.

**health psychology** the subfield of psychology that focuses on (a) the examination of the relationships between behavioral, cognitive, psychophysiological, and social and environmental factors and the establishment, maintenance, and detriment of health; (b) the integration of psychological and biological research findings in the design of empirically based interventions for the prevention and treatment of illness; and (c) the evaluation of physical and psychological status before, during, and after medical and psychological treatment. Also called **health care psychology**.

**health risk appraisal** **1.** information collected to assess an individual's risk for various medical conditions. It may be limited to information from a HEALTH ACTIVITIES QUESTIONNAIRE or may include measurements such as cholesterol levels and triglycerides as well as other physical data. **2.** the perception by individuals of the extent to which they believe that they are susceptible to a health threat. See also PERCEIVED SUSCEPTIBILITY; RISK PERCEPTION.

**health screening** testing and examinations performed on a person who is at risk of a disease or disorder but who may not yet show symptoms.

**health visitor** a health professional, usually associated with a VISITING NURSE association, who visits families where health supervision is needed, for example, to ensure that children are not abused or neglected.

**hearing** *n.* the ability of an organism to sense sound and to process and interpret the sensations to gain information about the source and nature of the sound. In humans, hearing refers to the perception of sound. Also called **audition**.

**hearing aid** an electronic device that amplifies sounds for people with hearing loss. The basic parts of a hearing aid include a microphone to collect sounds, a replenishable battery power supply, an amplifier to increase the volume

of sounds, and a receiver to transmit the amplified sounds to the ear. Hearing aids are available in four different styles (behind the ear, in the ear, in the canal, and completely in the canal) and four different types: (a) conventional, which is the most basic and amplifies all sounds; (b) programmable, which adjusts the level of amplification of sounds according to a customized listening program; (c) digital, which automatically adjusts amplification and volume, is free from distortion, and provides enhanced sound clarity and improved selective listening in noisy environments; and (d) disposable, which is comparable to a conventional hearing aid but must be replaced entirely once the battery wears out. See also ASSISTIVE LISTENING DEVICE; COCHLEAR IMPLANT.

**hearing disorder** any disease, injury, or congenital condition resulting in HEARING LOSS or DEAFNESS.

**hearing level** see AUDIOGRAM.

**hearing loss** the inability to hear a normal range of tone frequencies, a normally perceived level of sound intensity, or both.

**hearing mute** an obsolescent and pejorative name for an individual who is unable or unwilling to speak but is able to hear.

**hearing protection** a device or method used to control noise exposure by reducing the intensity of noise reaching the ear. Techniques range from simple barrier methods (e.g., earplugs) to ACTIVE NOISE PROTECTION.

**hearing theories** theories related to the sensation and perception of sound. Until the 1960s, such theories related almost exclusively to sound processing in the inner ear; they include PLACE THEORY, FREQUENCY THEORY, VOLLEY THEORY, and **traveling wave theory**. Contemporary theories and models relate to various aspects of hearing, including pitch perception, intensity coding, and BINAURAL hearing.

**heart attack** sudden, severe chest pain that occurs when one of the coronary arteries becomes blocked. The condition may result in a myocardial infarction (i.e., death of a section of heart muscle), depending on the extent of damage to the surrounding muscle.

**heart block** see ARRHYTHMIA.

**heart rate reactivity** changes in heart rate associated with particular emotional states. It is usually held that heart rate increases in states of fear, anger, and scorn and decreases in states of attentiveness, positive emotional reaction, and interest. However, the actual relation between heart rate and emotion is complex and largely mediated by the energy demands of the bodily musculature of the organism in an emotional state. Thus, a frightened animal that reacts with tonic immobility (death feigning) and limpness will show a reduction in heart rate in its reaction to a threat, whereas an animal that is immobile but poised for flight typically shows acceleration of heart rate. States of laughter, although pleasurable, are typically associated with an accelerated heart rate owing to the involvement of large muscle groups in the act of laughing.

**heat** *n.* **1.** a thermal sensation produced by a stimulus that is above body temperature. **2.** see ESTRUS.

**heat dolorimeter** a device for the measurement of heat-induced pain.

**heat effects** changes in mental or physical conditions due to perceived or actual ambient temperatures above the

normal comfort range. Perceived heat may be affected by humidity or individual cognitive factors; high humidity usually makes excessive heat less tolerable. The main physiological heat effects are HEAT-INDUCED ASTHENIA, HEAT-STROKE, HEAT EXHAUSTION, and severe circulatory disorders (e.g., heart attacks) caused by excessive demands on the cardiovascular system to circulate blood near external surfaces for a cooling effect. Because of variable perceived heat effects, studies of psychological effects are less conclusive, although performance appears to improve with increasing ambient temperatures up to a level of around 32 °C (90 °F), after which arousal and performance decline. High temperatures can have adverse effects on feelings and emotions and can influence aggression, although no consensus exists in the scientific literature on the exact degree of this influence. Some researchers believe that aggression increases with temperature in a linear manner, whereas others hold that beyond a certain temperature, the desire for escape or relief from the heat supersedes the tendency toward aggression. See ACCLIMATIZATION; OVERHEATING.

**heat exhaustion** a condition resulting from exposure to excessive heat. Dehydration and salt depletion in the body cause such symptoms as headaches, weakness, dizziness, and blurred vision. Heat exhaustion typically is temporary and not life threatening because it does not involve elevation of body temperature, as occurs in HEATSTROKE.

**heat-induced asthenia** a condition associated with prolonged exposure to heat and characterized by general physical and mental impairment, fatigue, lethargy, irritability, insomnia, headache, and possible loss of appetite.

**heat stress** any stress effect on an organism that results from exposure to excessive ambient temperatures, particularly HEAT-INDUCED ASTHENIA, HEAT EXHAUSTION, and HEATSTROKE.

**heatstroke** *n.* a serious condition caused by a breakdown of the body's temperature-regulation ability following exposure to excessive heat. The body is no longer able to cool itself by sweating, the skin feels hot and dry, and the person may experience convulsions or seizures and potentially lose consciousness. The elevated body temperature may cause brain damage or death. Emergency treatment involving cooling the patient must be started immediately.

**Hebbian synapse** a junction between neurons that is strengthened when it successfully fires the POSTSYNAPTIC cell. See DUAL TRACE HYPOTHESIS. [Donald O. HEBB]

**hebephrenia** *n.* see DISORGANIZED SCHIZOPHRENIA.

**hebetude** *n.* a state of severe emotional dullness, lethargy, and lack of interest.

**Hecht's theory of vision** the theory that incremental discrimination of light intensity results from incremental changes in the photochemical materials, such as RHODOPSIN, present in the photoreceptors. [proposed in 1934 by Selig Hecht (1892–1947), Polish-born U.S. biophysicist]

**hedge** *n.* a statement in which the speaker qualifies its apparent meaning or uses various linguistic devices to make it evasive or noncommittal.

**Hedges's *g*** an EFFECT SIZE measure that represents the standardized difference between means. Hedges's *g* differs from the more widely used COHEN'S *D* in that, whereas both use a pooled STANDARD DEVIATION in the denominator, the former uses  $n - 1$  and the latter uses  $n$  when calculating the standard deviations. Thus, Hedges's *g* tends to be con-

sidered as having less bias than Cohen's *d*. See also GLASS'S *D*. [Larry V. Hedges, U.S. statistician]

**HEDIS** acronym for HEALTH PLAN EMPLOYER DATA AND INFORMATION SET.

**hedonic contingency hypothesis** a theory of affect and information processing postulating that people consider the pleasant or unpleasant implications when determining whether to elaborate information. When people are in positive mood states, they tend to be highly attentive to the impact information will have on their mood. If the information is seen as uplifting, they will engage in extensive ELABORATION to maintain their positive mood, but if it is seen as unpleasant, they will engage in little elaboration. When people are in negative mood states, they tend to elaborate information with little attention to its hedonic consequences because such information is unlikely to make their mood more negative and might make it more positive. [originally proposed by U.S. social psychologists Duane T. Wegener (1966– ) and Richard E. Petty (1951– )]

**hedonic contrast** the concept that preference for a "good" stimulus is enhanced if it is preceded or accompanied by a less pleasing stimulus. Hedonic contrast is only found when the two stimuli are extremely similar (e.g., shades of the same hue).

**hedonic level** the degree of pleasantness or unpleasantness aroused by an interaction or a thought. See HEDONIC THEORY.

**hedonic psychology** a psychological perspective that focuses on the spectrum of experiences ranging from pleasure to pain and includes biological, social, and phenomenological aspects and their relationship to motivation and action. See HEDONISM.

**hedonic relevance** the extent to which a situation or activity has bearing on the attainment or maintenance of a positive mood. According to the HEDONIC CONTINGENCY HYPOTHESIS, happy people consider the hedonic relevance of an activity they might carry out before actually engaging in that behavior, because they want to maintain their good mood.

**hedonics** *n.* the branch of psychology concerned with the study of pleasant and unpleasant sensations and thoughts, especially in terms of their role in human motivation.

**hedonic theory** the view that a fundamental motivational principle in human beings and nonhuman animals is the level of pleasantness or unpleasantness aroused by an interaction or thought. See also HEDONISM. [proposed by Paul Thomas YOUNG]

**hedonic time-order error** a preference for one of two otherwise equally preferred stimuli that arises because of the time interval that separates their presentation. The first stimulus is preferred when the interval is brief, and the second stimulus is preferred when the interval is lengthier.

**hedonic tone** a property of a sensory or other experience relating to its pleasantness or unpleasantness.

**hedonic treadmill** a metaphor for a hypothesis proposing that people's happiness tends to return to a preexisting baseline level after positive or negative LIFE EVENTS have occurred. According to this concept, positive and negative events may produce short-term shifts in mood, but these shifts tend to erode in a relatively brief period of time. This process of adaptation is thought to be responsible for the

persistence of mood states over time, often in the face of considerable efforts to change them. Although there is good evidence for this hypothesis, research has demonstrated that people do not always return to baseline after the occurrence of mood-changing events. See also SET POINT. [coined by Canadian-born U.S. psychologist Philip Brickman (1943–1982) and Donald CAMPBELL in a 1971 essay]

**hedonic well-being** the type of happiness or contentment that is achieved when pleasure is obtained and pain is avoided. Compare EUDAIMONIC WELL-BEING.

**hedonism** *n.* **1.** in philosophy, the doctrine that pleasure is an intrinsic good and the proper goal of all human action. One of the fundamental questions of ethics has been whether pleasure can or should be equated with the good in this way. **2.** in psychology, any theory that suggests that pleasure and the avoidance of pain are the only or the major motivating forces in human behavior. Hedonism is a foundational principle in psychoanalysis, in behaviorism, and even in theories that stress self-actualization and need fulfillment. To the extent that human beings are hedonistic, it is difficult to admit the possibility of genuine ALTRUISM. Also called **hedonistic psychology**. See EUDEMONISM; HEDONIC PSYCHOLOGY. —**hedonistic** *adj.*

**hegemony** *n.* the dominance of one individual, group, or state over others. In some 20th-century Marxist writings, the term refers particularly to the success of the dominant social class in imposing its ideology on other classes, so that this comes to seem part of the “natural” order of things. See also DOMINANT IDEOLOGY THESIS. —**hegemonic** *adj.*

**height phobia** see ACROPHOBIA.

**Heinz dilemma** a story about an ethical dilemma faced by a character named Heinz that was used by Lawrence KOHLBERG to assess the moral reasoning skills of those he asked to respond to it. Having exhausted every other possibility, Heinz must decide whether to steal an expensive drug that offers the only hope of saving his dying wife. See KOHLBERG’S THEORY OF MORAL DEVELOPMENT.

**Heisenberg principle** see UNCERTAINTY PRINCIPLE.

**helicotrema** *n.* a small opening at the apex of the cochlea where the SCALA VESTIBULI and SCALA TYMPANI communicate. This opening limits the ability of the BASILAR MEMBRANE to vibrate in response to sounds of very low frequency.

**heliocentric theory** the cosmological theory that the sun is the center of the solar system and that the earth and other heavenly bodies orbit around it. The theory, which originated in ancient Greece, was revived by Polish astronomer Nicolaus Copernicus (1475–1543) and elaborated by Italian physicist and astronomer Galileo Galilei (1564–1642). It was controversial in the 16th and 17th centuries because it opposed the traditional doctrine of the Catholic Church that the earth was stationary at the center of the universe (see GEOCENTRIC THEORY). Also called **Copernican theory**.

**heliotropism** *n.* see TROPISM.

**hellebore** *n.* any plant of the genus *Veratrum* but particularly *Veratrum viride*, a poisonous plant indigenous to North America that has a history of use by Native Americans for various medicinal purposes. It contains more than 20 alkaloids, including **veratrine**, which has analgesic properties when used topically but produces prolonged

muscle contractions when ingested. The hellebore alkaloids were also used medicinally in England as well as America in the 18th and 19th centuries in the treatment of numerous conditions, including seizures, neuralgia, headaches, and respiratory problems. They have been used more recently to lower blood pressure but generally are avoided because of their potential toxicity. The name *hellebore* is also given to poisonous ornamental plants of the Eurasian genus *Helleborus*.

**Helmholtz chessboard** see CHESSBOARD ILLUSION. [Hermann von HELMHOLTZ]

**Helmholtz color mixer** a device that enables the intensity and wavelength of two light sources to be independently adjusted, mixed, and presented by means of a prism as a single homogeneous field to an observer, who views the field through a modified telescope. [Hermann von HELMHOLTZ]

**Helmholtz square illusion** a square made up of parallel horizontal lines that looks like a vertically oriented rectangle (i.e., taller than a square), or a square made up of parallel vertical lines that looks like a horizontally oriented rectangle (i.e., wider than a square). [Hermann von HELMHOLTZ]

**Helmholtz theory** in audition, the still-controversial theory that pitch is determined by the place of stimulation along the BASILAR MEMBRANE. The theory is clearly flawed in certain aspects, such as its inability to account for the pitch of a missing fundamental (see VIRTUAL PITCH), but the essential notion remains viable. See PLACE THEORY. [Hermann von HELMHOLTZ]

**helper** *n.* in animal behavior, see ALLOPARENTING.

**helping** *n.* a type of PROSOCIAL behavior in which one or more individuals act to improve the status or well-being of one or more others. Although helping behavior is typically in response to a small request that involves little individual risk, all helping behavior incurs some cost to the individual providing it. See also ALTRUISM; EGOISTIC HELPING.

**helping model** a broadly based educational approach that has much in common with humanistic models in its emphasis on the development of the complete individual and the realization of a student’s full potential. The helping model is concerned with motor development, perceptual skills, cognitive development, emotional maturity, interpersonal skills, expression, creativity, and ethical values.

**helping professions** occupations that provide health and education services to individuals and groups, including occupations in the fields of psychology, psychiatry, counseling, medicine, nursing, social work, physical and occupational therapy, teaching, and education.

**helping relationship** a relationship in which at least one of the parties intends to promote the growth, development, maturity, or improved functioning of the other. The parties may be either individuals or groups. [defined in 1961 by Carl ROGERS]

**helplessness** *n.* a state of incapacity, vulnerability, or powerlessness associated with the perception that one cannot do much to improve a negative situation that has arisen. Theorists have suggested that helplessness underlies various forms of anxiety, dependence, withdrawal, and demoralization. See also COPING POTENTIAL; LEARNED HELPLESSNESS. —**helpless** *adj.*

**helplessness theory** see LEARNED HELPLESSNESS.

**help-seeking behavior** searching for or requesting help from others via formal or informal mechanisms, such as through mental health services. See TREATMENT-SEEKING BEHAVIOR.

**hem-** *combining form* see HEMO-.

**hematoma** *n.* an abnormal accumulation of blood as a result of vessel leakage or rupture. In the brain, hematomas can cause substantial behavioral deficits, and even death, by increasing INTRACRANIAL PRESSURE. Although some may spontaneously reabsorb and disappear, others must be surgically evacuated. See EPIDURAL HEMATOMA; SUBDURAL HEMATOMA.

**hematophobia** *n.* see BLOOD PHOBIA.

**hemeralopia** *n.* day blindness: a condition in which a person has difficulty seeing in bright light but has good vision in dim light.

**hemeraphonia** *n.* a psychogenic speech disorder in which a person is unable to vocalize during the day but may be able to speak normally at night.

**hemi-** *prefix* half.

**hemiachromatopsia** *n.* a VISUAL FIELD DEFECT that occurs after injury to the occipitotemporal region of the brain and is characterized by the selective loss of color vision in the CONTRALATERAL half of the visual field in each eye.

**hemiambyopia** *n.* a VISUAL FIELD DEFECT characterized by loss of color and form vision and depressed light vision in the same half of the visual field in each eye. It is caused by injury to the posterior region of the brain. See CEREBRAL AMBYOPIA.

**hemianalgesia** *n.* a loss of pain sensation on one side of the body.

**hemianesthesia** *n.* a loss of sensitivity to stimuli on one side of the body.

**hemianopia (hemianopsia; hemiopia)** *n.* a VISUAL FIELD DEFECT marked by loss of vision in half the normal visual field. Hemianopia may result from a lesion in the OPTIC CHIASM or the OPTIC RADIATIONS. See also BINASAL HEMIANOPIA; BITEMPORAL HEMIANOPIA; HETERONYMOUS HEMIANOPIA; HOMONYMOUS HEMIANOPIA. —**hemianopic** *adj.* —**hemianoptic** *adj.*

**hemianopic dyslexia** see PARACENTRAL SCOTOMA.

**hemiasomatognosia** *n.* see ASOMATOGNOSIA.

**hemiballismus** *n.* see BALLISMUS.

**hemichorea** *n.* a disorder involving choreic movements on only one side of the body. See CHOREA.

**hemicrania** *n.* pain or aching on only one side of the head, characteristic of a typical migraine headache.

**hemidecortication** *n.* surgical removal of the CEREBRAL CORTEX on one side of the brain.

**hemimegalencephaly** *n.* see MEGALENCEPHALY.

**hemineglect** *n.* see UNILATERAL NEGLECT.

**hemiopia** *n.* see HEMIANOPIA.

**hemiparesis** *n.* weakness or partial paralysis affecting one side of the body. See SPASTIC HEMIPARESIS.

**hemiplegia** *n.* complete paralysis that affects one side of the body, most often as a result of a STROKE. The paralysis is

typically opposite (contralateral) to the side of the brain affected. —**hemiplegic** *adj.*

**hemispatial neglect** see UNILATERAL NEGLECT.

**hemispherical roles in emotion** the different roles of the left and right hemispheres of the brain in the generation and regulation of emotions. In particular, the frontal lobe of the left hemisphere is believed to be linked to positive emotions; injury or damage to this region results in loss of POSITIVE AFFECT. By contrast, the frontal lobe of the right hemisphere is more related to negative emotions (e.g., sadness, fear), with lesions to this portion of the brain resulting in loss of NEGATIVE AFFECT. Alternatively, the left frontal region is regarded as controlling emotions involving approach, and the right frontal region as controlling emotions involving avoidance.

**hemisphere** *n.* either of the symmetrical halves of the cerebrum (see CEREBRAL HEMISPHERE) or the CEREBELLUM. —**hemispheric** or **hemispherical** *adj.*

**hemispherectomy** *n.* surgical removal of either one of the cerebral hemispheres of the brain, most often the non-dominant hemisphere for treatment of intractable epilepsy.

**hemispheric asymmetry** the idea that the two cerebral hemispheres of the brain are not identical but differ in size, shape, and function. The functions that display the most pronounced asymmetry are language processing in the left hemisphere and visuospatial processing in the right hemisphere.

**hemispheric asymmetry reduction in older adults (HAROLD)** a model of the effects of aging on brain activity, proposing that prefrontal activity during cognitive performance tends to be less lateralized and to occur more often on both sides of the brain in older adults than in younger adults. The model is based on findings from functional neuroimaging and behavioral studies on memory, perception, and inhibitory control. The model proposes that age-related hemispheric asymmetry reduction in older adults may reflect both compensatory and dedifferentiation processes. See COMPENSATION; DIFFERENTIATION—DEDIFFERENTIATION HYPOTHESIS. [proposed by Roberto E. Cabeza (1960– ), Argentinian-born U.S. psychologist]

**hemispheric communication** the continuous exchange of neural signals between the two cerebral hemispheres, typically via the CORPUS CALLOSUM.

**hemispheric dominance** see DOMINANCE; HEMISPHERIC LATERALIZATION.

**hemispheric encoding-retrieval asymmetry (HERA)** the hypothesis that the left cerebral hemisphere is especially active during the encoding of a memory, whereas the right hemisphere is especially active during the retrieval of the memory. [proposed by Endel TULVING]

**hemispheric lateralization** the processes whereby some functions, such as manual control (HANDEDNESS) or speech production, are controlled or influenced more by one cerebral hemisphere than the other. Researchers now prefer to speak of hemispheric lateralization or **hemispheric specialization** for particular functions, rather than **hemispheric dominance** or **lateral dominance** (see DOMINANCE). Also called **cerebral lateralization**.

**hemlock** *n.* see SORCERY DRUG.

**hemo-** (**hem-**; **haemo-**; **haem-**) *combining form* blood.

**hemodynamic response** changes in blood flow to the brain, as measured via FUNCTIONAL MAGNETIC RESONANCE IMAGING.

**hemoglobin (Hb)** *n.* an iron-rich pigment of red blood cells that transports oxygen molecules and is responsible for the color of blood. When saturated with oxygen, the pigment becomes bright red.

**hemoglobinopathy** *n.* any of various inherited disorders associated with genetic defects in the characteristics of hemoglobin. A common effect of hemoglobinopathies is anemia, which may be severe in HOMOZYGOUS individuals and mild in HETEROZYGOUS carriers. Sickle-cell anemia and Cooley's anemia are examples of hemoglobinopathies.

**hemophobia** *n.* see BLOOD PHOBIA.

**hemorrhage** *n.* bleeding; any loss of blood from an artery or vein. A hemorrhage may be external, internal, or within a tissue, such as the skin; a bruise is a sign of bleeding within the skin. A hemorrhage from a ruptured artery is bright red in color and erupts in spurts that coincide with heart contractions; it is generally more serious than hemorrhage from a vein, which shows as a relatively slow, steady flow of dark red blood. Brain hemorrhages may arise from head injuries or ANEURYSMS, causing widespread damage in some cases (see CEREBRAL HEMORRHAGE). —**hemorrhagic** *adj.*

**hemorrhagic stroke** a STROKE resulting from rupture of a cerebral vessel, causing intracranial bleeding. Intracerebral hemorrhage accounts for approximately 10% of strokes and tends to occur deep in the BASAL GANGLIA, INTERNAL CAPSULE, and brainstem.

**hemothymia** *n.* a lust for blood and a morbid desire to commit murder. See also HOMICIDOMANIA.

**hemp** *n.* the plant *Cannabis sativa*, native to Asia, from which marijuana (CANNABIS) is derived. Hemp is a colloquial term for marijuana.

**henbane** *n.* a poisonous plant, *Hyoscyamus niger*, native to the Mediterranean and southern Europe and a source of the anticholinergic alkaloids ATROPINE, hyoscyamine, and SCOPOLAMINE. Although traditionally used in small doses as an analgesic, sedative, and smooth muscle relaxant, henbane in larger quantities is highly toxic, producing effects similar to those of poisoning with BELLADONNA ALKALOIDS, including delirium, hallucinations, convulsions, coma, and possibly death. It has long been associated in folklore with witchcraft and magic and even enjoyed a reputation for a time as an aphrodisiac.

**Henle fiber** the cytoplasmic extension that allows a RETINAL CONE in the region of the FOVEA CENTRALIS to reach one of the RETINAL BIPOLAR CELLS, all of which are laterally displaced from the fovea. [Friedrich Gustav Jakob **Henle** (1809–1885), German anatomist]

**Henning's odor prism** a prism-shaped graphic representation of six PRIMARY ODORS and their relationships. Burnt, spicy, resinous, foul, fruity, and flowery are the primary odors that occupy the corners of the prism, and each surface represents the positions of odors that are similar to the primaries at the corners of that surface. Also called **Henning's smell prism**. [Hans **Henning** (1885–1946), German psychologist]

**Henning's taste tetrahedron** an arrangement to represent four putative PRIMARY TASTES: sweet, salty, sour, and bitter. These basic tastes are at the apices of the tetra-

hedron; a combination of two qualities, such as salty–bitter (e.g., the taste of potassium chloride), are along the edges; and tastes combining three qualities, such as salty–sweet–bitter (e.g., the taste of sodium saccharin), are on the faces. The tetrahedron is hollow because Henning believed no chemical could generate all four basic tastes. [proposed in 1927 by Hans **Henning**]

**hepatic encephalopathy** a metabolic brain disorder marked by tremors with increased muscle tone, mental status changes, and disturbances in personality, mood, and behavior. It is associated with liver disease and an accumulation of ammonia products in the blood and other tissues. Also called **portal-systemic encephalopathy**.

**hepatitis** *n.* inflammation of the liver, marked by diffuse or patchy areas of dead liver cells in the liver lobules. Symptoms, when experienced, range from mild, flulike symptoms to liver failure, which can be fatal. JAUNDICE and BILIRUBIN coloring of the urine are usual signs. The different forms of viral hepatitis are identified by letters indicating the virus responsible. **Hepatitis A** is contracted by ingesting contaminated food or water, whereas **hepatitis B** is usually transmitted by transfusions of contaminated blood, by the use of dirty hypodermic needles, or by sexual contact with an infected person. The **hepatitis C** virus (HCV) is one of the most important causes of chronic liver disease in the United States; its modes of transmission are similar to those of hepatitis B. Nonviral hepatitis can be caused by toxic substances (e.g., alcohol, medications, chemicals), gall bladder or pancreas disorders, or autoimmune disorders.

**HERA** abbreviation for HEMISPHERIC ENCODING–RETRIEVAL ASYMMETRY.

**herbal ecstasy** an over-the-counter stimulant purchased through mail-order catalogs and often confused with MDMA.

**herd instinct** a drive in nonhuman animals to congregate in flocks and in humans to form social groups. See GREGARIOUSNESS. [defined by William MCDUGALL]

**here and now** the immediate situation. In psychotherapy, it comprises the cognitive, affective, and behavioral material arising at any given point in a session, as well as the relationship between the therapist and client at the corresponding point in time. When the **here-and-now approach** is used in psychotherapy, the emphasis is placed on understanding present feelings and interpersonal reactions as they occur in an ongoing treatment session, with little or no emphasis on or exploration of past experience or underlying reasons for the client's thoughts, emotions, or behavior. The approach is often used in PSYCHODYNAMIC PSYCHOTHERAPY with regard to the therapeutic relationship, GESTALT THERAPY, and many forms of FAMILY THERAPY to heighten client awareness.

**hereditarianism** *n.* the view that genetic inheritance is the major influence on behavior. Opposed to this view is the belief that environment and learning account for the major differences between people. The question of heredity versus environment or “nature versus nurture” continues to be controversial, especially as it applies to human intelligence. See GENETIC DETERMINISM; NATURE–NURTURE. —**hereditarian** *adj.*

**hereditary ataxia** any in a group of heritable disorders characterized by the inability to perform coordinated movements (ataxia), among other clinical features. Exam-

ples include ATAXIA TELANGIECTASIA and FRIEDREICH'S ATAXIA.

**hereditary hyperuricemia (hereditary choreo-athetosis)** see LESCH-NYHAN SYNDROME.

**hereditary myopathy** see MYOPATHY.

**hereditary predisposition** see GENETIC PREDISPOSITION.

**heredity** *n.* **1.** the transmission of traits from parents to their offspring. Study of the mechanisms and laws of heredity is the basis of the science of GENETICS. Heredity depends upon the character of the genes contained in the parents' CHROMOSOMES, which in turn depends on the particular GENETIC CODE carried by the DNA of which the chromosomes are composed. **2.** loosely, the sum of the characteristics transmitted from parents to their offspring.

**heredity-environment controversy** see NATURE-NURTURE.

**Hering-Breuer reflex** a nervous mechanism involved in normal breathing, with stimuli from sensory endings in lung tissue limiting inspiration and expiration. [Ewald HERING; Josef BREUER]

**Hering grays** a set of 50 gray papers ranging in subjectively equal steps from extreme white to extreme black. [Ewald HERING]

**Hering illusion** a misperception that occurs when two parallel straight lines are superimposed on a pattern of lines that radiate from a central point. When the two lines are placed equidistant from one another on opposite sides of the center point, they appear to be bowed outward from the center, rather than straight. Also called **Hering-Helmholtz illusion**. [Ewald HERING; Hermann von HELMHOLTZ]

**Hering's afterimage** a positive aftersensation of the same hue and saturation as the original stimulus. See AFTERIMAGE. [Ewald HERING]

**Hering theory of color vision** a theory of color vision postulating that there are three sets of receptors, one of which is sensitive to white and black, another to red and green, and the third to yellow and blue. The breaking down (catabolism) of these substances is supposed to yield one member of these pairs (white, red, or yellow), while the building up (anabolism) of the same substances yields the other (black, green, or blue). Color blindness results from the absence of one or more of the chromatic processes. See OPPONENT PROCESS THEORY OF COLOR VISION. [proposed in 1875 by Ewald HERING]

**heritability** *n.* **1.** the capacity to be inherited. **2.** a statistical estimate of the contribution of inheritance to a given trait or function in a population (but not in particular individuals). Heritabilities can range from 0, indicating no contribution of heritable factors, to 1, indicating total contribution of heritable factors. Also called **heritability estimate**.

**heritage** *n.* **1.** any cultural tradition, custom, or resource passed from preceding to successive generations. **2.** artworks, historic buildings or monuments, and natural landscapes that are regarded as having special value and are accordingly preserved for future generations. See CULTURAL HERITAGE; SOCIAL HERITAGE. See also CULTURAL CONSERVE.

**hermaphroditism** *n.* the condition of possessing both male and female sex organs (in humans, e.g., possessing

both ovarian and testicular tissue). Hermaphroditism is very rare and should not be confused with the more common PSEUDOHERMAPHRODITISM, in which the gonads are of one sex but the external genitalia are either ambiguous or of the other sex. See also INTERSEX. —**hermaphrodite** *n.*

**hermeneutics** *n.* the theory or science of interpretation. Hermeneutics is concerned with the ways in which humans derive meaning from language or other symbolic expression. Originally, the term was confined to the interpretation of Scripture, with an emphasis on generating methods of interpretation that would yield the correct meaning of the text. Subsequently, two main strains of hermeneutic thought developed. One originates from the work of German philosopher Friedrich Schleiermacher (1768–1834), who broadened hermeneutics by applying it to the interpretation of texts in general rather than to religious writings in particular. This project was expanded by German philosopher Wilhelm Dilthey (1833–1911) into the interpretation of all forms of cultural expression, including artworks, institutions, and historical events. A key concept in this tradition of hermeneutics is the so-called **hermeneutic circle**—the notion that interpretation is always circular, in that particulars will necessarily be interpreted in the light of one's understanding of the whole, and the understanding of the whole will be altered by the understanding of the particulars. Another key assumption is the need to gain insight into the mind of the person or people whose expression is the subject of interpretation. This approach has been criticized on the grounds that such insight is impossible, because there is no access to the mind of another; thus, the methods of hermeneutics will always be imprecise and their results relativistic.

A second, more radical, strain of hermeneutics derives from the PHENOMENOLOGY of Edmund Husserl (1859–1938) and the work of German philosopher Martin Heidegger (1889–1976). Heidegger expanded the project of interpretation to include DASEIN or human being itself. This suggests that all human behavior can be understood as meaningful expression, much as one would understand a written text. It also turns the process of interpretation back on the interpreter, as the understanding of the being of human beings entails interpretations of interpretive acts. This shift has given rise to a broad movement within philosophy, psychology, and literary criticism in which richness of interpretation is considered more valuable than consistent methodology or arriving at the "correct" interpretation. Such an approach is a clear alternative to a natural scientific psychology. This type of hermeneutics has informed other contemporary movements, notably EXISTENTIALISM, POSTMODERNISM, and POSTSTRUCTURALISM. —**hermeneutic** *adj.*

**herniation** *n.* the abnormal protrusion of an organ or other bodily structure through an opening in a membrane, muscle, or bone.

**hero** *n.* in PSYCHODRAMA, the person (PROTAGONIST) who is portraying a problem.

**heroin** *n.* a highly addictive OPIOID that is a synthetic analog of MORPHINE and three times more potent. In many countries, including Great Britain and Canada, it is used clinically for pain management (see DIACETYLMORPHINE), but it is not legally available in the United States due to concerns about its potential for abuse. Its rapid onset of action leads to an intense initial high, followed by a period of euphoria and a sense of well-being. As a street drug, heroin is commonly injected intravenously or subcutaneously



(called SKIN POPPING). Injection using shared needles is a common mechanism of transmission of HIV, hepatitis, and other diseases. It can also be ingested nasally (snorted) or smoked. See OPIOID INTOXICATION; OPIOID USE DISORDER; OPIOID WITHDRAWAL.

**herpes infection** a disease produced by a herpes virus. A herpes infection may be manifested as chicken pox, cold sores, shingles, ulceration of the cornea, encephalitis, stomatitis, or vulvovaginitis (GENITAL HERPES). The major strains are **herpes varicella-zoster**, which causes both chicken pox and shingles; **herpes simplex Type 1**, the cause of cold sores and sometimes genital herpes; and **herpes simplex Type 2**, the most frequent cause of genital herpes. See also PERINATAL HERPES-VIRUS INFECTION.

**herpes-simplex encephalitis** a form of ENCEPHALITIS (inflammation of the brain) caused by infection with the herpes-simplex virus. Seizures occur repeatedly early in the course of the disease, and there may be serious memory impairment. The virus tends to affect the temporal and frontal lobes. Also called **herpes encephalitis**.

**herpetic neuralgia** pain associated with shingles, caused by reactivation of the herpes varicella-zoster virus (see HERPES INFECTION). Following an attack of chicken pox, the virus lies dormant in a dorsal nerve root and ganglion of the spinal cord; when reactivated, it spreads down the sensory nerve, causing vesicle formation and severe, burning, lancinating pain. This acute pain typically resolves in 3 to 5 weeks, but patients often develop the chronic, debilitating pain known as **postherpetic neuralgia**.

**hertz** (symbol: Hz) *n.* the unit of FREQUENCY equal to one cycle per second. [Heinrich Rudolf **Hertz** (1857–1894), German physicist]

**Heschl's gyrus** one of several transverse ridges on the upper side of the TEMPORAL LOBE of the brain that are associated with the sense of hearing. [Richard **Heschl** (1824–1881), Austrian pathologist who first traced the auditory pathways of humans to this convolution]

**hetaeral fantasy** a fantasy in which a woman plays the role of a courtesan. In the male version of the fantasy, the man possesses a courtesan. Also called **courtesan fantasy**.

**hetero-** *combining form* other or different.

**heterochromic iridocyclitis** see IRIDOCYCLITIS.

**heterochrony** *n.* **1.** a difference in the rate of two processes, such as the conduction of nerve impulses. **2.** any evolutionary change in the relative time of appearance of maturational features or events or in the rate of development of an organism. Also called **heterochronia**.

**heteroeroticism** *n.* an attraction toward the opposite sex, as in heterosexuality. Compare HOMOEROTICISM. Also called **heteroeroticism**. —**heteroerotic** *adj.*

**heterogametic** *adj.* referring to the sex that has two dissimilar SEX CHROMOSOMES, such as the male sex in mammals and the female sex in birds. Compare HOMOGAMETIC.

**heterogamy** *n.* a marriage between partners from dissimilar ethnic, racial, religious, educational, or socioeconomic backgrounds. Compare HOMOGAMY.

**heterogeneity** *n.* the quality of having very different characteristics or values. For example, HETEROGENEITY OF VARIANCE is present in an ANALYSIS OF VARIANCE when the average squared distance of each score from the mean dif-

fers for each group in the study (e.g., control group vs. treatment group). Compare HOMOGENEITY.

**heterogeneity of variance** the situation in which the variance of a random variable is different at each level or value of another variable.  $\text{Var}(y|x)$  is not the same for all values of  $x$ ; that is, the variance in  $y$  is a function of the variable  $x$ . Heterogeneity of variance violates one of the basic assumptions of REGRESSION ANALYSIS and other statistical procedures. Also called **heteroscedasticity**. Compare HOMOGENEITY OF VARIANCE.

**heterogeneous** *adj.* composed of diverse elements. Compare HOMOGENEOUS.

**heterogeneous group** an aggregate of individuals or other elements that are different from one another in a number of significant respects. In a social context, for example, a heterogeneous group might differ in age, socioeconomic background, values, work experience, education, and so on. In an educational context, heterogeneous groups may be entire classes or smaller groups of students of varying ability who work together in a specific area, such as art or reading. Compare HOMOGENEOUS GROUP.

**heterohypnosis** *n.* a state of HYPNOSIS induced in one person by another. Compare SELF-HYPNOSIS.

**heterolalia** *n.* see HETEROPHEMY.

**heteromorphosis** *n.* **1.** abnormal shape or structure. **2.** the development of a regenerated organ or structure that is different from the one that was lost.

**heteronomous** *adj.* under the control of or influenced by various external factors. Compare AUTONOMOUS.

**heteronomous stage** in Jean PIAGET's theory of moral development, the stage during which the child, approximately 6 to 10 years of age, equates morality with the rules and principles of his or her parents and other authority figures. That is, the child evaluates the rightness or wrongness of an act only in terms of adult sanctions for or against it and of the consequences or possible punishment it may bring. Also called **heteronomous morality**. See also IMMANENT JUSTICE; MORAL ABSOLUTISM; MORAL REALISM. Compare AUTONOMOUS STAGE; PREMORAL STAGE.

**heteronomy** *n.* a state of dependence on others and lack of self-determination. Compare AUTONOMY.

**heteronormativity** *n.* the assumption that heterosexuality is the standard for defining normal sexual behavior and that male–female differences and gender roles are the natural and immutable essentials in normal human relations. According to some social theorists, this assumption is fundamentally embedded in, and legitimizes, social and legal institutions that devalue, marginalize, and discriminate against people who deviate from its normative principle (e.g., gay men, lesbians, bisexuals, transgendered persons). See also HETEROSEXISM. [coined in 1991 by U.S. social theorist Michael Warner]

**heteronymous hemianopia** a VISUAL FIELD DEFECT in which vision in either the left or right half of both eyes is absent due to a lesion in the optic chiasm. See HEMIANOPIA.

**heteronymous reflex** a reflex elicited by stimulation in one muscle of a synergistic group that results in contraction of another muscle in the same group. Compare HOMOYMOUS REFLEX.

**heterophemy** *n.* the act of saying or writing a word or phrase other than the words intended. Often, the substitu-

tion conveys the opposite meaning to what the individual intended. Also called **heterolalia**; **heterophasia**; **heterophemia**. See also FREUDIAN SLIP; SLIP OF THE TONGUE.

**heterophilia** *n.* love of, or attraction to, members of the opposite sex.

**heterophily** *n.* **1.** any tendency for individuals who differ from one another in some way to make social connections. It is less common than HOMOPHILY. Complementarity, which occurs when people with different but complementary characteristics form a relationship, is an example of heterophily. **2.** the degree of dissimilarity between individuals who share social ties.

**heterophoria** *n.* the deviation of an eye because of an imbalance in the extrinsic EYE MUSCLES.

**heteroscedasticity** *n.* see HETEROGENEITY OF VARIANCE. —**heteroscedastic** *adj.*

**heterosexism** *n.* prejudice against any nonheterosexual form of behavior, relationship, or community, particularly the denigration of lesbians, gay men, and those who are bisexual or transgender. Whereas HOMOPHOBIA generally refers to an individual's fear or dread of gay men or lesbians, heterosexism denotes a wider system of beliefs, attitudes, and institutional structures that attach value to heterosexuality and disparage alternative sexual behavior and orientation. See also HETERONORMATIVITY.

**Heterosexual–Homosexual Rating Scale** see KINSEY SCALE.

**heterosexuality** *n.* sexual attraction to or activity between members of the opposite sex. —**heterosexual** *adj.*

**heterosis** *n.* see HYBRID VIGOR.

**heterosociality** *n.* relationships on a social (rather than a sexual or romantic) level between people of opposite sexes.

**heterostasis** *n.* an organism's seeking of maximal stimulation. [defined by A. Harry Klopff]

**heterotopia** *n.* the congenital development of gray matter in the area of the brain and spinal cord normally consisting of white matter.

**heterotropia** *n.* see STRABISMUS.

**heterozygous** *adj.* possessing different forms of a gene (i.e., different ALLELES) at a given genetic locus on each of a pair of HOMOLOGOUS chromosomes. One allele is inherited from the mother and the other from the father. In such individuals, the DOMINANT ALLELE is expressed, and the RECESSIVE ALLELE is not. Compare HOMOZYGOUS. —**heterozygote** *n.*

**heuristic** *n.* **1.** in cognition, an experience-based strategy for solving a problem or making a decision that often provides an efficient means of finding an answer but cannot guarantee a correct outcome. By contrast, an ALGORITHM guarantees a solution but may be much less efficient. Some heuristics, such as the AVAILABILITY HEURISTIC or REPRESENTATIVENESS HEURISTIC, involve systematic bias. Also called **cognitive heuristic**. [introduced by Herbert A. SIMON; developed by Daniel KAHNEMAN and Amos TVERSKY] **2.** in the social sciences, a conceptual device, such as a model or working hypothesis, that is intended to explore or limit the possibilities of a question rather than to provide an explanation of the facts. Also called **heuristic model**. See also AS-IF HYPOTHESIS; CONSTRUCT. **3.** in ergonomics, a procedure in which several experts, working indepen-

dently, evaluate a product or system according to established usability guidelines and produce structured reports noting any failings. The advantage of this type of evaluation is that it is relatively simple and cheap. The chief disadvantage is that it does not involve testing among target users and so may not identify problems experienced by particular groups (e.g., those with a different cultural background). Compare TASK ANALYSIS.

**heuristic search** a search through a PROBLEM SPACE that is optimized by the use of strategies that reduce the number of possible paths to a solution that need to be attempted. See BEST-FIRST SEARCH.

**heuristic-systematic model (HSM)** a theory of persuasion postulating that the validity of a persuasive message can be assessed in two different ways. **Systematic processing** involves the careful scrutiny of the merits of attitude-relevant information in the message. **Heuristic processing** involves the use of a subset of information in the message as a basis for implementing a simple decision rule to determine if the message should be accepted (e.g., judging a message to be valid because its source is highly credible). See also DUAL PROCESS MODEL OF PERSUASION. [first proposed and subsequently developed by U.S. psychologists Shelly Chaiken (1949– ) and Alice H. Eagly (1938– )]

**heuristic value** the potential to stimulate or encourage further thinking.

**Heymans's law** the generalization that sensitivity to one stimulus decreases with increases in the intensity of another, concurrent, stimulus. [Corneille Heymans (1892–1968), Belgian physiologist]

**Heywood case** any CORRELATION COEFFICIENT, REGRESSION COEFFICIENT, FACTOR LOADING, or similar PARAMETER estimate having a value that is impossible or very rare (e.g., a negative ERROR VARIANCE estimate). Heywood cases may indicate any of the following: a sample that is too small to adequately estimate the parameters; data that do not have a NORMAL DISTRIBUTION or that contain OUTLIERS; a misspecified model that is not appropriate for the data; or a parameter whose true value is so close to a boundary (e.g., 1 or 0) in the population that its estimate exceeded this limit due to sampling fluctuation.

**HFA** abbreviation for HIGH-FUNCTIONING AUTISM.

**HGPRT** abbreviation for HYPOXANTHINE–GUANINE PHOSPHORIBOSYLTRANSFERASE.

**5-HIAA** abbreviation for 5-HYDROXYINDOLEACETIC ACID.

**hibernation** *n.* a period of inactivity accompanied by a significant decrease in body temperature that occurs in certain warm-blooded vertebrates in temperate or arctic environments during winter. Body temperature may drop to within a few degrees of freezing. Activity of endocrine glands decreases during this period, but no single gland has been found to control hibernation. Some species (e.g., bears) consume large quantities of food before hibernation and maintain bodily functions with energy from fat deposits, but others (e.g., golden hamsters) store food and leave hibernation periodically to feed. Cold-blooded animals become dormant in cold temperatures. —**hibernate** *vb.*

**Hick's law** in experiments or tasks involving CHOICE REACTION TIME, the finding that the time required to classify a stimulus as being from a particular set increases proportionally with the number of stimuli in the set. Also called **Hick–Hyman law**. [William Edmund Hick (1912–1974),

British psychologist; Ray **Hyman** (1928– ), U.S. cognitive psychologist]

**hidden-clue test** a test in which the participant must discover a particular feature of the stimulus situation that is the clue to a reward.

**Hidden Figures Test** see EMBEDDED FIGURES TEST.

**hidden grief** see DISENFRANCHISED GRIEF.

**hidden observer** an intrapsychic entity with awareness of experiences that occur outside of an individual's consciousness, hypothesized to explain the dissociative phenomenon in which a hypnotized person who has been told to block certain stimuli (e.g., pain induced by ice-cold water) still registers the blocked sensation via hand signals even while verbally denying it. It is as if a dissociated observer is registering the stimuli that the hypnotized person has successfully blocked. Posthypnotically, such individuals may recall auditory, visual, or tactile stimuli to which they appeared oblivious at the time. See also NEODISSOCIATION THEORY. [investigated by Ernest R. HILGARD]

**hidden profile task** a group problem-solving task whose solution can only be obtained when group members effectively pool their individual information about alternatives. A hidden profile is said to exist when the group collectively has more information supporting one alternative over others, but the superiority of this alternative is obscured from individual members unless information is shared. [first identified in 1985 by U.S. social psychologists Garold Stasser (1947– ) and William Titus]

**hidden variable** an undiscovered causative variable. When a relationship is found between variables  $x$  and  $y$ , variable  $x$  may erroneously be thought to be the cause of  $y$ . However, the cause of  $y$  may be a hidden variable  $z$  that is correlated with variable  $x$ . Also called **lurking variable**; **third variable**. See THIRD-VARIABLE PROBLEM.

**hierarchical clustering** a multistage procedure in which entities are grouped into ever larger and more heterogeneous clusters or separated into ever smaller and more homogeneous clusters (see CLUSTER ANALYSIS). The most common form of hierarchical clustering is **agglomerative clustering**, in which the individual entities are first paired, then these pairs are paired, and so on until ultimately all entities form a single large group or cluster. A second form of hierarchical clustering is **divisive clustering**, in which all entities initially are part of one large group which is split into progressively smaller groups according to dissimilarity until ultimately each entity is in its own group or cluster. The outcome of both types of hierarchical clustering may be represented graphically as a DENDROGRAM.

**hierarchical design** see HIERARCHICALLY NESTED DESIGN.

**hierarchical linear model (HLM)** a statistical model that acknowledges different levels in the data, such that individuals or entities within each level have correlated scores. The model enables a researcher to test hypotheses about cross-level effects and partition the VARIANCE and CO-VARIANCE components among levels. For example, hierarchical linear models often are used in educational research since they can account for the fact that students within a classroom will behave similarly, as will classrooms within the same school, and so on up the hierarchy of levels. Also called **multilevel model**.

**hierarchically nested design** any research design that involves several levels of sampling, such that the enti-

ties on the lower levels of the design are nested or subsumed within higher order groups. For example, a hierarchically nested design for an educational study might involve students (A), who are nested within classrooms (B), which are nested within schools (C), which are further nested within school districts (D). Several statistical procedures (e.g., ANALYSIS OF VARIANCE, REGRESSION ANALYSIS, HIERARCHICAL LINEAR MODELS) also incorporate a hierarchical aspect. Also called **hierarchical design**; **nested design**.

**hierarchical model** a statistical procedure that takes into account situations in which lower level variables or entities are part of a larger set or sets. For example, a hierarchical FACTOR ANALYSIS model posits that relationships among a subset of lower level primary variables (e.g., verbal, mathematical, and social intelligence) can be explained by a higher order or general factor (e.g., general intelligence). Similarly, a HIERARCHICAL LINEAR MODEL is a particular type of hierarchical model that includes several levels of actual variables as components of a progressively larger overall set. Also called **nested model**.

**hierarchical model of personality** a model of either within-person dynamics or individual differences in personality in which some psychological constructs are viewed as high-level variables that organize or govern the functioning of other lower level variables. For example, a hierarchical model of personality traits might view the construct SOCIABILITY as being at a lower level in a hierarchy than the construct EXTRAVERSION: Sociability would be seen as a form or example of the higher level trait of extraversion.

**hierarchical regression** a statistical procedure in which hypothesized predictors of a DEPENDENT VARIABLE are included in an analysis in several steps that illuminate the contribution of each set of variables. For example, a researcher interested in predicting career satisfaction could use hierarchical regression to assess the contribution of individual-level variables (e.g., career influence), institutional-level variables (e.g., work climate), and interactional-level variables (e.g., work respect). Also called **hierarchical multiple regression**; **hierarchical regression analysis**; **sequential regression**. See also MULTIPLE REGRESSION. Compare SIMULTANEOUS REGRESSION.

**hierarchical theory of intelligence** any theory of intelligence postulating that the abilities constituting intelligence are arranged in a series of levels (of a hierarchy) ranging from general to specific. Many of these theories are based on recognizing three levels of factors, first proposed by U.S. psychologist Karl J. Holzinger (1892–1954): (a) the general factor, applying to all intellectual tasks; (b) group factors, which apply to some but not all intellectual tasks; and (c) specific factors, applying to individual tasks. Examples of such theories are the THREE-STRATUM MODEL OF INTELLIGENCE and the CATTELL–HORN THEORY OF INTELLIGENCE.

**hierarchization** *n.* in PIAGETIAN THEORY, the process whereby each current cognitive structure can be traced to earlier, more primitive structures that were necessary for the attainment of the more advanced structure.

**hierarchy** *n.* 1. a clear ordering of individuals on some behavioral dimension, such as dominance–submission. A linear hierarchy occurs when all individuals can be arrayed in a strict transitive order along a continuum (see DOMINANCE HIERARCHY; ORGANIZATIONAL HIERARCHY).

Often, however, a hierarchy is more complex, with some individuals having equal status or acting in COALITIONS, or with ordering based on different factors (see ANIMAL DOMINANCE). **2.** in neuroscience, an organization of control systems such that one area of the brain controls another, which in turn may control neuromuscular action.

**hierarchy-legitimizing myth** see SOCIAL DOMINANCE THEORY.

**hierarchy of motives (hierarchy of needs)** see MASLOW'S MOTIVATIONAL HIERARCHY.

**hierarchy of response** see RESPONSE HIERARCHY.

**high** *n.* slang for the subjective feelings of intoxication experienced following ingestion of psychoactive drugs.

**high-altitude cerebral edema** see ACUTE MOUNTAIN SICKNESS.

**high blood pressure** see HYPERTENSION.

**high chromaticity** see COLOR PURITY.

**higher brain center** loosely, any part of the cerebrum associated with cognitive processes, such as learning and memory.

**higher level skill** a work method or ability that can be applied to many tasks rather than one particular task.

**higher mental process** any of the more complex types of cognition, such as thinking, judgment, imagination, memory, and language.

**higher order conditioning** in CLASSICAL CONDITIONING, a procedure in which the CONDITIONED STIMULUS of one experiment acts as the UNCONDITIONED STIMULUS of another, for the purpose of conditioning a NEUTRAL STIMULUS. For example, after pairing a tone with food, and establishing the tone as a conditioned stimulus that elicits salivation, a light could be paired with the tone. If the light alone comes to elicit salivation, then higher order conditioning has occurred.

**higher order consciousness** nonsensory conscious experiences, including abstract ideas, language-dependent thinking, and self-consciousness. Compare SENSORY CONSCIOUSNESS. [proposed by U.S. neuroscientist Gerald M. Edelman (1929–2014) and others]

**higher order construct** any large, coherent construct that is used to organize information and to integrate it into one's general knowledge.

**higher order correlation** see PARTIAL CORRELATION.

**higher order design** any research design that attempts to understand a phenomenon by assessing the separate and joint effects of several factors at once. For example, an experiment could be conducted to assess the effect of a TREATMENT condition versus a CONTROL CONDITION on cognitive functioning while simultaneously assessing the influence of gender; this would allow an assessment of the MAIN EFFECTS for each factor (treatment condition and gender) as well as the interaction between them.

**higher order interaction** in an ANALYSIS OF VARIANCE, the joint effect of three or more INDEPENDENT VARIABLES on the DEPENDENT VARIABLE. For example, a researcher could conduct a study to assess the effect of a particular treatment (e.g., treatment vs. no treatment) as well as the effect of education level and socioeconomic status on cognitive functioning. This design would allow an examination of the MAIN EFFECTS for treatment, education, and

socioeconomic status individually; the TWO-WAY INTERACTIONS between treatment and education, education and socioeconomic status, and treatment and socioeconomic status; and the higher order THREE-WAY INTERACTION between treatment, education, and socioeconomic status.

**higher order processes** see EXECUTIVE FUNCTIONS.

**higher order thought** often, a synonym for conscious thought: any of the deliberate, complex cognitive processes of which one is explicitly aware and that are crucial to one's intentional action and other self-referential activities. Higher order thought thus may be considered equivalent to EXECUTIVE FUNCTIONS and includes any of a variety of acts that involve the access and manipulation of self-knowledge, such as conceptualization, evaluation, introspection, and reflection. U.S. philosopher David M. Rosenthal has extended this idea into **higher order thought theory**, which specifies that a mental state is conscious only if one thinks deliberately about it such that one knows the state is being experienced and can report on it. Others (e.g., U.S. philosopher William G. Lycan [1945– ]) advocate a **higher order perception theory**, in which consciousness arises from self-monitoring by a quasi-perceptual faculty; still others (e.g., U.S. philosopher Rocco J. Gennaro) propose a **higher order global state theory**, in which meta-activity is key.

**higher response unit** a complex response or act consisting of multiple simple responses or acts.

**high-functioning autism (HFA)** a controversial, non-standardized classification describing individuals who meet the DSM-IV-TR diagnostic criteria for AUTISM but who have higher IQs and less severe impairment than seen in others with the disorder. Compare LOW-FUNCTIONING AUTISM. See also ASPERGER'S DISORDER. [first described in 1943 by Austrian-born U.S. child psychiatrist Leo Kanner (1894–1981)]

**high-involvement management** an approach to managing organizations that attempts to tap the potential of employees by obtaining input from them on decisions, sharing information about the business with them, providing training to enhance their skills, and providing incentives for becoming skilled and committed. [described by U.S. management theorist Edward E. Lawler III (1938– )]

**high-pass filter** see FILTER.

**high-potency antipsychotic** any of various conventional ANTIPSYCHOTICS that have either a relatively high degree of affinity for the dopamine D2 receptor or significant EXTRAPYRAMIDAL SYMPTOMS. High-potency antipsychotics include FLUPHENAZINE, HALOPERIDOL, thiothixene (see THI-OXANTHENE), TRIFLUOPERAZINE, and PIMOZIDE.

**high resolution** the ability to distinguish as separate entities two stimuli that are very close to one another in some dimension.

**high risk** significantly heightened vulnerability to a disorder or disease. An individual's risk status is influenced by genetic, physical, and behavioral factors or conditions. For example, children of a parent with bipolar disorder have a much greater risk of developing the disorder than other children, and individuals who engage in unprotected sex are at high risk of contracting HIV and other sexually transmitted diseases.

**high-risk design** a research design used to study individuals or groups in which there is thought to be a high probability of some disorder. For example, a high-risk design could be used to study families in which one or more

individuals have bipolar disorder so as to gauge the likelihood of additional family members subsequently experiencing the disorder.

**High School Personality Questionnaire (HSPQ)** a 142-item self-report inventory of 14 personality dimensions in adolescents ages 12 to 18. The dimensions include warmth, intelligence, emotional stability, excitability, dominance, cheerfulness, conformity, boldness, sensitivity, withdrawal, apprehension, self-sufficiency, self-discipline, and tension. [developed in 1958 by psychologists Raymond B. CATTELL, Halla Beloff (1930– ), and Richard W. Coan (1928– )]

**high-technology assistive device** a device using complex electronics, such as a computerized communications system or a motorized wheelchair, to enhance the functional capabilities of individuals with disabilities. The device may require individualized adaptation and training. See ASSISTIVE TECHNOLOGY.

**high threshold** a threshold that is never exceeded unless a signal is present. Classical psychophysics assumes a high threshold, although some psychophysical models combine high thresholds with **low thresholds**, which can be exceeded by random NOISE.

**highway hypnosis** a colloquial name for accident proneness resulting from a state of drowsy inattention experienced during long-distance driving on monotonous roads.

**hilus** *n.* see DENTATE GYRUS.

**hindbrain** *n.* the posterior of three bulges that appear in the embryonic brain as it develops from the NEURAL TUBE. The bulge eventually becomes the MEDULLA OBLONGATA, PONS, and CEREBELLUM. Also called **rhombencephalon**.

**hindsight bias** the tendency, after an event has occurred, to overestimate the extent to which the outcome could have been foreseen. Hindsight bias stems from (a) cognitive inputs—people selectively recall information consistent with what they now know to be true; (b) metacognitive inputs—people may misattribute their ease of understanding an outcome to its assumed prior likelihood; and (c) motivational inputs—people have a need to see the world as orderly and predictable.

**Hindu caste system** see CASTE.

**Hinduism** *n.* the name, invented by Europeans, for the religion of the majority of the inhabitants of the Indian subcontinent. Indians who are not followers of the distinct teachings of Islam, Jainism, or Sikhism are generally referred to as **Hindus**. In India, the religious complex of such people is called *sanatana-dharma*, “the eternal religion,” because it has incorporated all aspects of truth for many centuries. As a religion based on mythology, it has neither a founder nor a fixed canon. Myriad local cults and traditions of worship or belief can be distinguished. Common to all Hindus, however, is the teaching of the law of KARMA. The three most significant devotional movements in present-day Hinduism are Vaishnavism, devoted to the god Vishnu; Shaivism, devoted to the god Shiva; and Tantrism, or Shaktism, devoted to the goddess Shakti. Tantrism is of particular interest in psychology in that Shakti is the personification of the fundamental creative force whose primary expression is the sexual energy that unites the polarity of male and female and brings forth new life.

**hinge** *n.* in EXPLORATORY DATA ANALYSIS, either of the scores in a data set that divide the lower 25% of cases (the

**lower hinge**) and the upper 25% of cases (the **upper hinge**) from the remainder of the cases.

**hippie (hippy)** *n.* a member of a 1960s and 1970s SUBCULTURE of mainly young people who rejected mainstream Western society and its values of work, consumerism, and material success in favor of an alternative lifestyle characterized by free love, communal living arrangements, and recreational drug use. The hippie philosophy was essentially one of pacifism and pleasure. See also COUNTERCULTURE; DRUG CULTURE; YOUTH CULTURE.

**hippocampal formation** a region of the brain located in the medial temporal lobe and concerned with the consolidation of long-term memory. It comprises the DENTATE GYRUS, HIPPOCAMPUS, and SUBICULUM and communicates with areas of neocortex via the ENTORHINAL CORTEX.

**hippocampal gyrus** see SUBICULUM.

**hippocampus** *n.* (*pl.* **hippocampi**) a seahorse-shaped part of the forebrain, in the basal medial region of the TEMPORAL LOBE, that is important for DECLARATIVE MEMORY and learning. Because of its resemblance to a ram's horn, 19th-century neuroanatomists named it **Ammon's horn (cornu ammonis; CA)** for the horn of the ram that represented the Egyptian deity Ammon. Parts of the hippocampus were then labeled **CA1**, **CA2**, **CA3**, and **CA4**; these designations are still used for the different regions of the hippocampus. See HIPPOCAMPAL FORMATION; PAPEZ CIRCUIT. —**hippocampal** *adj.*

**hippotherapy** *n.* the therapeutic use of horses to help people with physical and developmental disabilities improve their balance, coordination, posture, and mobility. During each 30-minute hippotherapy session, the client sits or lies on the horse, and a therapist evaluates and positively influences the client's neuromuscular responses to the animal's movement while an equine handler adjusts its gait, tempo, and direction. One or two sidewalkers next to the horse accompany the client for safety purposes. The therapists who conduct such sessions are specially trained physical, occupational, and speech and language therapists who offer hippotherapy as part of their broader, occupation-specific spectrum of activities. The handlers themselves are hippotherapy-certified. The therapy is most commonly used for people with autism, cerebral palsy, Down syndrome, multiple sclerosis, muscular dystrophy, spina bifida, spinal cord injury, stroke, and traumatic brain injury. In addition to its physical benefits, it often improves the client's affect, self-confidence, communication skills, spatial awareness, SENSORY INTEGRATION, and social interaction. Hippotherapy is distinct from EQUINE-ASSISTED PSYCHOTHERAPY, which uses horses to help clients achieve personal and relational change. See also ANIMAL-ASSISTED THERAPY.

**HIPS** abbreviation for Harvey Impostor Phenomenon Scale. See IMPOSTOR PHENOMENON.

**hircine** *adj.* in the ZWAARDEMAKER SMELL SYSTEM, denoting a quality that is smelled in goaty odors and rancid fat. See also CAPRYLIC.

**hired gun** a colloquial name for an expert witness who testifies in a manner that best suits his or her client, with little regard for any inaccuracies or misrepresentations of fact that might occur.

**HIS** abbreviation for healthcare information system. See INFORMATION SYSTEMS.

**Hispanic/Latino** *adj.* describing a person whose ances-

try, at least in part, can be traced to countries of Latin America or to Spain. The category Hispanic/Latino is racially diverse and thus is considered an ethnic category rather than a race.

**histamine** *n.* a compound that is synthesized from the amino acid histidine by the enzyme histidine decarboxylase. Most histamine in humans is localized in peripheral tissues, where it is involved in allergic reactions or the inflammatory response to injury, causing dilation of blood vessels. In the brain, histamine acts as a neurotransmitter to modulate such functions as arousal, appetite, and regulation of autonomic functions. **Histamine receptors** can be divided into three categories, designated  $H_1$ ,  $H_2$ , and  $H_3$  receptors. Many antidepressants and antipsychotics may block histamine receptors in the brain, causing sedation and other side effects.

**histamine antagonist** see ANTIHISTAMINE.

**histamine headache** see CLUSTER HEADACHE.

**histo-** (**hist-**) *combining form* tissue.

**histogenesis** *n.* the formation of body tissues.

**histogram** *n.* a graphical depiction of continuous data using bars of varying height, similar to a BAR GRAPH but with blocks on the *x*-axis adjoining one another so as to denote their continuous nature. For example, to show the average credit card debt of individuals, bars along the *x*-axis would represent amount of debt and would be connected to one another, while the heights of the bars would represent the number or frequency of individuals with each debt amount.

**histology** *n.* the scientific study of the microscopic structure and organization of body tissues. —**histological** *adj.* —**histologist** *n.*

**historical analysis** research that examines past events to understand current or future events. For example, researchers could perform a historical analysis of an individual's or a family's substance use experiences to understand the present substance use behavior of that person or group.

**historical control group** a CONTROL GROUP whose participants are selected to be similar to those in the treatment group on the basis of data collected sometime in the past.

**historical fallacy** an error of interpretation in which one reads into a process, either as a cause or an essential element, what only comes about as the result of the process. For example, a man has lost his wallet but can think of several places where he might have left it. When he finds it in the first place that he looks, he assumes falsely that he knew where the wallet was all along. His error is to suppose that a state of affairs arising from the process of looking (knowing where the wallet is) was in fact the cause of the process. The term was introduced by John DEWEY in his classic paper, "The Reflex Arc Concept in Psychology" (1896), where he argued that psychology was committing this fallacy in its attempts to isolate one set of events termed *responses* from another set termed *stimuli* and to show that the former result from the latter. See also REVERSE CAUSALITY.

**historical linguistics** the study of how language evolves and changes over time. See also COMPARATIVE LINGUISTICS; DIACHRONIC LINGUISTICS; GENETIC LINGUISTICS; PHILOLOGY.

**historical method** the technique of analyzing, counseling, or otherwise offering therapy by focusing on a client's personal history.

**historical prospective study** a research project that examines LONGITUDINAL DATA obtained in the past to track the incidence of a particular disorder over time and its association with various risk factors. For example, a researcher could examine the health records of smokers and nonsmokers to follow the path of an illness from before its manifestation through to its diagnosis and treatment. It is distinct from PROSPECTIVE RESEARCH generally, which begins with individuals who are apparently healthy in the present and moves forward to investigate whether a specific disorder will occur over time.

**historical psychoanalysis** see PSYCHOHISTORY.

**historical trauma** see INTERGENERATIONAL TRAUMA. [term introduced in 1988 by American Indian clinical social worker Maria Yellow Horse Brave Heart]

**historicism** *n.* **1.** the belief that the study of history can reveal general laws governing historical events and social and cultural phenomena and that these laws may allow for predictions of the future. **2.** the notion that beliefs, values, and cultural products are determined by their historical context and can only be understood in this context.

**history effect** the influence of events or circumstances outside an experiment on an outcome variable of interest. QUASI-EXPERIMENTAL RESEARCH often attempts to take history effects into account in order to rule out potential CONFOUNDING to a posited or apparent link between two variables. An example would be the occurrence of an actual earthquake during a field study of the effects of training in earthquake preparedness; this would likely increase news coverage of earthquakes, thereby resulting in greater knowledge dissemination outside of the training program.

**history taking** the process of compiling background information about a patient or research participant. Information can be obtained from the individual directly and from other sources, such as the individual's family, hospitals or clinics, psychiatrists or psychologists, neurologists, social workers, and others who have direct knowledge of the individual. See ANAMNESIS.

**histrionic personality disorder** in DSM-IV-TR and DSM-5, a personality disorder characterized by a pattern of long-term (rather than episodic) self-dramatization in which individuals draw attention to themselves, crave activity and excitement, overreact to minor events, experience angry outbursts, and are prone to manipulative suicide threats and gestures. Such individuals appear to others to be shallow, egocentric, inconsiderate, vain, demanding, dependent, and helpless. The disorder was formerly known as **hysterical personality disorder**.

**hit** *n.* the accurate identification of a signal in a signal detection task. Compare MISS.

**HIT** acronym for HOLTZMAN INKBLOT TECHNIQUE.

**hit rate** in signal detection tasks, the proportion of trials in which a signal is present and the participant correctly responds that it is.

**HIV** human immunodeficiency virus: a parasitic agent in blood, semen, and vaginal fluid that destroys a class of lymphocytes with a crucial role in the immune response. HIV infection can occur by various routes—unprotected sexual intercourse, administration of contaminated blood

products, sharing of contaminated needles and syringes by intravenous drug users, or transmission from an infected mother to her child in utero or through breast-feeding—and is characterized by a gradual deterioration of immune function that can progress to AIDS. The diagnosis of HIV infection remains stigmatizing in some cultures and can result in considerable emotional stress and social ostracism.

**HIV/AIDS counseling** see AIDS COUNSELING.

**HIV dementia** see AIDS DEMENTIA COMPLEX.

**hives** *n.* a temporary inflammation of the skin marked by outbreaks of burning and itching swellings. The condition may be caused by psychogenic factors or by an allergy, such as to a food. Also called **urticaria**.

**Hi-Wa itck** a CULTURE-BOUND SYNDROME found in Mohave American Indian populations that includes symptoms such as depression, insomnia, loss of appetite, and sometimes suicide associated with unwanted separation from a loved one; it generally affects the young wife of an older Mohave male.

**HLM** abbreviation for HIERARCHICAL LINEAR MODEL.

**HM** the initials of a patient, Henry Molaison (1926–2008), who became amnesic after undergoing bilateral temporal lobectomy in 1953 for the relief of intractable seizures. The case of HM, who was a patient of U.S. neurologist William Beecher Scoville (1906–1984), demonstrated the critical role of the HIPPOCAMPUS and surrounding structures in the process of memory formation and storage.

**hMG** abbreviation for HUMAN MENOPAUSAL GONADOTROPIN.

**HMO** *health maintenance organization*: a health plan that offers a range of services through a specified network of health professionals and facilities to subscribing members for a fixed fee. Members select a PRIMARY CARE PROVIDER who coordinates all care and authorizes all services. Services may need further approval from the HMO utilization program. The HMO is reimbursed through fixed, periodic prepayments (capitated rates) by, or on behalf of, each member for a specified period of time. HMOs may subcapitate, or CARVE OUT, certain services, such as mental health, to other groups. See CAPITATION.

**hoarding** *n.* **1.** the carrying and storing of food or other items believed necessary for survival, which has been identified as either instinctive behavior, learned behavior, or both. For example, hoarding by rodents varies with the environmental temperature, increasing when the temperature falls and decreasing as the temperature rises. See FOOD CACHING. **2.** a COMPULSION that involves the persistent collection of useless or trivial items (e.g., old newspapers, garbage, magazines) and an inability to organize or discard these. The accumulation of items (usually in piles) leads to the obstruction of living space, causing distress or impairing function. Any attempt or encouragement by others to discard hoards causes extreme anxiety. It is formally recognized as **hoarding disorder** in DSM–5, where it is listed in the same diagnostic category as OBSESSIVE-COMPULSIVE DISORDER and related disorders. See also CLUTTERING. —**hoard** *vb.*, *n.*

**hoarding orientation** in the existential psychoanalysis of Erich FROMM, a character pattern in which the individual doubts that personal needs can ever be completely satisfied and bases his or her sense of security on what he or she can save and own. The character is thought to be

rigid, stubborn, and obsessively orderly. Also called **hoarding character**. See also ANAL PERSONALITY. Compare EXPLOITATIVE ORIENTATION; MARKETING ORIENTATION.

**hoarseness** *n.* an abnormally rough, harsh, or strained quality in the voice that may be produced by any interference with optimal adduction of the vocal cords, including that caused by overuse of the voice, damage to the larynx, or such disorders as gastric reflux and thyroid disease.

**Hoffmann's sign** a sign of brain disease in individuals with HEMIPLEGIA: Flicking or nipping the nail of the second, third, or fourth finger will, if the reflex is present, cause a flexion in these fingers and the thumb. Also called **Hoffmann's reflex**. [Johann Hoffmann (1857–1919), German neurologist]

**hol-** *combining form* see HOLO-.

**hold functions** cognitive abilities—such as those involved in vocabulary and verbal knowledge—that typically remain stable throughout much of the adult lifespan or improve with aging, as observed on intellectual or cognitive tests (e.g., the WECHSLER ADULT INTELLIGENCE SCALE). Compare DON'T-HOLD FUNCTIONS.

**holding environment** **1.** in the OBJECT RELATIONS THEORY of British psychoanalyst Donald Winnicott (1896–1971), that aspect of the mother experienced by the infant as the environment that literally—and figuratively, by demonstrating highly focused attention and concern—holds him or her comfortingly during calm states. This is in contrast to the mother who is experienced as the object of the infant's excited states. **2.** in psychoanalysis, any therapeutic space that allows an emotionally fragile or insecure person to deal with affects that might potentially be overwhelming.

**holdover effect** see CARRYOVER EFFECT.

**holiday syndrome** the sadness, anxiety, and pessimism that often occur during major holiday periods. Severe depression, serious injuries, suicides, and fatal accidents tend to increase during these periods. Also called **holiday blues**.

**holism** *n.* any approach or theory holding that a system or organism is a coherent, unified whole that cannot be fully explained in terms of individual parts or characteristics. The system or organism may have properties as a complete entity or phenomenon in addition to those of its parts. Thus, an analysis or understanding of the parts does not provide an understanding of the whole. —**holistic** *adj.*

**holistic education** a form of psychotherapy, derived from the approach of HOLISTIC HEALTH, in which the therapist serves as a teacher and the client as student. The therapist aims to create conditions in which the student may choose to learn. For maximum growth, all aspects of the client's physical, spiritual, emotional, and intellectual life are explored and developed. [developed by U.S. psychologist William C. Schutz (1925–2002)]

**holistic healing** a health care concept based on the premise that body, mind, and spirit function as a harmonious unit and that an adverse effect on one also adversely affects the others, requiring treatment of the whole to restore the harmonious balance.

**holistic health** a concept that medical practice, in the prevention and treatment of disease, should focus on the whole person—including physical, mental, spiritual, social, and environmental aspects—rather than on disease

symptoms alone. Major features of holistic health include patient education about behavioral and attitudinal changes that promote and maintain good health and well-being, and patient self-help and participation in the healing process through diet, exercise, and other measures. It is often practiced in tandem with conventional medicine (e.g., medication, surgery) and with **COMPLEMENTARY AND ALTERNATIVE MEDICINE**. Also called **holistic medicine**.

**holistic psychology** an approach to psychology based on the view that psychological phenomena must be studied as wholes, or that individuals are biological, psychological, and sociocultural totalities that cannot be fully explained in terms of individual components or characteristics. Holistic psychology is not a specific school but a perspective that informs the theories, methodologies, and practice of certain approaches, such as **HUMANISTIC PSYCHOLOGY** and **CLIENT-CENTERED THERAPY**.

**Hollingshead scales** several measures of individual socioeconomic status based on education and occupation. They include the **Hollingshead Four-Factor Index of Social Status** and the earlier **Hollingshead Two-Factor Index of Social Position**. [August B. **Hollingshead** (1907–1980), U.S. sociologist]

**hollow-square puzzle** an exercise sometimes used in team-building interventions designed to enhance collaboration and communication. The task requires the group to assemble a model from various constituent pieces, some of which are shared among the group and some of which are held by individual group members.

**Holmes's phenomenon** see **REBOUND PHENOMENON**. [Gordon M. **Holmes** (1876–1965), British neurologist]

**Holmgren Test for Color Blindness** one of the first standardized tests for color blindness, which required the participant to match skeins of colored yarns with standard skeins. [devised in 1879 by A. Frithiof **Holmgren** (1831–1897), Swedish physiologist]

**holo-** (**hol-**) *combining form* entire or complete.

**hologram** *n.* an interference pattern that appears as a three-dimensional image of an object.

**holographic brain theory** a model of brain function suggesting that neuronal processes operate by means of fieldlike states of wave interference similar to holograms. Also called **holonomic brain theory**. [originated by Karl H. **PRIBRAM**]

**holography** *n.* a method of producing three-dimensional images by using interference patterns made by light waves. The technique is used in photography and has been suggested as an explanation for the process by which images may be formed in the mind. —**holographic** *adj.*

**holonomic brain theory** see **HOLOGRAPHIC BRAIN THEORY**.

**holophrase** *n.* one of the single-word utterances characteristic of children in the early stages of **LANGUAGE ACQUISITION**, such as *dada* or *yes*. These are considered to involve a **SPEECH ACT** going beyond the literal meaning of the single word so that, for example, *cookie* means *I want a cookie now*. See **RICH INTERPRETATION**. —**holophrastic** *adj.*

**holophrastic stage** see **ONE-WORD STAGE**.

**Holtzman Inkblot Technique (HIT)** a **PROJECTIVE TECHNIQUE** using two parallel forms of 45 inkblots that are scored based on 22 variables relating to perception and

personality. Used in both personality research and clinical assessment, the technique is similar to the **RORSCHACH INK-BLOT TEST** and was designed to overcome the psychometric limitations of that instrument. [developed in 1961 by U.S. psychologist Wayne H. **Holtzman** (1923– ) and colleagues]

**hom-** *combining form* see **HOMO-**.

**HOME** acronym for **HOME OBSERVATION FOR MEASUREMENT OF THE ENVIRONMENT**.

**home and community-based services (HCBS)** care or services provided in a patient's place of residence or in a noninstitutional setting located in the community. The aim is to help individuals of all ages with disabilities to live in the community, thereby avoiding more costly residential placements. In the United States, the primary means by which such services are funded is the **Home and Community-Based Services Waiver** (or **Medicaid Waiver**) program. Through this waiver, the federal government reimburses states for a percentage of their spending on designated community services, such as **DAY HABILITATION**, **RESIDENTIAL HABILITATION**, and service coordination. These services are defined in a flexible manner; they can be tailored to the specific needs of individuals enrolled in the waiver, allowing appropriate services to be provided to people with greatly varying requirements.

**home-based reinforcement** an intervention in which a teacher provides notes about a student's inappropriate classroom behavior or poor academic performance to his or her parents, who in turn use rewards (e.g., tangible items, earned privileges, verbal praise) and sanctions (e.g., **TIME OUT**, loss of privileges) to encourage positive change. Research has shown that numerous benefits arise from parents and teachers working together in this way: Students tend to earn higher grades, perform better on tests, attend school more regularly, have better behavior, and show more positive attitudes toward themselves and toward school.

**home cage** a cage in which a nonhuman animal is housed when it is not engaged in an experimental session.

**home care** patient care in the home for people with physical or mental disabilities, including older adults with dementia or bodily weakness. Home care is an alternative to institutionalization, enabling the patient to live in familiar surroundings and preserve family ties. Services such as nursing care, administration of medication, therapeutic baths, physical therapy, and occupational therapy are provided by visiting professionals or paraprofessionals connected with clinics, hospitals, or health agencies. Also called **home health care**.

**home health aide** a specially trained person who works with a **SOCIAL SERVICES** agency or a local **VISITING NURSE** association to provide personal care services, such as bathing, light meal preparation, and dressing, to people with disabilities. See also **HOMEMAKER HOME HEALTH AIDE**.

**home health care** see **HOME CARE**.

**homelessness** *n.* the condition of being without a permanent residence due to economic inability or mental or physical incapacity to maintain a residence, housing shortages, barriers to accessing adequate, affordable housing, or any combination of these and other factors. Occurring in towns and smaller communities as well as major cities, homelessness is a complex social problem with no single explanation for its occurrence. Contributing factors tend to



be categorized as structural or individual. Structural causes relate to large-scale societal issues, such as unemployment and poverty, the housing market, and the general state of the economy. Individual causes are more personal or interpersonal, such as illness, recent incarceration, or family conflict. Research has shown that homeless people have higher rates of substance abuse, mental disorders (e.g., depression, anxiety, schizophrenia), cognitive deficits, and behavioral difficulties as well as poor self-esteem and poor SELF-EFFICACY. Disabilities and various medical conditions (e.g., cardiorespiratory disease, diabetes, sexually transmitted disease) are common as well. Some of these factors are also among the potential consequences of homelessness. Other effects include discrimination and social rejection, increased vulnerability to trauma or violent crime (e.g., assault), and greater likelihood of premature death.

**homemaker home health aide** a HOME HEALTH AIDE who assists people with disabilities in homemaking tasks, personal care, and rehabilitation routines in their own homes, through a private or public agency.

**homeo-** *combining form* similar or like.

**Home Observation for Measurement of the Environment (HOME)** a measure of the quality and extent of stimulation available to a child in the home environment. It is available in four versions: infant/toddler (birth to 3 years), early childhood (3–6 years), middle childhood (6–10 years), and early adolescent (10–15 years). Each version contains both observational and parent-reported items that provide a detailed analysis of characteristics of the home (parental responsiveness, play materials, etc.) that are hypothesized to be associated with a child's cognitive development. Originally published in 1967, the HOME was revised in 1984. [developed by U.S. childcare specialist Bettye M. Caldwell (1924– ) and U.S. educational psychologist Robert H. Bradley (1946– )]

**homeopathy** *n.* a system of medicine based on the belief that “like cures like.” Small, highly diluted quantities of substances are given to cure symptoms when the same substances given at higher or more concentrated doses would actually cause those symptoms. Homeopathy is considered a form of COMPLEMENTARY AND ALTERNATIVE MEDICINE. Compare ALLOPATHY. [first given practical application by German physician Christian Friedrich Samuel Hahnemann (1755–1843)] —**homeopathic** *adj.*

**homeostasis** *n.* **1.** the regulation by an organism of all aspects of its INTERNAL ENVIRONMENT, including body temperature, salt–water balance (see OSMOREGULATION), acid–base balance (see HYDROGEN-ION CONCENTRATION), and blood sugar level. This involves monitoring changes in the external and internal environments by means of RECEPTORS and adjusting bodily processes accordingly. Compare TENSION LAW. [first described by Walter B. CANNON] **2.** maintenance of a stable balance, evenness, or symmetry. —**homeostatic** *adj.*

**homeostatic principle** in social psychology, the principle that individuals have a need to maintain or restore an optimal level of environmental, interpersonal, and psychological stimulation. Insufficient or excessive stimulation is theorized to cause tension that often prompts the behavior required to achieve optimal stimulation levels. For example, if an individual experiences excessive solitude, he or she will seek out others to restore the desired balance with

his or her need for companionship. The principle is analogous to the biological concept of HOMEOSTASIS.

**homeotherm (homoiotherm)** *n.* see ENDOTHERM. —**homeothermic** *adj.* —**homeothermy** *n.*

**home range** the entire space through which a nonhuman animal moves during its normal activities. The space may or may not be defended from other members of the same species. The part of the home range in which the greatest activity occurs is known as the CORE AREA. Home range (or **secondary territory**) differs from primary territory (see TERRITORIALITY), which is an actively defended specific area, and from PERSONAL SPACE, which is the defended space that moves with an individual.

**home schooling** **1.** formal instruction of a student in his or her home or other private setting, often by one or both parents or by a tutor. Instruction must meet the preset requirements of a school district, a state, or both. **2.** education in a home environment of one family's children or a group of unrelated children.

**home-service agency** a group (e.g., a public health, social service, or voluntary organization) that provides HOME HEALTH AIDES or HOMEMAKER HOME HEALTH AIDES for people with mental or physical disabilities. The personnel generally are paraprofessionals who are recruited, trained, and supervised by another agency, such as a VISITING NURSE association or a hospital with a home-care unit.

**homesickness** *n.* a feeling of intense sadness and longing caused by absence from one's home or native land. See also NOSTALGIA. —**homesick** *adj.*

**home visit** a visit to an individual at home by a professional or paraprofessional, such as a psychologist, physician, nurse, social worker, or rehabilitation therapist, for crisis intervention, aftercare, or other assistance in solving personal problems.

**homework** *n.* tasks assigned to a client to be performed between sessions of therapy. Assignments may require reading, research, or practicing new behaviors (e.g., attending a lecture, speaking to a specific person).

**homicide** *n.* the killing of one person by another person. In a legal context, homicide is often subdivided into excusable homicide (as in self-defense or resulting from an accident), justifiable homicide (as in carrying out a death sentence), and felonious homicide (as in murder or manslaughter). —**homicidal** *adj.*

**homicidomania** *n.* a mental or emotional disturbance characterized by a desire to kill others, often including actual attempts to do so.

**homicidophilia** *n.* sexual interest and arousal obtained from murder. In the extreme form, this PARAPHILIA results in what are called LUST MURDERS, or cases of murder and rape. Less extreme cases may consist of the use of murder fantasies or murder-related pornographic materials during masturbation. Compare AUTASSASSINOPHILIA.

**homing** *n.* the ability of individuals to return to an original home after traveling or being transported to a point that is a considerable distance from the home and that lacks most visual clues as to its location. In an animal-homing experiment, banded Manx shearwaters were transported 3,050 miles from their native Isle of Man, off the west coast of England, to North America; released separately, they returned to their burrows on the island within 13 days. See also NAVIGATION.

**hominid** *n.* a primate of the family Hominidae, of which humans (*Homo sapiens*) are the only living species.

**homo-** (**hom-**) *combining form* **1.** same or like. [from Greek *homos*, “one and the same”] **2.** human being. [from Latin *homo*, “man”]

**homocystinuria** *n.* a genetic metabolic disorder characterized by a deficiency of an enzyme needed to convert L-homocystine to L-cystathionine. Intellectual disabilities often occur, along with a shuffling, ducklike gait and, in some instances, seizures or hemiplegia. Brain abnormalities are often due to arterial or venous thromboses. Also called **cystathionine synthetase deficiency**.

**homoeroticism** *n.* an erotic desire for people of one's own sex. Also called **homoerotism**. Compare HETEROEROTICISM. —**homoerotic** *adj.*

**homogametic** *adj.* referring to the sex that has two similar SEX CHROMOSOMES, such as the female sex in mammals and the male sex in birds. Compare HETEROGAMETIC.

**homogamy** *n.* a marriage between partners from similar ethnic, racial, religious, educational, or socioeconomic backgrounds. Compare HETEROGAMY.

**homogeneity** *n.* **1.** equality or near equality, particularly between two statistical quantities of interest. The term most often is used in connection with different populations. For example, homogeneity of means would be present in a ONE-WAY ANALYSIS OF VARIANCE if the average values of the population groups being investigated were the same. Compare HETEROGENEITY. **2.** see LINEAR SYSTEM.

**homogeneity of cognitive function** in stage theories of cognitive development, such as Jean PIAGET's, the assumption that a child's mental processes (e.g., problem solving) are relatively homogeneous, or similar, across different tasks and contexts.

**homogeneity of covariance** the condition in which multiple groups in an experimental design have the same COVARIANCE MATRIX. A basic assumption in a MULTIVARIATE ANALYSIS OF VARIANCE, it is the multivariate analog of HOMOGENEITY OF VARIANCE.

**homogeneity of variance** the statistical ASSUMPTION of equal variance, meaning that the average squared distance of a score from the mean is the same across all groups sampled in a study. This condition must be fulfilled in statistical methods that use a single term to represent how widely scores vary across groups, as with ANALYSIS OF VARIANCE, MULTIPLE REGRESSION analysis, and other procedures. Also called **equality of variance; homoscedasticity**. Compare HETEROGENEITY OF VARIANCE.

**homogeneous** *adj.* having the same, or relatively similar, composition throughout. Compare HETEROGENEOUS.

**homogeneous group** an aggregate of individuals or other elements that are similar to one another in a number of significant respects. In a social context, for example, a homogeneous group might include members who are the same age or have the same socioeconomic background, values, work experience, education, and so on. In educational contexts, a homogeneous group may be an entire class or a smaller group formed within a class and based on similar ability in a specific area (e.g., mathematics). Compare HETEROGENEOUS GROUP.

**homogenitality** *n.* an interest in the genitalia of one's own sex.

**homograph** *n.* one of two or more words that are written in exactly the same way but have unrelated meanings. For example, *row* meaning *linear arrangement* and *row* meaning *argument* are homographs. Compare HOMONYM; HOMOPHONE. —**homographic** *adj.*

**homolateral** *adj.* on the same side of the body. —**homolaterally** *adv.*

**homologous** *adj.* **1.** exhibiting resemblance based on common ancestry (see HOMOLOGU). **2.** describing chromosomes that are identical in terms of their visible structure and location of gene segments, although they may carry different ALLELES. DIPLOID organisms, such as humans, possess homologous pairs of chromosomes (see AUTOSOME) in the nuclei of their body cells. See also RECOMBINATION. **3.** describing any segment of a nucleic acid (DNA or RNA) or protein whose sequence of, respectively, bases or amino acids is similar to that of another segment.

**homology** *n.* a similarity of form in bodily structures of species that are descended from a common ancestor, such as the resemblance among forelimbs of vertebrates. Compare HOMOPLASY. See also ANALOGY. —**homologous** *adj.*

**homonym** *n.* one of two or more words that are written or pronounced (or both) in the same way but are unrelated in meaning. For example, *cape* meaning *promontory* and *cape* meaning *garment* are homonyms. Compare HOMOGRAPH; HOMOPHONE.

**homonymous hemianopia** the loss of sight in the same half of the visual field of each eye (i.e., the left half of the visual field of both the left and right eyes, or vice versa) caused by injury to the postchiasmatic visual system (see POSTCHIASMATIC VISUAL DEFECT). See also HEMIANOPIA.

**homonymous paracentral scotoma** see PARACENTRAL SCOTOMA.

**homonymous quadranopia** see QUADRANTANOPIA.

**homonymous reflex** a reflex in which stimulation of a muscle produces a contraction of the same muscle. Compare HETERONYMOUS REFLEX.

**homophile** *n.* a person who loves others of his or her own sex—that is, a gay man or a lesbian.

**homophily** *n.* **1.** the tendency for individuals who are socially connected in some way to display certain affinities, such as similarities in demographic background, attitudes, values, and so on. **2.** the degree of similarity between individuals who share social ties. See also BIRDS-OF-A-FEATHER PHENOMENON. Compare HETEROPHILY.

**homophobia** *n.* dread or fear of gay men and lesbians, associated with prejudice and anger toward them, that leads to discrimination in such areas as employment, housing, and legal rights and sometimes to violence (**gay bashing**). Extreme homophobia may lead to murder.

**homophone** *n.* one of two or more words that are pronounced in exactly the same way but have unrelated meanings and may have different spellings. For example, *whole* and *hole* are homophones. Compare HOMOGRAPH; HOMONYM. —**homophonic** *adj.*

**homoplasY** *n.* a similarity of form in bodily structures of species that are not descended from a common ancestor (e.g., the body forms of a tuna and a dolphin). This superficial resemblance often arises through the process of CONVERGENT EVOLUTION because the species live in the

same environment. Compare **HOMOLOGY**. See also **ANALOGY**. —**homoplastic** *adj.*

**homoscedasticity** *n.* see **HOMOGENEITY OF VARIANCE**. —**homoscedastic** *adj.*

**homosexual behavior** sexual acts, such as mutual genital caressing, cunnilingus, fellatio, and anal intercourse, practiced between people of the same sex, whether or not they identify themselves as gay.

**homosexual community** the gay and lesbian people in a particular country, region, or city, especially when regarded as having their own meeting places, customs, linguistic expressions, organizations, and so on. Use of this term is increasingly considered outdated, and the abbreviation **LGBTQ** is preferred instead.

**homosexuality** *n.* sexual attraction or activity between members of the same sex. Although the term can refer to homosexual orientation in both men and women, current practice distinguishes between gay men and lesbians, and homosexuality itself is now commonly referred to as **same-sex sexual orientation** or **activity**. —**homosexual** *adj., n.*

**homosexual love** a relationship with a member of one's own sex involving the full range of erotic, emotional, and sexual feelings.

**homosexual marriage** see **SAME-SEX MARRIAGE**.

**homosexual panic** a sudden, acute anxiety attack precipitated by (a) the unconscious fear that one might be gay or lesbian or will act out gay or lesbian impulses, (b) the fear of being sexually attacked by a person of the same sex, or (c) loss of or separation from a same-sex partner. Also called **Kempf's disease**. [first proposed in 1921 by U.S. psychiatrist Edward J. Kempf (1885–1971)]

**homosexual rights movement** see **GAY LIBERATION**.

**homovanillic acid (HVA)** the end product of the catabolism of the neurotransmitter dopamine, produced by the action either of catechol-*O*-methyltransferase (COMT) on 3,4-dihydroxyphenylacetic acid (DOPAC) or of aldehyde dehydrogenase on 3-methoxy-4-hydroxyphenylacetaldehyde (MHPA). Levels of homovanillic acid are typically reduced in individuals with Parkinson's disease.

**homozygous** *adj.* possessing identical forms of a gene (i.e., identical **ALLELES**) at a given genetic locus on each of a pair of **HOMOLOGOUS** chromosomes. Either autosomal dominant (see **DOMINANT ALLELE**) or autosomal recessive (see **RECESSIVE ALLELE**) conditions are expressed when the individual is homozygous for that condition. Compare **HETEROZYGOUS**. —**homozygote** *n.*

**homunculus** *n.* (*pl.* **homunculi**) **1.** a putative process or entity in the mind or the nervous system whose operations are invoked to explain some aspect of human behavior or experience. The problem with such theories is that the behavior or experience of the homunculus usually requires explanation in exactly the same way as that of the person as a whole. As a result, homunculus theories tend to end in **CIRCULAR REASONING**. For example, to explain its theory that certain ideas are kept from conscious awareness because they are threatening to the person, psychoanalysis must posit some specialized part of the person that is aware of the ideas and knows that they are threatening. Similarly, some information-processing theories invoke a "decision-making process" to explain the making of decisions. Both theories invoke a sophisticated level of inner awareness or processing in an attempt to explain another

outward level of awareness or processing. For this reason, critics would say that they require homunculi, or that they commit the **homunculus fallacy**. **2.** in neuroanatomy, a figurative representation, in distorted human form, of the relative sizes of motor and sensory areas in the brain that correspond to particular parts of the body. For example, the brain area devoted to the tongue is much larger than the area for the forearm, so the homunculus has a correspondingly larger tongue. See **MOTOR HOMUNCULUS**; **SENSORY HOMUNCULUS**. **3.** a completely formed minute human figure (Latin, "little man") thought by some 16th- and 17th-century theorists to exist in the spermatozoon and simply to expand in size during the transition from zygote to embryo to infant to adult. This idea is an example of **PREFORMISM** and is contrary to the epigenetic principle of cumulative development and successive differentiation. —**homuncular** *adj.*

**honestly significant difference test** see **TUKEY'S HONESTLY SIGNIFICANT DIFFERENCE TEST**.

**honest signal** among nonhuman animals, a signal that provides accurate information about an individual's internal state or its intentions. Although some theorists argue that communication should be deceptive or manipulative to ensure survival, honest signals have value if they are highly correlated with a physical trait (e.g., body size) that might, for example, provide important information for mate selection or if they are used within a stable social group where **DISHONEST SIGNALS** can be detected and "liars" punished. See **HANDICAP PRINCIPLE**.

**honesty** *n.* **1.** in general, truthfulness, uprightness, and integrity. **2.** in psychotherapy, the ability of an individual to express true feelings and communicate immediate experiences, including conflicting, ambivalent, or guilt-ridden attitudes. —**honest** *adj.*

**honesty test** see **INTEGRITY TESTING**.

**hookup** *n.* a type of sexual encounter in which the participants have no expectation of continuing or developing their relationship beyond the sexual encounter. Hookups can involve strangers or individuals who are well acquainted with each other in a nonsexual way; a friend with whom a person is hooking up but not dating is often referred to as a **friend with benefits**. Hookups have become a popular means for satisfying sexual desires among many young adults, likely reflecting growing reluctance to enter committed relationships; however, they represent a risk factor for sexually transmitted diseases.

**Hooper Visual Organization Test (VOT)** a trade name for a test in which line drawings of familiar objects are cut up into pieces and then shown to a participant to mentally reorganize them and name the objects. The test was originally developed as a screening instrument for neurological dysfunction but subsequently has been used as a test of visuospatial skills. [developed by H. Elston Hooper, U.S. psychologist]

**ho'oponopono** *n.* in Hawaiian culture, a type of group process, similar to family therapy, in which the 'OHANA or a similar group addresses its personal and family problems in order to restore harmony within the group.

**Hoover's sign** a diagnostic test for neurological (as distinct from psychological) **HEMIPLEGIA** in which the individual in a reclining position attempts to raise the paralyzed leg: An individual with true hemiplegia reflexively presses down the heel of the healthy leg during the test. The ab-

sence of the downward movement is a positive Hoover's sign and suggests psychogenic PARESIS or malingering. [Charles Franklin **Hoover** (1865–1927), U.S. physician]

**hope** *n.* the expectation that one will have positive experiences or that a potentially threatening or negative situation will not materialize or will ultimately result in a favorable state of affairs. Hope has been characterized in the psychological literature in various ways, including as a CHARACTER STRENGTH; an emotion; a component of motivation that is critical to goal attainment; a mechanism that facilitates coping with loss, illness, and other significant stresses; or an integrated combination of these features. See also OPTIMISM. —**hopeful** *adj.*

**hopelessness** *n.* the feeling that one will not experience positive emotions or an improvement in one's condition. Hopelessness is common in severe MAJOR DEPRESSIVE EPISODES and other DEPRESSIVE DISORDERS and is often implicated in suicides and attempted suicides. —**hopeless** *adj.*

**Hopkins Symptom Checklist (HSCL)** a 58-item self-report inventory designed to identify symptom patterns along five dimensions—obsessive-compulsive behavior, anxiety, depression, somatization, and interpersonal sensitivity—which are combined to yield a total distress score. See also SYMPTOM CHECKLIST-90–REVISED. [developed at The Johns **Hopkins** University in the 1950s]

**Hopkins Verbal Learning Test (HVLt)** a standardized brief individual test used to assess verbal learning and memory (specifically, immediate recall, delayed recall, and delayed recognition) in individuals ages 16 years and older. The examiner reads aloud 12 nouns, and participants must first repeat them (both immediately and 25 minutes following their presentation) and then identify them from among a verbally presented list of DISTRACTOR words. Originally published in 1991, the HVLt subsequently was revised in 2001 (**HVLt–R**). [developed by U.S. medical psychologist Jason Brandt (1954– ) and U.S. clinical psychologist Ralph H. B. Benedict (1960– ) at The Johns **Hopkins** University]

**horde** *n.* a large, usually mobile group, particularly a nomadic CLAN.

**horizontal career move** a career move involving a change in functional area or expertise but not a promotion to a higher level of authority.

**horizontal cell** see RETINAL HORIZONTAL CELL.

**horizontal communication** the exchange of written or spoken messages among employees occupying positions at the same level of authority in an organization. Compare DOWNWARD COMMUNICATION; UPWARD COMMUNICATION.

**horizontal décalage** in PIAGETIAN THEORY, the invariant order in which accomplishments occur within a particular stage of development. For example, an understanding of CONSERVATION of quantity is always achieved before understanding conservation of weight, which is achieved before understanding conservation of volume. Compare VERTICAL DÉCALAGE.

**horizontal group** a group composed of people from the same SOCIAL CLASS. Compare VERTICAL GROUP.

**horizontal job enlargement** see JOB ENLARGEMENT.

**horizontal loading** see JOB ENLARGEMENT.

**horizontal mobility** the movement of individuals or groups from one position or role to another within the

same social class. Compare VERTICAL MOBILITY. See also SOCIAL MOBILITY.

**horizontal plane** an imaginary flat surface that divides the body or brain into upper and lower parts. Also called **transverse plane**.

**horizontal section 1.** in imaging, a theoretical “slice” of a body or an organ (e.g., the brain) in a plane perpendicular to the dorsal–ventral axis. **2.** a thin slice of tissue for microscopic study that has been cut at an angle perpendicular to the dorsal–ventral axis of the organ. A horizontal section may also be taken of an entire organ for gross examination (e.g., a horizontal section of an entire brain).

**horizontal transmission** host-to-host transmission of infection, as contrasted with **vertical** (or **transplacental**) **transmission**, in which the infection is passed from one generation to the next.

**horizontal–vertical illusion** the misperception that vertical lines are longer than horizontal lines when both are actually the same length. The vertical element of an upper case letter *T*, for example, looks longer than the cross bar, even when the lengths are identical. See also FORESHORTENING; HELMHOLTZ SQUARE ILLUSION.

**hormic psychology** a school of psychology originating in the 1920s that emphasizes goal seeking, striving, and foresight, with instincts serving as the primary motivation for behavior. It is particularly concerned with explaining social psychological phenomena in terms of INSTINCTIVE BEHAVIOR. See also PURPOSIVE PSYCHOLOGY; SOCIOBIOLOGY; TELEOLOGY. [introduced by William MCDUGALL]

**hormone** *n.* a substance secreted into the bloodstream by an ENDOCRINE GLAND or other tissue or organ to regulate processes in distant target organs and tissues. These secretions include those from the anterior and posterior PITUITARY GLAND; the CORTICOSTEROIDS and EPINEPHRINE, secreted by the adrenal glands; and the SEX HORMONES released by the reproductive glands. Other organs that secrete hormones include the hypothalamus (see HYPOTHALAMIC HORMONE) and the stomach, which emits at least five: CHOLECYSTOKININ, ENTEROGASTRONE, GASTRIN, GHRELIN, and SECRETIN. —**hormonal** *adj.*

**hormone feedback** a FEEDBACK SYSTEM in which the output of hormones is regulated by other circulating hormones, which have positive or negative effects. During the follicular phase of the MENSTRUAL CYCLE, for example, estrogen has a positive effect on the hypothalamus, increasing the secretion of GONADOTROPIN-RELEASING HORMONE and hence the secretion of pituitary GONADOTROPINS, which stimulate ovulation.

**hormone replacement therapy (HRT) 1.** the administration of sex hormones either to relieve menopausal symptoms in women or to increase testosterone levels in men. For women, the use of HRT, usually with an estrogen (see ESTROGEN REPLACEMENT THERAPY) or a combined estrogen–progestin preparation, is controversial, since long-term use may increase the risk of breast cancer, cardiovascular disease, stroke, and other conditions associated with the aging process. For men, HRT with testosterone is used to treat hypogonadism. Its efficacy in increasing sex drive in men with lower testosterone levels due to normal aging or as a treatment for erectile dysfunction is inconclusive. **2.** the administration of any other hormone to treat a hormone deficiency, such as thyroid hormone to treat hypothyroidism.

**Horner effect** see FEAR OF SUCCESS. [Matina Horner (1939– ), U.S. psychologist]

**Horner's law** the principle that red–green color blindness is a genetic disorder transmitted indirectly from male to male through a female. [Johann Friedrich Horner (1831–1886), Swiss ophthalmologist]

**Horner's syndrome** a condition characterized by partial ptosis (drooping of the upper eyelid), miosis (excessive constriction of the pupil), and often anhidrosis (absence of sweating) on the same half of the face. Congenital or acquired, it is caused by damage to the PONS region of the brainstem. There may be lack of coordination in eye movements (SACCADES and SMOOTH-PURSUIT EYE MOVEMENTS). Also called **oculosympathetic paralysis**. [Johann Horner]

**horopter** *n.* the location in space occupied by points that fall on corresponding locations on the two retinas. See also PANUM'S FUSIONAL AREA; VIETH–MÜLLER CIRCLE.

**horoscope** *n.* **1.** in ASTROLOGY, a chart showing the relative position of the planets and the signs of the zodiac at the time of a person's birth, used to infer that person's character and to predict his or her future. **2.** a short-term forecast of a person's future based on the current position of the planets relative to his or her sign of the zodiac, especially as published in newspapers and magazines.

**horseradish peroxidase (HRP)** an enzyme found in horseradish and other plants that is used as a tracer, for example, to determine the neurons from which a particular set of axons originates.

**horseshoe crab** a marine arthropod with very large COMPOUND EYES useful for experimental investigations of the physiology of vision because its neurons are large and activity is easily recorded. Also called **limulidae**.

**horticultural therapy** the use of gardening as an auxiliary intervention for therapeutic or rehabilitational purposes. It is typically used for individuals with physical or mental illness or disability but may also be used to improve the social, educational, psychological, and physical well-being of older adults as well as those recovering from injury. Also called **horticulture therapy**.

**hospice** *n.* a place or a form of care for terminally ill individuals, often those with life expectancies of about half a year as determined by medical personnel. Instead of curing disease and prolonging life, the emphases of the hospice concept are patient comfort, psychological well-being, and pain management (see PALLIATIVE CARE). The approach is interdisciplinary, with care provided by medical, psychological, spiritual, volunteer, and family caregivers, either in special facilities or in the patient's home. See also TERMINAL CARE. [pioneered by British nurse, social worker, and physician Cicely Saunders (1918–2005)]

**hospitalism** *n.* in infants, lack of psychomotor response or failure to gain weight or produce purposeful behavior, often thought to be a response to separation from mothers and subsequent institutionalization. See also REACTIVE ATTACHMENT DISORDER.

**hospitalitis** *n.* the state of mind of patients who are so dependent psychologically on hospital life that their symptoms suddenly recur when they are about to be discharged.

**hospitalization** *n.* **1.** the placement of an individual in a hospital or mental health facility for treatment. **2.** the period during which a patient is confined to a hospital or

mental health facility. See also INVOLUNTARY HOSPITALIZATION; READMISSION.

**hospital phobia** a persistent and irrational fear of hospitals, classified in *DSM–IV–TR* and *DSM–5* as a form of SPECIFIC PHOBIA, situational type.

**hostile aggression** see AGGRESSION.

**hostile attribution bias** a general tendency to ascribe harmful or otherwise adverse intent to the ambiguous behavior of others. For example, a child who insists that another child bumped into her on the school playground on purpose when the action in fact was accidental is demonstrating a hostile attribution bias, as is an employee who claims his name was deliberately left off the distribution list for a recent memo despite coworker assurances that the error was inadvertent. This cognitive distortion is associated with such phenomena as aggression, conduct disorders, narcissism, and EXTERNALIZATION. [first described in 1979 by personality psychologist William Nasby, clinical psychologist Brian C. Hayden, and social psychologist Bella M. DePaulo]

**hostile–detached marriage** an unstable marriage in which there are short but malicious disagreements between the partners.

**hostile–engaged marriage** an unstable marriage in which the partners have long and frequent arguments without the balance of love and humor found in long-lasting VOLATILE MARRIAGES.

**hostile witness** an individual who is either unwilling to testify in court or exhibits hostility or bias against the party conducting the direct examination. If the court recognizes a person to be a hostile witness, the counsel conducting the examination is permitted to ask leading questions. See also ADVERSE WITNESS.

**hostile work environment** a situation in which the workplace is made intimidating, abusive, or offensive to an employee as a consequence of another's conduct within it (e.g., inappropriate comments, remarks, or gestures; unwanted sexual attention) or because of characteristics of the setting (e.g., displays of distasteful, insulting, or otherwise inappropriate material). See also MERITOR SAVINGS BANK V. VINSON; QUID PRO QUO; SEXUAL HARASSMENT.

**hostility** *n.* the overt expression of intense animosity or antagonism in action, feeling, or attitude. —**hostile** *adj.*

**hostility displacement** the direction of hostility or aggression to a target other than the agent responsible for provoking this behavior. Conventional accounts typically state that the target is selected because there is no anticipation of punishment for the attack. According to the classic analysis of Neal E. MILLER, the strength of the urge to displace hostility is related to the target's association with the perceived source of provocation. See FRUSTRATION–AGGRESSION HYPOTHESIS.

**hot cognition** a mental process whereby emotion influences reasoning. Compare COLD COGNITION. [introduced in 1963 by U.S. social psychologist Robert P. Abelson (1928–2005)]

**hot-deck imputation** one of several methods of inserting values for missing data (see IMPUTATION) in which missing observations or data points are replaced by values from similar responses in the sample at hand. Suppose that a patient survey was conducted in two hospitals, A and B, and that five people from Hospital A failed to respond to an

item of the survey. Sampling five values from the respondents who did respond to that item at Hospital A and substituting these values for the missing observations is an example of a hot-deck imputation. Compare COLD-DECK IMPUTATION.

**Hotelling's  $T^2$  test** a MULTIVARIATE ANALYSIS OF VARIANCE used to test the significance of the mean difference between two groups in their scores or outcomes on multiple dependent variables. An extension of the univariate T TEST, it is applicable to only two groups, rather than three or more groups. Also called **Hotelling's  $T^2$ ; T-squared test**. [Harold Hotelling (1895–1973), U.S. mathematician]

**hot flash** a typical menopausal symptom caused by decreased levels of estrogen and experienced as a sudden rush of heat to the neck, face, and sometimes other parts of the body that may last from 30 seconds to 5 minutes. It may begin with a sudden tingling in the fingers, toes, cheeks, or ears, and in some women it is followed by a sensation of cold. Fifty percent of women experience hot flashes around the time of menopause.

**hothousing** *n.* the acceleration of young children's academic skills through instruction designed to increase academic achievement. Some theorists believe that hothousing is equivalent to hurrying children and that it is therefore maladaptive to normal development.

**hotline** *n.* a telephone line maintained by trained personnel for the purpose of providing a crisis intervention service. See TELEPHONE COUNSELING.

**hot plate** an apparatus used in studies of heat or pain sensitivity. A nonhuman animal (usually a rat or a mouse) is placed on top of an electrically heated plate, the temperature of which is controlled by the experimenter. The time that elapses before the animal raises its front paws off the plate at a given temperature is used as an index of sensitivity to heat or pain.

**hot-seat technique** a technique of GESTALT THERAPY in which a client sits in a chair next to the therapist, who encourages the client through direct prompting and questioning to relive stressful experiences and openly express feelings of discomfort, guilt, or resentment. The technique aims to generate a new, more vivid awareness, which leads the client to find his or her own solutions to problems or emotional difficulties. In a group therapy variation of the hot-seat technique, an individual member expresses to the therapist an interest in dealing with a particular issue, and the focus moves away from the group into an extended interaction between the group member and therapist for a limited period of time. During this one-on-one interaction, the other group members remain silent; afterward, they give feedback on how they were affected, what they observed, and how their own experiences are similar to those the individual member discussed.

**houelight** *n.* a small light bulb or bulbs used to provide continuous low-level illumination of a CONDITIONING APPARATUS.

**Hovland model** see MESSAGE-LEARNING APPROACH.

**HPA** abbreviation for HYPERPHENYLALANINEMIA.

**HPA axis** abbreviated name for HYPOTHALAMIC–PITUITARY–ADRENAL AXIS.

**HR** abbreviation for HUMAN RESOURCES.

**HRNB** abbreviation for HALSTEAD–REITAN NEUROPSYCHOLOGICAL BATTERY.

**HRP** abbreviation for HORSERADISH PEROXIDASE.

**H–R–R plates** abbreviation for HARDY–RAND–RITTLER PSEUDOISCHROMATIC PLATES.

**HRSD** abbreviation for HAMILTON RATING SCALE FOR DEPRESSION.

**HRT** abbreviation for HORMONE REPLACEMENT THERAPY.

**HRTF** abbreviation for HEAD-RELATED TRANSFER FUNCTION.

**HSCL** abbreviation for HOPKINS SYMPTOM CHECKLIST.

**HSD test** abbreviation for honestly significant difference test. See TUKEY'S HONESTLY SIGNIFICANT DIFFERENCE TEST.

**HSI** abbreviation for HUMAN SYSTEMS INTEGRATION.

**hsieh-ping** *n.* a CULTURE-BOUND SYNDROME observed in China and Taiwan, characterized by temporary trancelike states in which the individual supposedly becomes possessed by ancestral spirits. It is often accompanied by tremors, disorientation, delirium, and visual or auditory hallucinations.

**HSM** abbreviation for HEURISTIC-SYSTEMATIC MODEL.

**HSPQ** abbreviation for HIGH SCHOOL PERSONALITY QUESTIONNAIRE.

**H spread** see INTERQUARTILE RANGE.

**5-HT** abbreviation for 5-hydroxytryptamine. See SEROTONIN.

**5-HTP** abbreviation for 5-HYDROXYTRYPTOPHAN.

**5-HTTLPR** abbreviation for serotonin transporter–linked polymorphism region. See SEROTONIN TRANSPORTER.

**hubris** *n.* arrogant pride or presumption. In Greek tragedy, hubris is specifically the overweening pride that leads to the destruction of the protagonist. —**hubristic** *adj.*

**HUD** abbreviation for HEAD-UP DISPLAY.

**hue** *n.* the subjective quality of color, which is determined primarily by wavelength and secondarily by amplitude.

**Hull's mathematico-deductive theory of learning** a mathematical system of learning based on classical and instrumental conditioning with numerous postulates and corollaries to explain various behaviors. There is major emphasis on NEED REDUCTION as a condition of learning, the building up of HABIT STRENGTH by contiguous reinforcement, EXTINCTION brought about by nonreinforced repetition of responses, and forgetting as a process of decay with the passage of time. [Clark L. HULL]

**human channel capacity** the limit on the amount of information that may be processed simultaneously by the human information-processing system.

**human chorionic gonadotropin** a hormone, produced by the human placenta, that maintains the activity of the CORPUS LUTEUM during pregnancy. Its presence or absence in the urine is used as a basis for pregnancy testing. See also GONADOTROPIN.

**human courtship** see COURTSHIP.

**human ecology** in sociology, the study of the relationship between human beings and their physical and social environments. See also ECOLOGICAL STUDY; ECOLOGICAL SYSTEMS THEORY; SOCIAL ECOLOGY; URBAN ECOLOGY.

**human engineering** the design of environments and equipment that promote optimum use of human capabilities.

ties and optimum safety, efficiency, and comfort. See also **ENGINEERING PSYCHOLOGY**; **HUMAN FACTORS ENGINEERING**.

**human error** an error in the operation of a **HUMAN-MACHINE SYSTEM** resulting from human action or inaction (see **ERROR OF COMMISSION**; **ERROR OF OMISSION**), as opposed to mechanical failures or faults in product or system design. Although human error can never be entirely eradicated, good design will minimize both its occurrence and its consequences (see **EXCLUSION DESIGN**; **FAIL-SAFE**).

**human factors 1.** in **ERGONOMICS**, the impact of human beings, with their characteristic needs, abilities, and physical and mental limitations, on system function. **2.** the considerations to be made when designing, evaluating, or optimizing systems for human use, especially with regard to safety, efficiency, and comfort. See also **HUMAN SYSTEMS INTEGRATION**. **3.** particularly in the United States, a common synonym of **ERGONOMICS**.

**human factors engineering** an interdisciplinary field concerned with the design, maintenance, operation, and improvement of operating systems in which human beings are components, such as industrial equipment, automobiles, health care systems, transportation systems, recreational facilities, consumer products, and the general living environment. This term is often used synonymously with **ENGINEERING PSYCHOLOGY**. See also **ENGINEERING ANTHROPOMETRY**; **ERGONOMICS**; **HUMAN ENGINEERING**; **SYSTEMS ENGINEERING**.

**human factors psychology** a branch of psychology that studies the role of **HUMAN FACTORS** in operating systems, with the aim of redesigning environments, equipment, and processes to fit human abilities and characteristics. See **HUMAN ENGINEERING**. See also **ERGONOMICS**; **SOCIOTECHNICAL SYSTEMS APPROACH**.

**Human Genome Project** an international project to map each human gene and determine the complete sequence of base pairs in human DNA. The project began in 1990 and was completed in 2003. It has yielded vast amounts of valuable information about the genes responsible for various diseases, which may lead to the development of effective genetic screening tests and, possibly, treatments. However, controversy surrounds the attempts by some biotechnology companies to patent certain human DNA sequences with the potential for commercial exploitation. See also **ELSI PROGRAM**.

**human-growth movement** see **HUMAN-POTENTIAL MOVEMENT**.

**human immunodeficiency virus** see **HIV**.

**human information storage** the process in which the mind, conceived as being analogous to a computer, codes external information into a form that can be remembered, manipulated, and retrieved.

**humanism** *n.* **1.** a perspective that begins with a presumption of the inherent dignity and worth of humankind and, as a scholarly or artistic discipline, focuses attention on the study and representation of human beings and human experiences. The roots of Western humanism lie in the Renaissance period, when those who studied the classical Greek and Roman languages and writings became known as humanists. **2.** any position taken in opposition to religious belief or other forms of supernaturalism. See **SECULAR HUMANISM**. **3.** in psychology, any perspective that seeks to uphold human values and to resist the reduction of human beings and behaviors to merely natural objects

and events. In this spirit, **HUMANISTIC PSYCHOLOGIES** have resisted not only natural scientific psychology but also theories that emphasize the negative and pathological aspects of human nature. In psychology, the term *humanism* is often applied to theories and perspectives in the tradition of Carl ROGERS and Abraham MASLOW or to those inspired by **PHENOMENOLOGY** and **EXISTENTIALISM**. —**humanist** *adj.*, *n.* —**humanistic** *adj.*

**humanistic communitarian socialism** an ideal political system proposed by Erich FROMM in which humane values would underlie the socioeconomic structure. The goal of humanistic communitarian socialism is a non-exploitative society, composed of small communities rather than large governmental or corporate entities, in which all members develop to their maximum ability, are self-regulating, and contribute fully as individuals and citizens.

**humanistic conscience** the type of conscience that is guided by individual standards and not by fear of external authority. Compare **AUTHORITARIAN CONSCIENCE**. [defined by Erich FROMM]

**humanistic-existential therapy** see **EXISTENTIAL-HUMANISTIC THERAPY**.

**humanistic perspective** the assumption in psychology that people are essentially good and constructive, that the tendency toward **SELF-ACTUALIZATION** is inherent, and that, given the proper environment, human beings will develop to their maximum potential. The humanistic perspective arose from the contributions of Gordon W. ALLPORT, Abraham MASLOW, and Carl ROGERS, who advocated a personality theory based on the study of healthy individuals as opposed to people with mental disorders.

**humanistic psychology** an approach to psychology that flourished between the 1940s and the early 1970s and that is most visible today as a family of widely used approaches to psychotherapy and counseling. It derives largely from ideas associated with **EXISTENTIALISM** and **PHENOMENOLOGY** and focuses on individuals' capacity to make their own choices, create their own style of life, and actualize themselves in their own way. Its approach is holistic, and its emphasis is on the development of human potential through experiential means rather than the analysis of the unconscious or the modification of behavior. Leading figures associated with this approach include Abraham MASLOW, Carl ROGERS, and Rollo MAY. Also called **humanistic theory**. See also **FULFILLMENT MODEL**; **HUMAN-POTENTIAL MOVEMENT**.

**humanistic therapy** any of a variety of psychotherapeutic approaches that reject psychoanalytic and behavioral approaches; seek to foster personal growth through direct experience; and focus on the development of human potential, the **HERE AND NOW**, concrete personality change, responsibility for oneself, and trust in natural processes and spontaneous feeling. Some examples of humanistic therapy are **CLIENT-CENTERED THERAPY**, **GESTALT THERAPY**, **EXISTENTIAL PSYCHOTHERAPY**, and **EXPERIENTIAL PSYCHOTHERAPY**.

**humanity** *n.* compassion in one's personal relations with specific others, shown by kindness, nurturance, charity, and love.

**human-machine system** in ergonomics, any system with interdependencies between human operators, machines, and processes. Also called **man-machine system**; **person-machine system**.

**human menopausal gonadotropin (hMG)** a mixture of FOLLICLE-STIMULATING HORMONE and LUTEINIZING HORMONE extracted from the urine of postmenopausal women for stimulating ovulation in other women undergoing either assisted conception or treatment for infertility due to deficiency of pituitary GONADOTROPINS. The concentrations of gonadotropins are high in postmenopausal women in response to decreased output of estrogens at menopause.

**human nature** the generally innate but flexible characteristics of humankind as a whole, comprising the set of behaviors, attitudes, and dispositions that typify the human race. The concept of human nature has been rejected by several schools of modern thought, notably MARXISM, FEMINISM, and POSTMODERNISM. See also ESSENTIALISM; UNIVERSALISM.

**humanoid** *adj.*, *n.* see ANDROID.

**human operator modeling** the practice of using qualitative or quantitative tools to illustrate the behavior, mental processes, or both of human operators when performing tasks. The use of physical or computer models for this purpose is known as **human operator simulation**. Physical simulations involve the use of robotic or remote-controlled operators in actual or realistic task environments. Computer simulations use a variety of parameters to test different scenarios and explore outcomes. Human operator modeling is used to describe, explain, or predict behavior under a variety of task and environmental conditions. See also MODEL HUMAN PROCESSOR.

**human-potential model** a psychological approach in education that emphasizes the importance of helping learners to achieve the maximum development of their potential in all aspects of their functioning. It is derived from the basic tenets of HUMANISTIC PSYCHOLOGY. See also HUMANISTIC PERSPECTIVE.

**human-potential movement** an approach to psychotherapy and psychology that emphasizes personal growth, interpersonal sensitivity, and greater freedom and spontaneity in living. The ideas of German-born U.S. psychiatrist Frederick (Fritz) S. Perls (1893–1970) were an influential force in the development of the human-potential movement, which derives its general perspective from HUMANISTIC PSYCHOLOGY. GESTALT THERAPY, SENSITIVITY TRAINING, and ENCOUNTER GROUPS are representative of this approach. Also called **human-growth movement**.

**human relations** see INTERPERSONAL RELATIONS.

**human relations theory** a general approach to management that emphasizes the importance of employee attitudes, interpersonal relationships, GROUP DYNAMICS, and LEADERSHIP STYLES in achieving ORGANIZATIONAL EFFECTIVENESS. In human relations theory, considerate, participative leaders who are skilled in communicating with employees are held to achieve better results than authoritarian leaders. See HAWTHORNE EFFECT.

**human relations training** techniques designed to promote awareness in an individual of the feelings and needs of others and to foster constructive interactions. See also SENSITIVITY TRAINING; T-GROUP.

**human resources (HR)** **1.** the individuals and groups whose KNOWLEDGE, SKILLS, ABILITIES, AND OTHER CHARACTERISTICS enable an organization to achieve its objectives. **2.** the department of an organization concerned with re-

cruiting, training, and appraising employees and with any issues relating to their welfare. Also called **personnel**.

**human strength** see CHARACTER STRENGTH.

**human-system coupling** in ergonomics, the extent to which operator and system are interdependent. A highly automated system requires a lower degree of coupling than a manual system.

**human systems integration (HSI)** an area of research that investigates the means by which knowledge about the cognitive and physiological requirements for optimal human task performance (e.g., attention, decision making, biomechanics) can be translated into the effective design of complex technologies used to support that performance. The focus of research is primarily on advanced computer-based systems (e.g., those used in air traffic control) and specifically on their effects on the people using them and the efficacy of their design features (e.g., alarm signals, visual interfaces, automation) in supporting efficient, safe operations, particularly during high-risk situations. See ERGONOMICS; HUMAN FACTORS.

**human trafficking** see TRAFFICKING.

**human-vehicle interface** the junction between the human operator and the functions of a vehicle. It includes all components of the control panel.

**humidity effects** the effects of the amount of moisture in the air on one's perception of ambient temperature. High humidity makes hot weather uncomfortable because it diminishes the cooling efficiency of air movement to evaporate heat from the body.

**humiliation** *n.* a feeling of shame as a result of being disgraced or deprecated. The feeling sometimes leads to severe depression and deterioration of the individual's sense of SELF-ESTEEM. Humiliation of a partner is frequently found in relationships characterized by sexual sadism and sexual masochism.

**humility** *n.* the quality of being humble, characterized by a low focus on the self, an accurate (not over- or underestimated) sense of one's accomplishments and worth, and an acknowledgment of one's limitations, imperfections, mistakes, gaps in knowledge, and so on.

**humor** *n.* **1.** the capacity to perceive or express the amusing aspects of a situation. There is little agreement about the essence of humor and the reasons one laughs or smiles at jokes or anecdotes. Among philosophers, both Plato (c. 427–c. 347 BCE) and Thomas HOBBS claimed that individuals laugh at people and situations that make them feel superior, whereas Immanuel KANT emphasized surprise and anticlimax: "the sudden transformation of a strained expectation to nothing." U.S. writer Max Eastman (1883–1969) saw humor as "playful pain," a way of taking serious things lightly and thereby triumphing over them. Sigmund FREUD called attention to the many jokes (especially those having to do with sex and hostility) that enable individuals to give free expression to forbidden impulses and explained laughter in terms of a release of the energy normally employed in keeping them out of consciousness. See also INCONGRUITY THEORY OF HUMOR; RELEASE THEORY OF HUMOR. **2.** the semifluid substance that occupies the spaces in the eyeball. See AQUEOUS HUMOR; VITREOUS HUMOR. **3.** in antiquity, one of four bodily fluids (blood, black bile, yellow bile, and phlegm) that were thought to be responsible for a person's physical and psychological characteristics (see HUMORAL THEORY). This belief accounts for



the use of the word *humor* to mean *mood*, as in *good humor*, or *whim*, as in *It is her humor*. —**humoral** *adj.* —**humorous** *adj.*

**humoral immunity** see IMMUNE RESPONSE.

**humoral reflex** a reflex that involves secretion of a hormone.

**humoral theory** a former theory that explained physical and psychological health or illness in terms of the state of balance or imbalance of various bodily fluids. According to Greek physician Hippocrates (5th century BCE), health was a function of the proper balance of four humors: blood, black bile, yellow bile, and phlegm (the **classical humors** or **cardinal humors**). This idea was also used to explain temperament: A predominance of blood was associated with a SANGUINE TYPE; black bile with a MELANCHOLIC TYPE; yellow bile or choler with a CHOLERIC TYPE; and phlegm with a PHLEGMATIC TYPE. GALEN did much to preserve and promulgate this explanatory approach, which survived well into the 17th century. Humoral theory provides psychology with its earliest personality typology, as well as an early model of the relation between bodily and psychological states.

**hunger** *n.* the sensation caused by a need for food. Traditional conceptualizations viewed hunger as resulting from imbalances in HOMEOSTASIS and food intake as necessary to maintain in the body an optimum balance of carbohydrates, fats, proteins, minerals, vitamins, and other nutrients. Contemporary theories, however, largely consider hunger to be initiated by the gradual disappearance of the inhibitory effects generated from the previous meal, such that hunger does not need to be stimulated but rather is always present and more or less masked depending on meal recency. See SATIETY. See also APPETITE; MALNUTRITION.

**hunger center** see FEEDING CENTER.

**hunger drive** an arousal state induced by food deprivation, precipitating food-seeking behavior. See also SPECIFIC HUNGER.

**Hunger Winter** see DUTCH HUNGER WINTER.

**Hunter syndrome** an X-linked recessive disease in which there is an excess of mucopolysaccharides in body tissues (see MUCOPOLYSACCHARIDOSIS). Almost exclusively affecting males, the disorder has two types, severe and attenuated. People with the severe type experience a decline in intellectual function and a rapid disease progression with short life expectancy. Individuals with the attenuated type typically live into adulthood and their intelligence is not affected. Heart disease and airway obstruction are major causes of death in people with both types of the disorder. Also called **mucopolysaccharidosis Type II**. [Charles Hunter (1872–1955), U.S. physician]

**hunting behavior** the pursuit of other animals for food or sport. Hunting behavior may include other forms of behavior, such as stalking, running after moving objects, or use of concealment or camouflage. In chimpanzees and social carnivores (e.g., wolves and lions), there is evidence of cooperative hunting behavior, which appears to be coordinated among several individuals.

**Huntington's disease (HD)** a progressive hereditary disease associated with degeneration of nerve cells, particularly in the caudate nucleus of the BASAL GANGLIA and in the CEREBRAL CORTEX. It is characterized by abnormalities of gait and posture, motor incoordination, and involuntary jerking motions (CHOREA) as well as DEMENTIA, mood dis-

turbances, and personality and behavioral changes. The age of onset is usually between 30 and 50, but there is a juvenile form of the disease in which symptoms first appear before the age of 20. Huntington's disease is inherited as an autosomal dominant trait (see DOMINANT ALLELE); the single gene responsible is located on chromosome 4. Also called **Huntington's chorea**. [George Huntington (1850–1916), U.S. physician]

**Hurler syndrome** an autosomal recessive disease marked by mucopolysaccharide levels in tissues more than 10 times normal (see MUCOPOLYSACCHARIDOSIS), combined with elevated levels of polysaccharides and GARGOYLISM. Mental development begins normally but slows after the early months and reaches a plateau around 2 years of age. The child may learn a few words but not sentences, and toilet training is seldom achieved. Also called **Pfaundler–Hurler syndrome**; **mucopolysaccharidosis Type I**. [Gertrud Hurler (1889–1965), Austrian pediatrician]

**Hutchinson–Gilford progeria syndrome** see AGING DISORDER. [Jonathan Hutchinson (1828–1913), British surgeon; Hastings Gilford (1861–1941), British physician]

**HVA** abbreviation for HOMOVANILLIC ACID.

**HVLT** abbreviation for HOPKINS VERBAL LEARNING TEST.

**hwa-byung** *n.* a CULTURE-BOUND SYNDROME specific to Korea and characterized by a range of symptoms that are attributed to the suppression of anger (Korean, literally: “anger disease”). Symptoms include a feeling of a mass in the throat, chest, or abdomen, a sensation of heat in the body, headaches, palpitations, indigestion, insomnia, fatigue, panic, dysphoria, fear of impending death, anorexia, generalized aches and pains, and poor concentration. Also called **suppressed anger syndrome**; **wool-hwa-byung**.

**hyaline membrane disease** see RESPIRATORY DISTRESS SYNDROME.

**hyalophagia** *n.* the eating of glass, typically a symptom of PICA.

**hybrid** *n.* **1.** in genetics, the product of crossbreeding genetically dissimilar plants or animals. See HYBRIDIZATION. **2.** in molecular biology, a double helix formed of NUCLEIC ACIDS from different sources.

**hybridization** *n.* the interbreeding of individuals with different genetic traits. Depending on the nature of the genes involved, HYBRIDS might display traits of one or the other parent or some combination of parental traits. Hybridization is used in animal behavior studies as a method of evaluating the genetic transmission of behavior. —**hybridize** *vb.*

**hybrid vigor** increased vitality and other favorable qualities arising from crossbreeding genetically different plants or animals. Also called **heterosis**.

**hybristophilia** *n.* sexual interest in and attraction to those who commit crimes. In some cases, this may be directed toward people in prison for various types of criminal activities.

**hydantoin** *n.* any of a group of drugs developed primarily to control epileptic seizures. They were introduced in 1938 after careful studies of chemicals capable of suppressing electroshock convulsions without also causing adverse effects on the central nervous system. Hydantoin molecules are similar in structure to barbiturates but have

the advantage of not altering the threshold for minimal seizures. The prototype of the hydantoin is PHENYTOIN (previously called diphenylhydantoin). Other hydantoin include **mephenytoin** (U.S. trade name: Mesantoin) and **ethotoin** (U.S. trade name: Peganone), but these are rarely used.

**hydration** *n.* the act or process of accumulating or combining with water. For example, hydration occurs in body cells when sodium intake increases. Compare DEHYDRATION.

**hydraulic model** any physiological or psychological model based on the analogy of fluid flowing through a system under pressure, such that pressure may build up in the system and seek release. Sigmund FREUD's model of the LIBIDO as an energy that can build pressure and seek release (CATHARSIS) is a notable example. A more literal use of the hydraulic model was the erroneous concept of the nervous system introduced in the early 17th century by René DESCARTES, who believed that nerves were tubes through which ANIMAL SPIRITS flowed from the brain to the muscles. According to this model, habits were formed when repeated use of the nerve tubes caused them to become distended and blocked.

**hydro- (hydr-)** *combining form* water or fluid.

**hydrocephalus** *n.* a condition caused by accumulation of cerebrospinal fluid in the ventricles of the brain, resulting in raised INTRACRANIAL PRESSURE, with symptoms such as headache, vomiting, nausea, poor coordination, gait imbalance, urinary incontinence, slowing or loss of development, lethargy, drowsiness, irritability, or changes in personality or cognition, including memory loss. Hydrocephalus commonly occurs as a congenital anomaly or due to obstruction of cerebrospinal fluid from head injury, brain tumor, or hemorrhage. The pressure can sometimes be relieved by surgery, in which the excess fluid is permanently shunted into the bloodstream. In infants, hydrocephalus often produces enlargement of the skull. Also called **hydrocephaly**. —**hydrocephalic** *adj.*

**hydrocodone** *n.* a mild to moderately potent orally administered OPIOID ANALGESIC used in the treatment of moderate to moderately severe pain. It is more effective when combined with ACETAMINOPHEN or an NSAID (e.g., aspirin) and is generally marketed in combination with such agents. It is also often marketed in combination with a cough suppressant for the symptomatic relief of cough due to colds or nasal congestion. U.S. trade names (among others): **Detussin** (in combination with pseudoephedrine); **Vicodin** (in combination with acetaminophen).

**hydrocortisone** *n.* see CORTISOL.

**hydrogen-ion concentration** a measure of the acidity or alkalinity of a substance. When acid and alkaline substances dissociate in water, hydrogen ions ( $H^+$ ) and hydroxyl ions ( $OH^-$ ) are released. Acidity and alkalinity are associated with the relative concentrations of  $H^+$ . The hydrogen-ion concentration can be measured using the pH scale, on which values represent the negative logarithm of the  $H^+$  ion concentration. Thus, the greater the excess of  $H^+$  ions, the lower the pH value. A pH of 0 represents the greatest possible excess of  $H^+$  ions, or a "pure" acid. At the other extreme, a pH of 14 represents the maximum degree of alkalinity. A pH of 7 represents a neutral solution. Human body fluids have an average pH of about 7.4, that is, slightly alkaline. If the pH rises above 7.8 or falls below 6.8, enzymes and other biochemical substances in the

body malfunction (see ACIDOSIS; ALKALOSIS). See also HOMEOSTASIS.

**hydrophobia** *n.* **1.** a persistent and irrational fear of water, resulting in avoidance of activities involving water, such as swimming, drinking, or washing one's hands. **2.** a former name for RABIES. —**hydrophobic** *adj.*

**hydrotherapy** *n.* the therapeutic use of water to promote recovery from disease or injury. Hydrotherapy includes such treatments as baths, streams of water (douches), and aquatic sports or exercise.

**6-hydroxydopamine (6-OHDA)** *n.* a dopamine analog used in nonhuman animal studies for its ability to destroy catecholamine-containing nerve cell bodies. 6-OHDA does not cross the blood-brain barrier, but when administered into the central nervous system, it causes permanent degeneration of catecholamine-containing neurons. Destruction of dopamine-containing neurons in the NIGROSTRIATAL TRACT with 6-OHDA results in symptoms that clinically resemble Parkinson's disease.

**5-hydroxyindoleacetic acid (5-HIAA)** the main metabolic product of SEROTONIN. Some individuals with depression have low levels of 5-HIAA in the cerebrospinal fluid and exhibit a preferential response to CLOMIPRAMINE.

**5-hydroxytryptamine (5-HT)** *n.* see SEROTONIN.

**5-hydroxytryptophan (5-HTP)** *n.* a naturally occurring precursor of the neurotransmitter SEROTONIN. It is produced from the essential amino acid tryptophan (see TRYPTOPHAN HYDROXYLASE) and is converted in the brain to 5-hydroxytryptamine, or serotonin. Administration of 5-HTP increases the production of serotonin in the brain, and the agent is being investigated for potential use in the treatment of certain forms of MYOCLONUS (severe muscle spasms). 5-HTP is currently available as a dietary supplement for the relief of conditions including headache, depression, fibromyalgia, and CEREBELLAR ATAXIA (causing difficulty in standing and walking) and for appetite suppression. However, reports of a serious, potentially fatal reaction (eosinophilia-myalgia syndrome) have led to cautions regarding its use as a natural remedy.

**hydroxyzine** *n.* a sedating antihistamine of the DIPHENYLMETHANE class. It is used for the relief of pre- and post-operative pain, obstetric pain, anxiety, dermatitis, and vomiting. Although also appropriate for the management of alcohol withdrawal, it is rarely used for this purpose in modern clinical practice. Hydroxyzine has significant ANTI-CHOLINERGIC EFFECTS. U.S. trade names: **Atarax**; **Vistaril**.

**hygiene** *n.* **1.** the science of health and how to maintain it. **2.** a condition or practice that promotes cleanliness and good health. —**hygienic** *adj.* —**hygienist** *n.*

**hygiene factors** in the TWO-FACTOR THEORY OF WORK MOTIVATION proposed by U.S. clinical psychologist Frederick Herzberg (1923–2000), certain aspects of the working situation that can produce discontent if they are poor or lacking but that cannot by themselves motivate employees to improve their job performance. These include pay, relations with peers and supervisors, working conditions, and benefits. Compare MOTIVATORS.

**hylozoism** *n.* the view that all material objects have some degree or quality of life. Some equate this view with PANPSYCHISM, which holds that all matter possesses some attributes of psyche. Others make the distinction that to possess the quality of life is not necessarily to be possessed of soul or sentience.

**hymen** *n.* a thin membrane that partly covers the opening to the vagina at birth. Although the hymen is sometimes not broken until the first experience of sexual intercourse, it may rupture at or before puberty; thus, its absence is not a reliable sign of loss of virginity. —**hymenal** *adj.*

**hyoscine** *n.* see SCOPOLAMINE.

**hyp-** *combining form* see HYPO-.

**hyacusia** *n.* see HYPOACUSIA.

**hyalgnesia** *n.* see HYPOALGESIA.

**hyper-** *prefix* **1.** above or beyond (e.g., HYPERCOLUMN). **2.** extreme or excessive (e.g., HYPERESTHESIA).

**hyperactivity** *n.* a condition characterized by spontaneous gross motor activity or restlessness that is excessive for the age of the individual. Although a prominent feature of ATTENTION-DEFICIT/HYPERACTIVITY DISORDER, it is not diagnostic of any particular disorder and must be correlated with other findings to identify the appropriate diagnosis. See also PURPOSELESS HYPERACTIVITY. —**hyperactive** *adj.*

**hyperacusis** *n.* unusually acute hearing and a lowered tolerance for loud sounds. Also called **hyperacusia**.

**hyperaggressivity** *n.* an increased tendency to express anger and hostility in action, as in violent and assaultive behavior. See also EXPLOSIVE PERSONALITY.

**hyperaldosteronism** *n.* see ALDOSTERONE.

**hyperalgesia** *n.* an abnormal sensitivity to pain. The effect occasionally results from development of new nerve endings in skin areas that have been severely injured. Also called **hyperalgia**.

**hyperarousal** *n.* **1.** one of three sets of criteria used to diagnose POSTTRAUMATIC STRESS DISORDER and ACUTE STRESS DISORDER. Symptoms of hyperarousal include exaggerated startle response, disturbed sleep, difficulty in concentrating or remembering, and excessive vigilance. **2.** a physiological response to stress. Also called **acute stress response**. See also FIGHT-OR-FLIGHT RESPONSE. [first described by Walter B. CANNON]

**hyperbulimia** *n.* inordinate appetite and excessive intake of food. It is observed, for example, in certain psychological disorders and in patients with hypothalamic lesions. See also BULIMIA; HYPERPHAGIA. —**hyperbulimic** *adj.*

**hypercalcemia** *n.* high concentrations of calcium in the blood.

**hypercathexis** *n.* in psychoanalytic theory, an excess of PSYCHIC ENERGY invested in an OBJECT. Compare HYPOCATHESIS. See CATHEXIS.

**hypercholesterolemic xanthomatosis** see XANTHOMATOSIS.

**hypercolumn** *n.* a repeating subdivision of STRIATE CORTEX (primary visual cortex) that contains a full set of ORIENTATION COLUMNS and a pair of OCULAR DOMINANCE COLUMNS. Thus, the population of neurons in one hypercolumn includes those responsive to all orientations, as viewed through either eye. A hypercolumn occupies an area of about 1 mm<sup>2</sup> on the cortical surface.

**hypercomplex cell** a neuron in the visual cortex for which the optimal stimulus is a moving line of specific length or a moving corner. See also END-STOPPED CELL. [first described in 1965 by U.S. neurophysiologist David Hubel

(1926–2013) and Swedish neurophysiologist Torsten Wiesel (1924– )]

**hypercorrection** *n.* in linguistics, the use of an incorrect form or pronunciation in a mistaken belief that this is more formal or correct than the one generally used. Hypercorrection usually arises from false analogy, half-remembered rules learned in childhood, or an exaggerated fear of using nonstandard or lower-class forms. Common examples in English are the incorrect use of *whom* rather than *who* in, for example, *Whomever is responsible for this*, and the use of *I* rather than *me* in, for example, *She was referring to you and I*.

**hypercritical** *adj.* having an excessive tendency to scrutinize and find fault.

**hyperemia** *n.* the presence of an increased amount of blood in a part of the body. In some parts, this condition causes a flushed appearance. See also BLUSHING.

**hyperesthesia** *n.* extreme sensitivity in any of the senses, especially abnormal sensitivity to touch. —**hyperesthetic** *adj.*

**hyperexcitability** *n.* a tendency to overreact to stimuli, often occurring during a MANIC EPISODE. —**hyperexcitable** *adj.*

**hyperfunction** *n.* excessive activity of a body function, part, or organ.

**hypergenitalism** *n.* excessive development of the genital system.

**hypergeusia** *n.* a heightened sensitivity to taste. See SUPERTASTER. —**hypergeusic** *adj.*

**hyperglycemia** *n.* an excess of glucose in the blood. In diabetes mellitus, hyperglycemia results from a relative or absolute lack of the insulin needed to remove the excess glucose from the blood. Signs range from pain or sensory loss to failure of reflexes and coma. —**hyperglycemic** *adj.*

**hyperhedonia** *n.* a pathological increase in the feeling of pleasure derived from any act or event. Compare ANHEDONIA; HYPHEDONIA.

**hyperhidrosis** *n.* excessive sweating, which may occur under various circumstances and is not necessarily related to environmental, physical, or psychological factors. In severe cases, the skin in the affected areas may become macerated and vulnerable to infections. Also called **hyperidrosis**.

**hypericin** *n.* a psychoactive compound that is thought to be the most pharmacologically active agent in ST. JOHN'S WORT.

**Hypericum perforatum** see ST. JOHN'S WORT.

**hyperingestion** *n.* excessive intake of food, fluid, or drugs through the mouth, particularly when intake is greater than the maximum safe level.

**hyperkinesis** *n.* **1.** excessive involuntary movement. **2.** restlessness or HYPERACTIVITY. Also called **hyperkinesia**. —**hyperkinetic** *adj.*

**hyperkinesthesia** *n.* a high level of sensitivity in the SOMATOSENSORY SYSTEM (e.g., to touch, weight, pressure, motion and position of the body). See also KINESTHESIS; PROPRICEPTION. Compare HYPOKINESTHESIA.

**hyperkinetic syndrome** an old name for ATTENTION-DEFICIT/HYPERACTIVITY DISORDER.

**hyperlexia** *n.* the development of extremely good reading skills at a very early age, well ahead of word comprehension or cognitive ability. Children with hyperlexia often start to recognize words without instruction and before any expressive language develops. Hyperlexia is usually found in the context of cognitive and language deficits or certain developmental disorders; some children with AUTISM, for example, may show hyperlexia. [first defined in 1967 by Norman E. Silberberg (1932–2007) and Margaret C. Silberberg] —**hyperlexic** *adj.*

**hyperlipidemia** *n.* the presence in the blood of excessive amounts of lipids (e.g., cholesterol, triglycerides), which may predispose a person to atherosclerosis.

**hyperlordosis** *n.* see LORDOSIS.

**hypermania** *n.* an extreme manic state marked by constant activity, erratic behavior, disorientation, and incoherent speech. See also LETHAL CATATONIA. —**hypermanic** *adj.*

**hypermetria** *n.* overreaching an object during voluntary motor activity. This can be caused by impaired visual localization, defective visuomotor coordination, or a disorder that interferes with the execution of eye or hand movements. See also DYSMETRIA; OCULAR DYSMETRIA. Compare HYPOMETRIA.

**hypermnnesia** *n.* **1.** an extreme degree of retentiveness and recall, with unusual clarity of memory images. In forensic contexts, eyewitnesses have demonstrated increased recall after undergoing hypnotic induction to help retrieve memories, but such memories have been ruled inadmissible in some U.S. courts (see STATE V. MACK). **2.** in memory testing, a net increase in the total number of items recalled from one test to another. Hypermnnesia usually occurs when information is repeatedly tested in close succession. A net decrease in the total number of items recalled is called FORGETTING. See REMINISCENCE.

**hypermobile testes** testes that move between the scrotum and the abdominal cavity, usually because of an inguinal hernia that has not been corrected. The testes may descend into the scrotum when the environment is warm, as when taking a hot bath, but retract into the abdominal cavity when the body is exposed to cold.

**hypermotility** *n.* abnormally increased or excessive activity or movement, particularly in the digestive tract. The cholinergic nervous system dominates the upper portion of the gastrointestinal tract, whereas the adrenergic system controls the lower portion. Gastrin and serotonin stimulate digestive-tract motility, whereas secretin and glucagon inhibit contractions. Hypermotility is associated with gastric neuropathy, colitis, and IRRITABLE BOWEL SYNDROME.

**hyperobesity** *n.* a state of being extremely overweight, sometimes defined as weighing in excess of 45 kg (100 lb) above the accepted ideal body weight for one's height, age, and body build. See also MORBID OBESITY. —**hyperobese** *adj.*

**hyperopia** *n.* farsightedness. Hyperopia is a REFRACTIVE ERROR due to an abnormally short eyeball, which causes the image of close objects to be blurred because the focal point of one or both eyes lies behind, rather than on, the retina. Compare EMMETROPIA; MYOPIA.

**hyperorexia** *n.* a pathologically increased appetite. See also BULIMIA. Compare HYPOREXIA.

**hyperosmia** *n.* abnormally acute sensitivity to ODORANTS. Compare HYPOSMIA.

**hyperphagia** *n.* pathological overeating, particularly when due to a metabolic disorder or to a brain lesion. Compare HYPOPHAGIA. —**hyperphagic** *adj.*

**hyperphenylalaninemia (HPA)** *n.* an abnormally high level of phenylalanine metabolites in the blood, which is characteristic of PHENYLKETONURIA and may be present even after successful dietary management of this disorder. See also MATERNAL PKU.

**hyperphilia** *n.* sexual arousal by and response to a particular activity or type of stimulus that is above the normal range.

**hyperphoria** *n.* deviation of one eye in an upward direction. See also PHORIA.

**hyperphrenia** *n.* an obsolescent name for a state of increased mental activity combined with concentration difficulty and distractibility, a common pattern in MANIC EPISODES.

**hyperplasia** *n.* an abnormal increase in the size of an organ or tissue caused by the growth of an excessive number of new, normal cells. —**hyperplastic** *adj.*

**hyperpnea** *n.* an abnormal increase in the rate and depth of breathing, which may be deep, labored, and rapid.

**hyperpolarization** *n.* an increase in the electric potential across the plasma membrane of a cell, especially a neuron, such that the inner surface of the membrane becomes more negative in relation to the outer surface. It occurs during the final portion of an ACTION POTENTIAL or in response to inhibitory neural messages. Compare DEPOLARIZATION.

**hyperprosexia** *n.* fixation of attention on an idea or stimulus (e.g., the creaking of a door) to the exclusion of other stimuli. Hyperprosexia is a feature of COMPULSIVE DISORDERS. Also called **hyperprosessis**.

**hypersensitivity** *n.* **1.** an excessive responsiveness of the immune system to certain foreign substances, including various drugs. Hypersensitivity reactions may be immediate, involving an acute allergic reaction leading to ANAPHYLAXIS, or more delayed, involving dangerous and sometimes fatal reductions in the number of certain white blood cells (see AGRANULOCYTOSIS) in response to treatment with some antipsychotic drugs (CLOZAPINE is a classic example). Drug hypersensitivity can also result in serum-sickness-type reactions or in an immune vasculitis, such as STEVENS–JOHNSON SYNDROME, as seen after administration of some ANTICONVULSANT drugs. **2.** an extreme responsiveness to sensory stimuli (e.g., sound, light, touch). **3.** a tendency toward emotional overreaction to criticism, rejection, or other social judgment. See also SENSITIVITY.

**hypersexuality** *n.* extreme frequency of sexual activity, or an inordinate desire for sexual activity. See NYMPHOMANIA; SATYRIASIS. —**hypersexual** *adj.*

**hypersomnia** *n.* excessive sleepiness during daytime hours or abnormally prolonged episodes of nighttime sleep. This can be a feature of certain DYSSOMNIAS (e.g., NARCOLEPSY) or other sleep or mental disorders, or it can be associated with neurological dysfunction or damage, a general medical condition, or substance use. However, hypersomnia may occur in the absence of any known cause or association with another condition (see PRIMARY HYPERSOMNIA). See also DISORDERS OF EXCESSIVE SOMNOLENCE. Compare HYPOSOMNIA.

**hypersomnolence disorder** see DISORDERS OF EXCESSIVE SOMNOLENCE; PRIMARY HYPERSOMNIA.

**hyperspecificity** *n.* a behavioral situation in which a learned association between two stimuli fails to generalize when the stimuli are presented in a novel combination. Although hyperspecificity is a common occurrence, it has been observed particularly in such disorders as amnesia and autism. One study, for example, described the case of a child with autism who would not use a friend's toilet because it was not the specific one on which he was originally toilet trained.

**hypersthenia** *n.* a condition of excessive muscle strength and tension. —**hypersthenic** *adj.*

**hypertelorism** *n.* an abnormally large distance between two body organs or areas. **Ocular hypertelorism**, in which the eyes are farther apart than normal, is a symptom associated with a variety of genetic disorders and neurological conditions involving cranial anomalies.

**hypertension** *n.* high blood pressure; a circulatory disorder characterized by persistent arterial blood pressure that exceeds a standard, which usually is 140/90 mmHg. In the majority of cases, there is no obvious cause (see ESSENTIAL HYPERTENSION). In a few people, high blood pressure can be traced to a known cause, such as tumors of the adrenal gland, chronic kidney disease, hormone abnormalities, the use of oral contraceptives, or pregnancy. This is called **secondary hypertension**; it is usually cured if its cause is removed or is corrected. **Malignant hypertension** is a form of very high blood pressure that comes on quickly, usually accompanied by retinal hemorrhaging, and can result in organ damage if not immediately treated. Compare HYPOTENSION. —**hypertensive** *adj.*

**hypertensive crisis** a sudden extreme rise in blood pressure.

**hyperthymia** *n.* an emotional response that is disproportionate to the stimulus, frequently occurring in MANIC EPISODES and HYPOMANIC EPISODES.

**hyperthyroidism** *n.* overactivity of the thyroid gland, resulting in excessive production of thyroid hormones and a consequent increase in metabolic rate. Manifestations include nervousness, excessive activity, weight loss, and other physical problems. Compare HYPOTHYROIDISM. See THYROTOXICOSIS.

**hypertonia** *n.* a state of increased muscle tension or tonicity. Also called **hypertonicity**. Compare HYPOTONIA. —**hypertonic** *adj.*

**hypertrophy** *n.* overgrowth of an organ or part due to an increase in the size of its constituent cells. —**hypertrophic** *adj.*

**hypertropia** *n.* see STRABISMUS.

**hyperventilation** *n.* abnormally rapid and deep breathing, usually due to anxiety or emotional stress. It lowers the carbon dioxide level of the blood and produces symptoms such as light-headedness, palpitation, numbness and tingling in the extremities, perspiration, and in some cases fainting (these features are known as **hyperventilation syndrome**). Also called **overbreathing**.

**hypervigilance** *n.* a state of abnormally heightened alertness, particularly to threatening or potentially dangerous stimuli.

**hypesthesia (hypoesthesia)** *n.* severely diminished sensitivity in any of the senses, especially the touch sense. Also called **hypoesthesia (hypoesthesia)**.

**hyphedonia** *n.* a pathological diminution in pleasure from experiences that normally would produce pleasure. Compare ANHEDONIA; HYPERHEDONIA.

**hyphenophilia** *n.* sexual interest and arousal derived from touching skin, fur, hair, leather, or fabrics.

**hypn-** *combining form* see HYPNO-.

**hypnagogic** *adj.* describing or relating to the drowsy state that occurs in the transition from wakefulness to sleep. A transient, dreamlike image experienced while falling asleep is called a **hypnagogic hallucination**. Compare HYPNOPOMPIC.

**hypnalgia** *n.* literally, sleep pain; pain experienced during sleep or in a dream.

**hypno-** (**hypn-**) *combining form* sleep.

**hypnoanalysis** *n.* a modified and shortened form of psychoanalytic treatment, or a technique incorporated into full analysis, in which hypnosis is used (a) to help patients overcome RESISTANCES, (b) to enhance the TRANSFERENCE process, and (c) to recover memories and release repressed material. The material so brought forth is meant to be incorporated into the patient's consciousness for exploration and, ultimately, for interpretation by the therapist. However, this form of therapy is controversial because many psychologists and psychoanalysts question the veracity of memories recovered during a hypnotic state.

**hypnodontics** *n.* the use of hypnotic suggestion in dentistry as a means of relaxing tense patients, relieving anxiety, reinforcing or replacing anesthesia, and correcting such habits as bruxism (grinding the teeth).

**hypnodrama** *n.* a technique of PSYCHODRAMA in which a hypnotic state is induced and the client, or PROTAGONIST, is encouraged to act out his or her relationships and traumatic experiences with the aid of AUXILIARY EGOS. Hypnodrama might be used to overcome a client's resistance to dramatizing his or her problems in conscious psychodrama and to stimulate the revival of past incidents and emotional scenes in their full intensity. The technique is rarely used now. [introduced in 1959 by Jacob L. MORENO]

**hypnogenic** *adj.* **1.** sleep producing. **2.** hypnosis inducing. Historically, hypnosis was misidentified as a sleeplike state.

**hypnogenic spot** a putative point on the body that, when touched, may induce hypnosis if the individual is suggestible.

**hypnoid state** **1.** a state resembling hypnosis. **2.** a state of light trance. **3.** in medical usage, a sleeplike state. Also called **hypnoidal state**.

**hypnophrenosis** *n.* any type of sleep disturbance. See also SLEEP DISORDER.

**hypnopompic** *adj.* describing or relating to the transitional state between sleep and wakefulness. An imaginary sensory perception occurring just prior to full wakefulness is called a **hypnopompic hallucination**. Compare HYPNAGOGIC.

**hypnosis** *n.* (*pl.* **hypnoses**) the procedure, or the state induced by that procedure, in which suggestion is used to evoke changes in sensation, perception, cognition, emotion, or control over motor behavior. Subjects appear to be receptive, to varying degrees, to suggestions to act, feel, and behave differently than in an ordinary waking state. The exact nature of hypnotic suggestibility, and its possible

therapeutic uses, are still being studied and debated. As a specifically psychotherapeutic intervention, hypnosis is referred to as HYPNOTHERAPY. See also ALTERED STATE OF CONSCIOUSNESS; HETEROHYPNOSIS; POSTHYPNOTIC SUGGESTION; SELF-HYPNOSIS; WAKING HYPNOSIS.

**hypnotherapy** *n.* the use of hypnosis in psychological treatment, either in BRIEF PSYCHOTHERAPY directed toward alleviation of symptoms and modification of behavior patterns or in long-term RECONSTRUCTIVE PSYCHOTHERAPY aimed at personality adaptation or change. Hypnotherapy may use one or a combination of techniques, typically involving the administration by a properly trained professional of therapeutic suggestions to patients or clients who have been previously exposed to HYPNOTIC INDUCTION. Although discussions of its clinical applications engender controversy, there is scientific evidence that hypnotherapy can be applied with some success to a wide range of health problems (e.g., hypertension, asthma, insomnia, bruxism), chronic and acute pain management, habit modification (e.g., overeating, smoking), mood and anxiety disorders (e.g., some phobias), and personality disorders. There is also some positive evidence demonstrating its effectiveness as an ADJUNCTIVE THERAPY. Also called **clinical hypnosis**. See also AUTOMATIC WRITING; DIRECT SUGGESTION; DREAM SUGGESTION; ERICKSONIAN PSYCHOTHERAPY; HYPNOANALYSIS; HYPNOTIC REGRESSION.

**hypnotic** **1.** *n.* a drug that helps induce and sustain sleep by increasing drowsiness and reducing motor activity. In general, hypnotics differ from SEDATIVES only in terms of the dose administered, with higher doses used to produce sleep or anesthesia and lower doses to produce sedation or relieve anxiety. BENZODIAZEPINES are among the most widely prescribed hypnotics; antihistamines and other agents are used to lesser degrees. Newer, nonbenzodiazepine hypnotics, such as ESZOPICLONE, ZOLPIDEM, and ZALEPLON, are achieving clinical currency because of the relative infrequency of adverse side effects. **2.** *adj.* pertaining to hypnosis or sleep.

**hypnotic amnesia** forgetfulness of certain specified events that is induced by hypnotic suggestion. See also POSTHYPNOTIC AMNESIA.

**hypnotic analgesia** reduced sensitivity to pain under hypnotic suggestion.

**hypnotic induction** a series of simple tasks, such as allowing one's hand to float upward, that leads an individual to enter a state of higher suggestibility during hypnosis. The process depends on the individual's HYPNOTIC SUSCEPTIBILITY and often involves relaxation and a subtle shifting of perceived control to the hypnotist.

**hypnotic regression** a therapeutic technique in which an individual under hypnosis is induced to relive a previous experience that may be contributing to current emotional difficulties. There are two types of hypnotic regression: AGE REGRESSION and PAST-LIFE REGRESSION.

**hypnotic rigidity** a condition of apparent muscular rigidity induced by suggestion during hypnosis. For example, individuals told to hold out their arms in a rigid way may find themselves unable to bend the arm when asked to do so. See also CHALLENGE SUGGESTION; IDEOMOTOR SUGGESTION.

**hypnotic susceptibility** the degree to which an individual is able to enter into hypnosis. Although many individuals can enter at least a light trance, people vary greatly in their ability to achieve a moderate or DEEP TRANCE. Also

called **hypnotizability**. See also STANFORD HYPNOTIC SUSCEPTIBILITY SCALE.

**hypnotic trance** see TRANCE.

**hypnotism** *n.* **1.** the act of inducing hypnosis. **2.** the practice of hypnosis. [usually credited to James BRAID, shortened from his word, *neurohypnotism*]

**hypnotizability** *n.* see HYPNOTIC SUSCEPTIBILITY. —**hypnotizable** *adj.*

**hypo-** (**hyp-**) *combining form* **1.** under or below (e.g., HYPOSPADIAS). **2.** less than normal; deficient (e.g., HYPOGLYCEMIA).

**hypoactive sexual desire disorder** in *DSM-IV-TR*, persistent and distressing deficiency or absence of sexual interest and desire to engage in sexual activity. This may be global, involving all forms of sexual activity, or situational, limited to one partner or one type of sexual activity. It also may be lifelong or result from some life event or relationship issue. In *DSM-5*, this term is tied exclusively to males and is called **male hypoactive sexual desire disorder**.

**hypoactivity** *n.* abnormally slowed or deficient motor or other activity. For example, functional neuroimaging studies have shown that depression is accompanied by a hypoactivity of brain regions involved in positively motivated behavior.

**hypoacusia** *n.* a state of reduced hearing sensitivity. Also called **hypacusia**; **hypacusis**; **hypacousia**. —**hypoacusic** *adj.*

**hypoalgesia** *n.* diminished sensitivity to pain. Also called **hypoalgesia**.

**hypobaropathy** *n.* see ALTITUDE SICKNESS.

**hypocathexis** *n.* in psychoanalytic theory, an abnormally low investment of PSYCHIC ENERGY in an OBJECT. Compare HYPERCATHESIS. See CATHEXIS.

**hypochondria** *n.* morbid concern with the state of one's health, including unfounded beliefs of ill health. The individual is often focused on having one type of illness at a time. When severe and disabling, this preoccupation is classified as a mental disorder and known as HYPOCHONDRIASIS. —**hypochondriac** or **hypochondriacal** *adj.* —**hypochondriac** *n.*

**hypochondriasis** *n.* in *DSM-IV-TR*, a SOMATOFORM DISORDER characterized by a preoccupation with the fear or belief that one has a serious physical disease based on the incorrect and unrealistic interpretation of bodily symptoms. This fear or belief persists for at least 6 months and interferes with social and occupational functioning in spite of medical reassurance that no physical disorder exists. *DSM-5* eliminates this diagnosis, partly because of its perceived negative connotations (e.g., it has been perceived by patients as dismissing the validity of their concerns), and replaces it with two separate diagnoses that are each characterized by high health anxiety and health-related preoccupations but that occur either in the presence of significant somatic symptoms (see SOMATIC SYMPTOM DISORDER) or in the absence or with minimal evidence of such symptoms (see ILLNESS ANXIETY DISORDER).

**hypodermic injection** see SUBCUTANEOUS INJECTION.

**hypoesthesia** (**hypoesthesia**) *n.* see HYPESTHESIA.

**hypofrontality** *n.* a condition of reduced activation or inadequate functioning of the cortex of the frontal lobes of

the brain. In theory, this is a factor in schizophrenia, but it is not well established either as a characteristic phenomenon or as a cause.

**hypofunction** *n.* reduced function or activity, especially of an organ, such as a gland.

**hypogastric nerve** a pair of single large nerves or sets of smaller parallel nerves that extend into the pelvic region and carry postganglionic fibers that innervate the bladder, rectum, and genitalia.

**hypogeusia** *n.* diminished sensitivity to taste. See also DYSGEUSIA. —**hypogeusic** *adj.*

**hypoglossal nerve** the 12th CRANIAL NERVE, a motor nerve that originates in a NUCLEUS on the floor of the fourth VENTRICLE within the brain and innervates the muscles of the tongue, lower jaw, and areas of the neck and chest. Also called **cranial nerve XII**.

**hypoglossia** *n.* see AGLOSSIA.

**hypoglycemia** *n.* the condition of having a low blood-sugar level, due to interference with the formation of sugar in the blood or excessive utilization of sugar. In infants, the major symptoms are tremors, cyanosis, seizures, apathy, weakness, respiratory problems, and failure to develop intellectually; the infantile idiopathic form may be due to a single recessive gene. In adults, the major symptoms are weakness, profuse sweating, nervousness, and dizziness. The adult form may be a psychophysiological reaction (**functional hyperinsulinism**), or it may result from inadequate intake of carbohydrates or insulin overdosage in those with diabetes mellitus. —**hypoglycemic** *adj.*

**hypogonadism** *n.* decreased functional activity of the gonads, with retardation of growth and sexual development.

**hypokinesis** *n.* abnormal slowness in the initiation of voluntary movement. Compare BRADYKINESIA. Also called **hypokinesia**. —**hypokinetic** *adj.*

**hypokinesesthesia** *n.* a diminished level of sensitivity in the SOMATOSENSORY SYSTEM (e.g., to touch, weight, pressure, and motion and position of the body). See also KINESIS; PROPRIOCEPTION. Compare HYPERKINESesthesia.

**hypolipemia** *n.* an abnormally low level of lipids in the blood.

**hypomania** *n.* **1.** generally, a state of enhanced mood and increased energy and activity that resembles MANIA but is milder. **2.** more specifically, a HYPOMANIC EPISODE. —**hypomanic** *adj.*

**hypomanic episode** a period of elevated, expansive, or irritable mood accompanied by various combinations of inflated self-esteem, a decreased need for sleep, increased speech, racing thoughts, distractibility, increased activity or PSYCHOMOTOR AGITATION, and increased involvement in risky activities (e.g., buying sprees, sexual indiscretions). One or more hypomanic episodes are characteristic of bipolar II disorder (see BIPOLAR DISORDER), and hypomanic symptoms are a feature of CYCLOTHYMIC DISORDER. Also called **hypomania**. Compare MANIC EPISODE.

**hypomenorrhea** *n.* a condition of diminished menstrual flow or menstruation of abnormally short duration.

**hypometria** *n.* underreaching an object during voluntary motor activity. This can be caused by impaired visual localization, defective visuomotor coordination, or a disorder that interferes with the execution of eye or hand move-

ments. See also DYSMETRIA; OCULAR DYSMETRIA. Compare HYPERMETRIA.

**hypomotility** *n.* abnormally decreased or deficient activity or movement.

**hyponasality** *n.* lack of nasal resonance as a result of partial or complete obstruction in the nasal tract. Also called **denasality**.

**hypophagia** *n.* pathologically reduced food intake. Compare HYPERPHAGIA.

**hypophilia** *n.* **1.** reduced sexual responsiveness. **2.** lack of interest in sex. **3.** sexual arousal by and response to a particular activity or type of stimulus that is below the normal range.

**hypophonia** *n.* a dysfunction in the production of sounds in which poor or absent coordination of speech muscles causes an abnormally weak voice, characterized by the need to whisper rather than speak aloud. Also called **microphonia**. See DYSPHONIA.

**hypophoria** *n.* deviation of one eye in a downward direction. See also PHORIA.

**hypophyseal cachexia** a disease caused by total failure of the pituitary gland, resulting in secondary atrophy of the adrenal cortex, thyroid gland, and gonads. Sexual glands and breasts atrophy, teeth and hair fall out, and anorexia, diabetes insipidus, hypoglycemia, and mental changes develop. The disease occurs in two forms: **Sheehan's syndrome**, which affects women after childbirth; and **SIMMONDS' DISEASE**, which affects both sexes. Also called **pituitary cachexia**.

**hypophyseal fossa** see FOSSA.

**hypophysectomy** *n.* surgical removal of the pituitary gland (hypophysis). Also called **pituitectomy**.

**hypophysis (hypophysis cerebri)** *n.* see PITUITARY GLAND.

**hypoplasia** *n.* underdevelopment of an organ or tissue, usually due to an inadequate number of cells or a diminished size of structural cells. —**hypoplastic** *adj.*

**hypoprosopia** *n.* an abnormal lack of attentive ability. Also called **hypoprosessis**.

**hyporexia** *n.* a pathologically decreased appetite. See also ANOREXIA. Compare HYPEROREXIA.

**hyposexuality** *n.* an abnormally low level of sexual behavior. Hyposexual individuals may show no sex drive or interest in sexual activity. —**hyposexual** *adj.*

**hyposmia** *n.* decreased sensitivity to some or all ODORANTS. Individuals with this condition are described as **hyposmic**. Also called **microsmia**. Compare HYPEROSMIA.

**hyposomnia** *n.* a reduction in a person's sleep time, often as a result of INSOMNIA or some other sleep disturbance. See also SLEEP DISORDER. Compare HYPERSOMNIA.

**hypospadias** *n.* a congenital anomaly in which the urethra opens below its normal anatomical position. In males, hypospadias is usually manifested by a urethral opening on the underside of the penis. In females, the urethra may open into the vagina.

**hypotension** *n.* abnormally low blood pressure, causing dizziness and fainting. Compare HYPERTENSION. See also ORTHOSTATIC HYPOTENSION. —**hypotensive** *adj.*

**hypothalamic hormone** any hormone secreted by neurons of the HYPOTHALAMUS. Neuroendocrine cells in the hypothalamus produce the hormones OXYTOCIN and VASOPRESSIN. The axons of these cells pass through the pituitary stalk (infundibulum) to the posterior pituitary, where they are released into the bloodstream. Other neuroendocrine cells in the hypothalamus produce either RELEASING HORMONES, which stimulate secretion of anterior pituitary hormones, or inhibiting hormones, which prevent secretion of anterior pituitary hormones. These hormones travel to the anterior pituitary through the HYPOTHALAMIC-PITUITARY PORTAL SYSTEM.

**hypothalamic hyperphagia** see VENTROMEDIAL HYPOTHALAMIC SYNDROME.

**hypothalamic-hypophyseal portal system** see HYPOTHALAMIC-PITUITARY PORTAL SYSTEM.

**hypothalamic-pituitary-adrenal axis (HPA axis)** a major mammalian system maintaining body homeostasis by regulating the neuroendocrine and sympathetic nervous systems as well as modulating immune function. Consisting of the HYPOTHALAMUS in the center of the brain, the PITUITARY GLAND directly underneath, and the ADRENAL GLANDS on top of the kidneys, the HPA axis helps regulate such widely varied processes as food consumption, digestion, energy usage (in the form of glucose metabolism), reproduction and sexual behavior, cardiovascular functioning, memory acquisition and retrieval, and emotion, and it also forms the core of the physiological response to stress. Outputs from the amygdala stimulate the PARAVENTRICULAR NUCLEUS of the hypothalamus to secrete arginine VASOPRESSIN (AVP) and CORTICOTROPIN-RELEASING FACTOR (CRF) into the HYPOTHALAMIC-PITUITARY PORTAL SYSTEM. The pattern of release follows a CIRCADIAN RHYTHM in which the highest levels of circulating vasopressin and CRF occur in the early morning and gradually fall throughout the day to a nighttime low. In the presence of stressors, however, this circadian rhythm disappears and secretions remain elevated to enable the body to properly mobilize to confront or avoid these stressors as part of the GENERAL ADAPTATION SYNDROME. AVP and CRF then synergistically stimulate the formation and release from the anterior pituitary of CORTICOTROPIN, which in turn regulates the production and release of CORTISOL and other GLUCOCORTICOIDs from the outer layer (cortex) of the adrenal gland into the bloodstream. Cortisol indirectly inhibits the production and release of additional AVP and CRF through its influence upon the HIPPOCAMPUS and other brain areas, thus forming a self-regulating NEGATIVE FEED-BACK loop. Dysfunction of the HPA axis has been implicated in the pathophysiology of numerous conditions, such as mood disorders, anxiety disorders, eating disorders, obesity, alcohol dependence, insomnia, gastrointestinal disorders, cardiovascular disease, chronic fatigue syndrome, fibromyalgia, cancer, and rheumatoid arthritis and other autoimmune diseases. Also called **hypothalamic-pituitary-adrenocortical system (HPA system)**. See also SYMPATHETIC-ADRENAL-MEDULLARY AXIS.

**hypothalamic-pituitary portal system** a system of blood capillaries that transports RELEASING HORMONES from the hypothalamus to the anterior pituitary. Also called **hypothalamic-hypophyseal portal system**. See also HYPOTHALAMIC-PITUITARY-ADRENAL AXIS.

**hypothalamic syndrome** any of various disorders arising from injuries to the HYPOTHALAMUS. These may involve disturbances of eating, drinking, sleep, water bal-

ance, and temperature or development of secondary sexual characteristics. See LATERAL HYPOTHALAMIC SYNDROME; VENTROMEDIAL HYPOTHALAMIC SYNDROME.

**hypothalamic theory of Cannon** see CANNON-BARD THEORY. [Walter B. CANNON]

**hypothalamus** *n.* (*pl.* **hypothalami**) part of the DIENCEPHALON of the brain, lying ventral to the THALAMUS, that contains nuclei with primary control of the autonomic (involuntary) functions of the body. It also helps integrate autonomic activity into appropriate responses to internal and external stimuli. Additionally, it is involved in appetite, thirst, sleep, and sexuality. See also HYPOTHALAMIC HORMONE; LATERAL HYPOTHALAMUS; VENTROMEDIAL HYPOTHALAMUS. —**hypothalamic** *adj.*

**hypothermia** *n.* the state of having an abnormally low body temperature. It can be caused by absence of normal reflexes such as shivering, sometimes associated with disease or a disorder of the brain, or by exposure to extreme cold. **Accidental hypothermia** is most likely to affect older people, who are less able to cope with the cooling effect of environmental temperatures in the winter months. Symptoms include listlessness, drowsiness, apathy, and indifference to progressive frostbite, progressing (if untreated) to coma and death. See also INDUCED HYPOTHERMIA. —**hypothermic** *adj.*

**hypothesis** *n.* (*pl.* **hypotheses**) an empirically testable proposition about some fact, behavior, relationship, or the like, usually based on theory, that states an expected outcome resulting from specific conditions or assumptions.

**hypothesis testing** a statistical inference procedure for determining whether a given proposition about a population PARAMETER should be rejected on the basis of observed sample data. See also SIGNIFICANCE TESTING.

**hypothetical construct** see CONSTRUCT.

**hypothetical imperative** in the moral teaching of Immanuel KANT, a maxim of the type "If you would achieve end X, take action Y." Such maxims of skill or prudence differ from the CATEGORICAL IMPERATIVE of morality in that (a) they are aimed at particular material ends rather than absolute and unconditional ends and (b) they cannot be defended as a universal and transsituational law. See also UNIVERSALIZABILITY.

**hypothetico-deductive method** a method of scientific inquiry in which the credibility or explanatory power of a falsifiable hypothesis is tested by making predictions on the basis of this hypothesis and determining whether these predictions are consistent with empirical observations. It is one of the most widely used SCIENTIFIC METHODS for disproving hypotheses and building corroboration for those that remain. Also called **mathematico-deductive method**.

**hypothetico-deductive reasoning** the abstract logical reasoning that, according to the PIAGETIAN THEORY of cognitive development, emerges in early adolescence and marks the FORMAL OPERATIONAL STAGE. Hypothetico-deductive reasoning is distinguished by the capacity for abstract thinking and hypothesis testing, which frees the adolescent from total reliance on concrete thinking and immediate perception.

**hypothymia** *n.* an obsolescent name for a restricted range of affect, occurring in severe cases of MAJOR DEPRESSIVE EPISODE.



**hypothyroidism** *n.* underactivity of the thyroid gland, resulting in underproduction of thyroid hormones and a consequent decrease in metabolic rate. Manifestations include fatigue, weakness, and weight gain and other physical problems. Dysphoria, depression, and psychosis can be seen in more severe forms. Compare HYPERTHYROIDISM. See also CONGENITAL HYPOTHYROIDISM.

**hypotonia** *n.* decreased muscle tone or strength. Compare HYPERTONIA. —**hypotonic** *adj.*

**hypotropia** *n.* see STRABISMUS.

**hypovolemic thirst** thirst caused by depletion of the volume of extracellular fluid, as, for example, by blood loss (i.e., hypovolemia) or vomiting. Also called **volumetric thirst**. Compare OSMOMETRIC THIRST.

**hypoxanthine-guanine phosphoribosyltransferase (HGPRT)** an enzyme whose deficiency in the human body leads to symptoms of LESCH-NYHAN SYNDROME. It was the first enzyme found to be associated with an inherited disorder involving maladaptive behavior and intellectual disability. Also called **hypoxanthine phosphoribosyltransferase**.

**hypoxemia** *n.* a deficiency of oxygen in the blood. The most reliable method for measuring the degree of hypoxemia is blood gas analysis to determine the partial pressure of oxygen in the arterial blood. Insufficient oxygenation of the blood may lead to HYPOXIA. Compare ANOXEMIA.

**hypoxia** *n.* reduced oxygen in the body tissues, including the brain. This can result in widespread brain injury depending on the degree of oxygen deficiency and its duration. Signs and symptoms of hypoxia vary according to its cause but generally include shortness of breath, rapid pulse, fainting, and mental disturbances (e.g., delirium, euphoria). See also ANOXIA. —**hypoxic** *adj.*

**hypoxic hypoxia** hypoxia due to insufficient oxygen reaching the blood, as at the decreased barometric pressures of high altitudes. See ALTITUDE SICKNESS.

**hypoxyphilia** *n.* sexual fantasy involving arousal obtained by reduction of oxygen flow to the brain. It is a PARAPHILIA usually involving one person alone (i.e., AUTOEROTIC ASPHYXIA) but occasionally involving sexual partners (i.e., ASPHYXOPHILIA). Methods and tools used to achieve arousal include, among others, strangulation by rope, smothering by means of a plastic bag over the head, hanging, and breathing in an anesthetic. Highly dangerous, hypoxyphilia results in numerous fatalities.

**hysterectomy** *n.* the surgical removal of the uterus. It may be **total hysterectomy**, including excision of the cervix; **subtotal hysterectomy**, in which only the uterus above the cervix is removed; or **radical hysterectomy**, with excision of a part of the vagina with the uterus and cervix.

**hysteresis** *n.* 1. an effect in which the perception of a stimulus is influenced by one's immediately preceding perceptions. It can be demonstrated in experiments that involve making successive changes to a stimulus that varies along some dimension and asking a participant to describe his or her perception. When values along the dimension

are steadily increased, there comes a point at which the participant will begin to place the percept in a different category (e.g., a sound is *loud* rather than *quiet*). However, when values along the dimension are decreased, the crossover point will occur at a different point along the dimension. 2. in vision, the tendency for a perceptual state to persist under gradually changing conditions. For example, stereoscopic fusion can persist, producing the appearance of depth even when BINOCULAR DISPARITY between the two images becomes so great that they would normally not be able to be fused. —**hysteretic** *adj.*

**hysteria** *n.* the historical name for the condition now largely classified as CONVERSION DISORDER but with symptoms dispersed across other formal diagnoses as well (e.g., HISTRIONIC PERSONALITY DISORDER). Although technically outdated, it is often used as a lay term for any psychogenic disorder characterized by symptoms such as paralysis, blindness, loss of sensation, and hallucinations and often accompanied by suggestibility, emotional outbursts, and histrionic behavior. Sigmund FREUD interpreted hysterical symptoms as defenses against guilty sexual impulses (e.g., a paralyzed hand cannot masturbate), but other conflicts are now recognized. Freud also included dissociative conditions in his concept of hysteria, but these are now regarded as separate disorders. The name derives ultimately from the Greek *husteros*, "uterus," based on the early and erroneous belief that such disorders were unique to women and originated in uterine disorders. —**hysterical** *adj.*

**hysterical amnesia** an older name, now rarely encountered, for a disorder characterized by inability to recall traumatic or anxiety-provoking events, such as experiences associated with guilt, failure, or rejection. See DISSOCIATIVE AMNESIA.

**hysterical blindness** see FUNCTIONAL BLINDNESS.

**hysterical disorder** an outdated name for any disorder characterized by involuntary psychogenic dysfunction of the sensory, motor, or visceral activities of the body. See CONVERSION DISORDER; SOMATIZATION DISORDER.

**hysterical paralysis** a former name for CONVERSION PARALYSIS.

**hysterical personality disorder** see HISTRIONIC PERSONALITY DISORDER.

**hysterical psychosis** an old name for a condition in which psychotic symptoms (e.g., hallucinations, delusions, and bizarre and sometimes violent behavior) appear suddenly in a person with HISTRIONIC PERSONALITY DISORDER, usually in response to a stressful precipitating life event. Symptoms are of short duration, lasting 2 weeks or less, and there is a full return to the previous level of functioning. Currently, however, hysterical psychosis is not widely considered a distinct clinical entity. Also called **dissociative psychosis**.

**hysteriform** *adj.* characterized by symptoms that resemble those associated with HYSTERIA. The term is not in current usage.

**hystero- (hyster-)** *combining form* uterus.

**Hz** symbol for HERTZ.

**I** *pron.* the nominative pronoun referring to the self. In William JAMES's psychology, the "I" is the NOMINATIVE SELF.

**IAAP** abbreviation for INTERNATIONAL ASSOCIATION OF APPLIED PSYCHOLOGY.

**IACUC** acronym for INSTITUTIONAL ANIMAL CARE AND USE COMMITTEE.

**IADLs** abbreviation for INSTRUMENTAL ACTIVITIES OF DAILY LIVING.

**-iasis (-asis)** *suffix* disease or diseased (e.g., HYPOCHONDRIASIS).

**IAT** abbreviation for IMPLICIT ASSOCIATION TEST.

**iatro-** *combining form* physician or medicine.

**iatrochemical school of thought** a school of thought, active from the early 16th to the mid-17th centuries, which held that disease resulted from chemical imbalances in the body and that, conversely, health and longevity resulted from the proper balance of chemicals. It also held that disease was to be treated chemically and that drugs could be chemically produced. This view was heavily influenced by the work of Swiss chemist and physician Paracelsus (1493–1541) and developed in opposition to the theories of GALEN, still prevalent at that time, holding that diseases resulted from an imbalance of bodily HUMORS. The iatrochemical school provided the impetus for the development of modern pharmaceutical laboratories and modern chemotherapy. See also IATROPHYSICAL SCHOOL OF THOUGHT.

**iatrogenic** *adj.* denoting or relating to a pathological condition that is inadvertently induced or aggravated in a patient by a health care provider. It may be due to the behavior of the provider (e.g., the manner in which he or she examined the patient) or be a result of the treatment he or she prescribed. For example, an **iatrogenic addiction** is a dependence on a substance, most often a painkiller or minor tranquilizer, originally prescribed by a physician to treat a physical or psychological disorder. The process of developing an iatrogenic condition is called **iatrogenesis** (or **iatrogeny**).

**iatrogenic schizophrenia** see TARDIVE DYSMENTIA.

**iatrophysical school of thought** a 17th-century school of thought that sought to apply the principles of mathematics and mechanics to medicine. Early examples include the development of the thermometer as an instrument of medical diagnosis and the invention of other mechanical and measurement devices to impart knowledge of physiological processes. This concept, at least in its early development, was based on the Cartesian view that the physical body is essentially a machine (see CARTESIAN DUALISM). Many early proponents of this school also practiced iatrochemistry (see IATROCHEMICAL SCHOOL OF THOUGHT). Also called **iatromathematics**; **iatromechanism**.

**-iatry (-iatrics)** *suffix* medical care or treatment (e.g., PSYCHIATRY).

**ibogaine** *n.* a hallucinogenic agent found in the root of

the African forest plant *Tabernanthe iboga*. It is used mainly by adherents of the Bwiti (or Bouiti) religion in rituals or as a stimulant, although data suggest that ibogaine may have potential clinical use in the treatment of substance dependence and management of withdrawal symptoms; it blocks serotonin reuptake and is also an agonist at kappa OPIOID RECEPTORS.

**ibotenic acid** an agent that enhances the action of the excitatory neurotransmitter GLUTAMATE: It is an agonist at NMDA RECEPTORS. Ibotenic acid and its metabolic product, muscimol (a GABA AGONIST), are found in some mushrooms of the genus *Amanita* (see FLY AGARIC).

**IBS** abbreviation for IRRITABLE BOWEL SYNDROME.

**ICC 1.** abbreviation for INTRACLASS CORRELATION coefficient. **2.** abbreviation for ITEM CHARACTERISTIC CURVE.

**ICD** abbreviation for INTERNATIONAL CLASSIFICATION OF DISEASES.

**ice** *n.* slang for illicitly manufactured METHAMPHETAMINE, a common drug of abuse, especially the free-base, concentrated, smokable form of methamphetamine. It has an intense, persistent action; chronic use may lead to serious psychiatric, metabolic, cardiovascular, and neuromuscular changes.

**iceberg metaphor** the notion that conscious events, like the proverbial tip of the iceberg, represent only a small and accessible aspect of a larger domain of unconscious psychological functioning. Although this metaphor is commonly attributed to Sigmund FREUD, it appears nowhere in his published works.

**iceberg principle** the principle that the more obvious reasons for a behavior or opinion are almost never a complete explanation: Much of the real explanation lies below the surface, requiring extensive interviews or other research techniques to uncover.

**iceberg profile** a pattern of response to the PROFILE OF MOOD STATES questionnaire in which VIGOR scores are above the 50th T SCORE and all other scales (tension, depression, anger, fatigue, and confusion) are below that level. Successful ELITE ATHLETES have been shown to exhibit this mental health profile.

**ICF** abbreviation for INTERMEDIATE CARE FACILITY.

**icon (ikon)** *n.* **1.** an image, picture, or pictorial representation of something. **2.** an after sensation representing something previously seen or experienced. **3.** see IDEOGRAM. —**iconic** or **ikonic** *adj.*

**iconic content** in Jerome Seymour BRUNER's theory of cognitive development, mental images or pictures of particular aspects of reality, such as a child's mental representation of a doll.

**iconic gesture** a gesture that has some physical resemblance to the meaning or idea that it stands for, such as holding up the hand with the thumb and forefinger very close together to signify that something is very small.

**iconicity** *n.* an association between form and meaning in

which a resemblance between two objects, images, or events allows one to be a sign or symbol for the other.

**iconic memory** the brief retention of an image of a visual stimulus beyond cessation of the stimulus. This iconic image usually lasts less than a second. In a MULTISTORE MODEL OF MEMORY, iconic memory precedes SHORT-TERM MEMORY. Also called **visual sensory memory**.

**iconic representation** **1.** the MENTAL REPRESENTATION of visual stimuli in raw, unprocessed form. **2.** in Jerome Seymour BRUNER's theory of cognitive development, the representation of objects and experiences as images based on sensory impressions. The process underlying this form of knowledge acquisition, which begins to develop in early infancy and is dominant in the preschool years, is called the **iconic mode** (or **iconic stage**). Compare ENACTIVE REPRESENTATION; SYMBOLIC REPRESENTATION.

**iconic symbol** a linguistic sign (written or spoken word) that has a physical resemblance, rather than an arbitrary relation, to its referent. Examples include onomatopoeic coinages, such as *choo-choo* (train), and the signs used in pictographic languages. With these few exceptions, linguistic signs are held to be arbitrary in most modern thinking on language. The contrary view, which holds that there is a general if hidden correspondence between the sounds of words and their referents, is known as the theory of PHONETIC SYMBOLISM. Compare ARBITRARY SYMBOL.

**iconoclast** *n.* **1.** one who challenges or seeks to overthrow established ideas, traditions, or practices. **2.** in religion, one who opposes iconolatry or, more generally, the use of physical images in worship. —**iconoclastic** *adj.*

**iconolatry** *n.* the veneration of certain holy images as channels of the divine, as practiced by the Orthodox and Eastern Catholic (Uniate) Churches. This is distinguished from worship of the images themselves, which would be idolatry.

**iconomania** *n.* a pathological impulse to collect and worship images.

**ICP** abbreviation for INTRACRANIAL PRESSURE.

**ICS** abbreviation for INTRACRANIAL STIMULATION.

**ICSH** abbreviation for interstitial cell-stimulating hormone. See LUTEINIZING HORMONE.

**icterus** *n.* see JAUNDICE.

**ictus** *n.* a sudden event, particularly a seizure.

**ICU** abbreviation for INTENSIVE CARE UNIT.

**id** **1.** *n.* in psychoanalytic theory, the component of the personality that contains the instinctual, biological drives that supply the psyche with its basic energy or LIBIDO. Sigmund FREUD conceived of the id as the most primitive component of the personality, located in the deepest level of the unconscious; it has no inner organization and operates in obedience to the PLEASURE PRINCIPLE. Thus, the infant's life is dominated by the desire for immediate gratification of instincts, such as hunger and sex, until the EGO begins to develop and operate in accordance with reality. See also PRIMARY PROCESS; STRUCTURAL MODEL. **2.** abbreviation for intradermal.

**IDA** abbreviation for INITIAL DATA ANALYSIS.

**id anxiety** in psychoanalytic theory, anxiety deriving from instinctual drives. This is the main cause of PRIMARY ANXIETY. Compare EGO ANXIETY; SUPEREGO ANXIETY.

**IDDM** abbreviation for insulin-dependent DIABETES MELLITUS.

**idea** *n.* **1.** in cognitive psychology, a mental image or cognition that is ultimately derived from experience but that may occur without direct reference to perception or sensory processes. **2.** in the writings of René DESCARTES and the British empiricist philosophers (see EMPIRICISM), a mental event that may correspond to something outside the mind but that is itself the immediate object of thought or perception. Descartes made a celebrated and much disputed distinction between DERIVED IDEAS and INNATE IDEAS. See also ASSOCIATION OF IDEAS. **3.** in the thought of Greek philosopher PLATO, the abstract or intellectual form of something regarded as its true reality. See PLATONIC IDEALISM; THEORY OF FORMS.

**IDEA** abbreviation for INDIVIDUALS WITH DISABILITIES EDUCATION ACT.

**idealism** *n.* **1.** in philosophy, the position that reality, including the natural world, is not independent of mind. Positions range from strong forms, holding that mind constitutes the things of reality, to weaker forms, holding that reality is correlated with the workings of the mind. There is also a range of positions as to the nature of mind, from those holding that mind must be conceived of as absolute, universal, and apart from nature itself to those holding that mind may be conceived of as individual minds. See ABSOLUTE IDEALISM; IDEALISTIC MONISM; SUBJECTIVE IDEALISM. See also MIND—BODY PROBLEM. **2.** commitment to moral, political, or religious ideals. **3.** see PLATONIC IDEALISM. Compare MATERIALISM. —**idealist** *n.* —**idealistic** *adj.*

**idealistic monism** the position that all reality consists of a single SUBSTANCE, that substance being mind or spirit. See IDEALISM; MONISM. Compare NATURAL MONISM. See also MIND—BODY PROBLEM.

**idealization** *n.* **1.** the exaggeration of the positive attributes and minimization of the imperfections or failings associated with a person, place, thing, or situation, so that it is viewed as perfect or nearly perfect. **2.** in psychoanalytic theory, a DEFENSE MECHANISM that protects the individual from conscious feelings of ambivalence toward the idealized OBJECT. Idealization of parents and other important figures plays a role in the development of the EGO-IDEAL. —**idealize** *vb.*

**idealizing transference** in SELF PSYCHOLOGY, a NARCISSISTIC TRANSFERENCE that, when activated in treatment, results in the patient experiencing the analyst or therapist as a powerful and benevolent parental figure. When engaged in this form of transference, the patient feels protected and able to share in the power and capabilities of the therapist, much as a young child idealizes his or her parents and feels protected by them. Compare MIRROR TRANSFERENCE; TWINSHIP TRANSFERENCE. [first described by Austrian-born U.S. psychoanalyst Heinz Kohut (1913–1981)]

**ideal observer** a hypothetical person whose sensory and perceptual systems operate without error or bias. The concept of the ideal observer is used most commonly in the context of psychophysical testing, particularly SIGNAL DETECTION THEORY. Performance of the ideal observer can be simulated and compared with actual human performance.

**ideal performance state (IPS)** the state of cognitive and physiological activation that permits optimal perfor-

mance for an individual. See ZONE OF OPTIMAL FUNCTIONING.

**ideal self** in models of self-concept, a mental representation of an exemplary set of psychological attributes that one strives or wishes to possess.

**idea of influence** see DELUSION OF INFLUENCE.

**idea of reference** the sense that events or the actions of others (e.g., talking, whispering, smiling) relate particularly to oneself. In an extreme degree, it is a DELUSION OF REFERENCE.

**ideation** *n.* the process of forming ideas and images. —**ideate** *vb.* —**ideational** *adj.*

**ideational agnosia** a form of AGNOSIA characterized by an inability to form an association between the idea or purpose of an object and the object itself. This inability cannot be attributed to impairment of a primary sensory modality.

**ideational apraxia** see APRAXIA.

**idée fixe** **1.** a firmly held, irrational idea or belief that is maintained despite evidence to the contrary. It may take the form of a delusion and become an obsession. Also called **fixed belief**; **fixed idea**. **2.** a subconscious unit of mental processing (see AUTOMATISM) that has become split off or dissociated from consciousness and, as a result, interferes with the normal processing of information. In some theories, this is considered a primary mechanism for the symptoms of HYSTERIA. [proposed by Pierre JANET]

**identical elements theory** the concept that the ability to learn a new task is enhanced to the extent that it contains elements of previously mastered tasks. Also called **identical components theory**.

**identical points** points on the retinas of the left and right eyes that receive identical images from the same object at a specified distance.

**identical twins** see MONOZYGOTIC TWINS.

**identifiable neuron** a large neuron that is similar from one individual to the next, enabling investigators to recognize it and give it a code name. Identifiable neurons are common in invertebrates but uncommon in vertebrates.

**identification** *n.* **1.** the process of associating the self closely with other individuals and their characteristics or views. This process takes many forms: The infant feels part of his or her mother; the child gradually adopts the attitudes, standards, and personality traits of the parents; the adolescent takes on the characteristics of the peer group; the adult identifies with a particular profession or political party. Identification operates largely on a nonconscious or preconscious level. **2.** in psychoanalytic theory, a DEFENSE MECHANISM in which the individual incorporates aspects of his or her OBJECTS inside the EGO to alleviate the anxiety associated with OBJECT LOSS or to reduce hostility between himself or herself and the object. **3.** in CONFIRMATORY FACTOR ANALYSIS and STRUCTURAL EQUATION MODELING, a situation in which the model contains a sufficient number of both fixed and free PARAMETERS to result in unique estimates from the observed data. A model is said to be identified or identifiable if a unique set of its parameter values can be determined from observations. OVERIDENTIFICATION occurs when there are more knowns than free parameters, and UNDERIDENTIFICATION occurs when it is not possible to estimate all of the model's parameters.

**identification–production distinction** a hypothesis about PRIMING that amends the distinction commonly made for tests of implicit memory—that is, between PERCEPTUAL TESTS that tap perceptual processing of the surface features of a stimulus and CONCEPTUAL TESTS that tap conceptual processing of meaning or semantic information. Instead, it proposes a distinction that emphasizes different processing demands between tests that require the production of a response and those that require identification or verification regarding some property of an item. For example, WORD-STEM COMPLETION (a perceptual test) and the CATEGORY PRODUCTION TEST (a conceptual test) require, respectively, that participants produce a whole word (e.g., *strong*) from a word stem (e.g., *str\_\_*) or produce an item (e.g., *strawberry*) that belongs to a given category (e.g., *types of fruit*). In contrast, perceptual identification (a perceptual test) and category verification (a conceptual test) require, respectively, that participants identify a physical property of a stimulus or verify whether items are members of a given category. Also called **identification–production hypothesis**. See IMPLICIT MEMORY TEST). [proposed by U.S. psychologist John D. E. Gabrieli and colleagues]

**identification test** a verbal intelligence test in which the participant identifies objects or parts of objects in a picture.

**identification transference** in GROUP THERAPY, the client's identification with other members of the group and desire to emulate them. [first described by Russian-born U.S. psychotherapist Samuel Richard Slavson (1890–1981)]

**identification with the aggressor** an unconscious mechanism in which an individual identifies with someone who poses a threat or with an opponent who cannot be mastered. The identification may involve adopting the aggression or emulating other characteristics of the aggressor. This has been observed in cases of hostage taking and in other extreme situations such as concentration camps. In psychoanalytic theory, it occurs on a developmental level when the child identifies with a rival, the father or mother, toward the end of the OEDIPAL PHASE. It was first described by Anna FREUD in 1936. See also DEFENSIVE IDENTIFICATION; STOCKHOLM SYNDROME.

**identified patient** a member of a structured group (especially a family) who exhibits the symptoms of a mental disorder and for whom treatment may be sought by the other group members. Clinical investigation may reveal that there is a complex and seriously maladaptive behavioral pattern among members of the group as a whole but that the psychological stigma has fallen primarily on one person, the identified patient. Also called **symptom bearer**. See also DYSFUNCTIONAL FAMILY.

**identity** *n.* **1.** an individual's sense of self defined by (a) a set of physical, psychological, and interpersonal characteristics that is not wholly shared with any other person and (b) a range of affiliations (e.g., ethnicity) and social roles. Identity involves a sense of continuity, or the feeling that one is the same person today that one was yesterday or last year (despite physical or other changes). Such a sense is derived from one's body sensations; one's body image; and the feeling that one's memories, goals, values, expectations, and beliefs belong to the self. Also called **personal identity**. **2.** in cognitive development, awareness that an object is the same even though it may undergo transformations. For example, a coffee cup remains the same object

despite differences in distance, size, color, lighting, orientation, and even shape. Also called **object identity**.

**identity achievement status** see IDENTITY STATUS MODEL.

**identity confusion** uncertainty regarding one's identity, which often occurs during adolescence but may also occur at a later stage of life. See IDENTITY VERSUS IDENTITY CONFUSION.

**identity crisis** a phase of life marked by experimentation; changing, conflicting, or newly emerging values; and a lack of commitment to one's usual roles in society (especially in work and family relationships). Erik ERIKSON claimed that it is natural and desirable for adolescents to go through a period of identity crisis and that greater maturity results from the experience. The concept has been expanded to refer to adult MIDLIFE CRISES and other periods marked by change or uncertainty about the self. See EGO IDENTITY.

**identity diffusion** **1.** lack of stability or focus in the view of the self or in any of the elements of an individual's IDENTITY. It is common especially in BORDERLINE PERSONALITY DISORDER. **2.** in the EGO PSYCHOLOGY of Erik ERIKSON, a possible outcome of the IDENTITY VERSUS IDENTITY CONFUSION stage, whereby the individual emerges with an uncertain sense of identity and confusion about his or her wishes, attitudes, and goals. See also IDENTITY STATUS MODEL.

**identity disorder** see DISSOCIATIVE IDENTITY DISORDER; GENDER IDENTITY DISORDER.

**identity foreclosure** premature commitment to an identity: the unquestioning acceptance by individuals (usually adolescents) of the role, values, and goals that others (e.g., parents, close friends, teachers, athletic coaches) have chosen for them. The individual's commitment to the foreclosed identity—for example, that of an athlete—occurs without exploring its value or contemplating alternative roles that might be more appropriate for him or her. See also IDENTITY STATUS MODEL; SEPARATION-INDIVIDUATION.

**identity matrix** (symbol: **I**) a SQUARE MATRIX with values of 1 along its main diagonal and 0s elsewhere. Identity matrices are used in FACTOR ANALYSIS solutions and matrix algebra.

**identity need** in the theory of Erich FROMM, the need to achieve a sense of uniqueness, individuality, and selfhood. Psychological autonomy and the severing of INCESTUOUS TIES are considered essential for healthy individuality. Unhealthy, spurious individuality is expressed in conformity, a manifestation of the ESCAPE FROM FREEDOM. Compare ROOTEDNESS.

**identity, negation, reciprocal, and correlative operations (INRC group)** in PIAGETIAN THEORY, a group of four logical operations developed during the FORMAL OPERATIONAL STAGE that are applied to new pieces of information before they become knowledge. These operations can be illustrated by considering a dime and a penny both showing heads. The identity (I) operation leaves the situation unchanged: Both coins remain heads up. The negation (N) operation negates the situation: If the dime has been turned over once, an N operation would be turning the dime back over. The reciprocal (R) operation reciprocates an earlier operation: If the previous operation was turning the penny over, the R operation would be turning the dime

over. The correlative (C) operation is the inverse of the reciprocal operation: If the R operation was turning the dime over, the C operation would be turning both the dime and penny over. Piaget asserted that these logical operations were in fact cognitive operations that formal operational thinkers apply to solve problems.

**identity politics** **1.** political activity or theorizing that derives from individuals' sense of belonging to particular ethnic, sexual, or other identity-based groups, rather than from traditional party or ideological commitments. **2.** the interpersonal processes involved in establishing, maintaining, and negotiating both one's own personal and social identity and the identities of others in the social setting.

**identity principle** **1.** in logic, the principle that where X is known to be identical to Y, any statement about X (or Y) will have the same meaning and truth value as the same statement about Y (or X). So, for example, any statement made about *Paris* will have the same meaning, and be equally true or false, as the same statement made about *the capital of France*. See also LAWS OF THOUGHT. **2.** in the theory of Jean PIAGET, the principle underlying a child's awareness of the CONSERVATION of physical quantities.

**identity status model** an expansion of IDENTITY VERSUS IDENTITY CONFUSION, the fifth stage in Erik ERIKSON'S EIGHT STAGES OF PSYCHOSOCIAL DEVELOPMENT. The model posits four possible identity statuses that an individual might assume, particularly during adolescence, each characterized by a different level of exploration of and commitment to a specific identity. Ideally, development moves toward **identity achievement status**, characterized by evidence of both identity exploration and commitment; this status is related to stable self-esteem and healthy psychological functioning. The other three identity statuses are **moratorium status**, which (as in Erikson's MORATORIUM period) is characterized by evidence of identity exploration but a lack of commitment; **foreclosure status**, depicted by commitment to an identity that adults have set forth for an individual but by failure to explore different options before that commitment is made; and **diffusion status**, characterized by the lack of both identity exploration and commitment (compare Erikson's IDENTITY DIFFUSION). [first proposed in 1966 by Canadian psychologist James E. Marcia]

**identity style** an adolescent's characteristic mode of approaching problems and decisions that are relevant to his or her personal identity or sense of self. Differences in style reflect differences in the social-cognitive processes that individuals use to construct a sense of identity. Three basic identity styles are recognized: informational, normative, and diffuse-avoidant. Information-oriented individuals actively seek out, evaluate, and use self-relevant information. They are skeptical about their self-constructions and willing to test and revise aspects of their self-identity when confronted with discrepant feedback. Normative individuals deal with identity questions and decisional situations by conforming to the prescriptions and expectations of significant others. Diffuse-avoidant-oriented individuals are reluctant to face up to and confront personal problems and decisions. [introduced in 1988 by U.S. psychologist Michael David Berzonsky (1943– )]

**identity theory** the theory that mental states are identical with brain states. In **token identity theory**, identical mental and brain states occur within the individual. **Type identity theory** extends this to theorize that when two or more people share a mental state (e.g., the belief that ice is

cold) they also have the same brain state. Also called **central state theory**; **identity theory of the mind**. See also ELIMINATIVISM; EPIPHENOMENALISM; MATERIALISM; MIND–BODY PROBLEM; PHYSICALISM; REDUCTIONISM.

**identity versus identity confusion** the fifth of ERIKSON'S EIGHT STAGES OF PSYCHOSOCIAL DEVELOPMENT, marked by an identity crisis that occurs during adolescence. During this stage, the individual may experience a psychosocial MORATORIUM, a period of time that permits experimentation with social roles. The individual may "try on" different roles and identify with different groups before forming a cohesive, positive identity that allows him or her to contribute to society; alternatively, the individual may identify with outgroups to form a negative identity or may remain confused about his or her sense of identity, a state Erikson calls IDENTITY DIFFUSION. See also IDENTITY STATUS MODEL.

**ideogram** *n.* a picture or symbol used to represent an object or idea. For example, ideograms are often used in computer interfaces to represent actions that can be selected by pointing to and clicking on them with a mouse. In this context, they are usually referred to as **icons**. Also called **ideograph**. See also LOGOGRAPHIC.

**ideology** *n.* **1.** a more or less systematic ordering of ideas with associated doctrines, attitudes, beliefs, and symbols that together form a more or less coherent philosophy or WELTANSCHAUUNG for a person, group, or sociopolitical movement. **2.** in MARXISM, any philosophy or set of ideas regarded as false and distorting, usually because it ignores or tries to disguise the material basis of society. —**ideological** *adj.*

**ideomotor activity** movement, in some cases elaborate, related to ongoing thoughts but produced without volition. Ideomotor activity explains a variety of phenomena, including gestures during conversations. Also called **ideomotor action**. [first identified in 1852 by British physiologist and physician William Benjamin Carpenter (1813–1885)]

**ideomotor apraxia** see APRAXIA.

**ideomotor compatibility** the extent to which stimuli resemble the sensory feedback from their assigned responses. For example, if the stimulus is the speech sound [a] and the response is to say the letter aloud, stimulus and response have high ideomotor compatibility. Ideomotor compatibility minimizes the difficulty of RESPONSE SELECTION.

**ideomotor principle** see PSYCHONEUROMUSCULAR THEORY.

**ideomotor suggestion** an idea suggested by a hypnotist that brings about an apparently automatic muscular response in the hypnotized individual. The cue is usually a simple statement or command, such as *Your arm is becoming lighter* or *Your head feels tired*. See IDEOMOTOR THEORY. See also CHALLENGE SUGGESTION; HYPNOTIC RIGIDITY.

**ideomotor theory** the hypothesis that actions are evoked impulsively by mental representations and are carried out spontaneously in the absence of inhibition. Ideomotor theory is the basis of most early theories of hypnotic suggestion. [introduced by British physiologist William Benjamin Carpenter (1813–1885)]

**idio-** *combining form* distinct or private.

**idiocentric** **1.** *adj.* denoting interest in or focus on one's

self rather than on other objects or people. **2.** *n.* an individual who is dispositionally predisposed to put his or her personal interests and motivations before the interests and goals of other people and other groups. Idiocentrics are more likely to describe themselves in terms of personal qualities and traits rather than memberships and roles. See also EGOCENTRISM; INDIVIDUALISM. Compare ALLOCENTRIC. —**idiocentrism** *n.*

**idiocy** *n.* an obsolete name for PROFOUND MENTAL RETARDATION.

**idiodynamics** *n.* **1.** the concept that the individual is primarily responsible for selecting stimuli and organizing responses. Individuals attend to those aspects of the environment they deem relevant, rather than responding to whatever stimuli are present and detectable. **2.** a personality theory that emphasizes one's unique life experiences (one's IDIOVERSE), the relevance of psychodynamic factors, and the role of creativity in one's search for personal integration. [proposed by Saul ROSENZWEIG]

**idiogamist** *n.* a person who is capable of full sexual response only with his or her spouse and is sexually incapable or inadequate with other partners. An idiogamist is usually a man who cannot obtain or maintain penile erection with any partner other than his wife (or, sometimes, women who resemble his wife).

**idiogenesis** *n.* origin without evident cause, particularly the origin of an IDIOPATHIC disease.

**idioglossia** *n.* **1.** a synonym for CRYPTOPHASIA. **2.** the omission, substitution, and distortion of so many sounds that speech is rendered unintelligible. Also called **idiolalia**.

**idiographic** *adj.* relating to the description and understanding of an individual case, as opposed to the formulation of NOMOTHETIC general laws describing the average case that can then be applied to the single case. U.S. psychologists Kenneth MacCorquadale (1919–1986) and Paul Everett MEEHL identified these as two contrasting traditions in explaining psychological phenomena. An **idiographic approach** involves the thorough, intensive study of a single person or case in order to obtain an in-depth understanding of that person or case, as contrasted with a study of the universal aspects of groups of people or cases. In those areas of psychology in which the individual person is the unit of analysis (e.g., in personality, developmental, or clinical psychology), the idiographic approach has appeal because it seeks to characterize a particular individual, emphasizing that individual's characteristic traits (i.e., **idiographic traits** or **unique traits**) and the uniqueness of the individual's behavior and adjustment, rather than to produce a universal set of psychological constructs that might be applicable to a population.

**idiolalia** *n.* see IDIOGLOSSIA.

**idiolect** *n.* a DIALECT spoken at the level of an individual. In one sense, all speakers have an idiolect because no two people use their native language in the same way. In another, the term is reserved for the most idiosyncratic forms of personal language use, especially those involving eccentricities of construction or vocabulary. An idiolect of this kind may be developed by a person who acquires a second language unsystematically, especially if this occurs in an unusual or isolated learning environment (see INTERLANGUAGE; FOSSILIZATION). Some poets and writers also develop distinctive idiolects in their writings. —**idiolectal** *adj.*

**idiom** *n.* a fixed phrase established by usage whose mean-

ing cannot be deduced from the meanings of its individual words, such as *to kick the bucket*, meaning “to die.” Idioms are sometimes known as **frozen forms** because they have a fixed structure that cannot be varied according to the usual grammatical rules. For example, *The old man kicked the bucket* cannot be changed to *The bucket was kicked by the old man* without losing the idiomatic sense.

**idiopathic** *adj.* without known cause or of spontaneous origin. The term usually denotes diseases whose etiologies are obscure, such as some forms of epilepsy.

**idiopathic epilepsy** see EPILEPSY.

**idiophrenic** *adj.* denoting a mental disorder that is caused by a disease of the brain.

**idioretinal light** an illusion of shades of gray observed in a dark environment. The effect is caused by chemical changes in the retina or brain cells rather than by the wavelength of visible light.

**idiosyncrasy** *n.* **1.** a habit or quality of body or mind peculiar to an individual. **2.** an abnormal response to an agent (e.g., a drug) that is peculiar to an individual. —**idiosyncratic** *adj.*

**idiosyncrasy-credit model** an explanation of the leniency that groups sometimes display when high-status members violate group norms. This model assumes that such individuals, by contributing to the group in significant ways and expressing loyalty to it, build up **idiosyncrasy credits**, which they “spend” whenever they make errors or deviate from the group’s norms. So long as their actions do not completely deplete their supply of credits, their infractions will not undermine their status in the group. [developed by U.S. psychologist Edwin P. Hollander (1927– )]

**idiosyncratic classification** in classification tasks, the grouping of items that do not appear to share physical or conceptual characteristics. Also called **random classification**. Compare COMPLEMENTARY CLASSIFICATION; CONCEPTUAL CLASSIFICATION; PERCEPTUAL CLASSIFICATION.

**idiosyncratic intoxication** a condition characterized by sudden and extreme changes in personality, mood, and behavior following the ingestion of an amount of alcohol usually considered to be too little to account for the degree of the changes. It may include extreme excitement, impulsive and aggressive behavior (at times to the point of extreme violence), persecutory ideas, disorientation, and hallucinations. The episode ends when the individual falls into a deep sleep, after which there is often complete loss of memory for it. Some researchers believe that the condition may be related to stress or may be due in part to a psychomotor seizure triggered by alcohol. Also called **mania a potu**; **pathological intoxication**. See also FUROR.

**idiosyncratic reaction** an unexpected reaction to a drug, resulting in effects that may be contrary to the anticipated results. The term generally refers to an extreme sensitivity or an extreme insensitivity to a particular agent. Such reactions may be genetically mediated.

**idiot** *n.* an obsolete name for a person with PROFOUND MENTAL RETARDATION. —**idiotic** *adj.*

**idiot savant** (*pl.* **idiots savants** or, less often, **idiot savants**) see SAVANT. [French, “learned idiot”]

**idioverse** *n.* in postmodern discourse (see POSTMODERNISM), the totality of a person’s unique sensations, percep-

tions, and understandings; that is, a person’s unique lived world.

**id psychology** in psychoanalysis, an approach that focuses on the unorganized, instinctual impulses contained in the ID that seek immediate pleasurable gratification of primitive needs. The id is believed to dominate the lives of infants and is frequently described as primitive and irrational until it is disciplined by the other two major components of the personality: the EGO and the SUPEREGO. Compare EGO PSYCHOLOGY.

**IDRA** abbreviation for INSANITY DEFENSE REFORM ACT.

**id resistance** in psychoanalysis, a form of RESISTANCE to therapy that is motivated by unconscious ID impulses, whose underlying motive is the REPETITION COMPULSION. Compare REPRESSION RESISTANCE; SUPEREGO RESISTANCE.

**IDS** abbreviation for INTEGRATED DELIVERY SYSTEM.

**IEP** abbreviation for INDIVIDUALIZED EDUCATION PROGRAM.

**I/E ratio** abbreviation for INSPIRATION–EXPIRATION RATIO.

**IFSP** abbreviation for INDIVIDUAL FAMILY SERVICE PLAN.

**if . . . then profiles** a methodology for describing personal dispositions in which within-person variations across social contexts are charted in terms of the behaviors evoked by particular situations. [developed by Austrian-born U.S. personality psychologist Walter Mischel (1930– ) and Japanese-born U.S. psychologist Yuichi Shoda]

**IGT** abbreviation for IOWA GAMBLING TASK.

**IHS** abbreviation for INDIAN HEALTH SERVICE.

**iich’aa** *n.* a CULTURE-BOUND SYNDROME found in Navaho communities, with symptoms similar to those of AMOK.

**I–It** *adj.* describing a relationship in which a subject (“I”) treats something or someone else exclusively as an impersonal object (“It”) to be used or controlled. German Jewish philosopher Martin Buber (1878–1965), who originated the term, maintained that this type of relationship between people stands in the way of human warmth, mutuality, trust, and group cohesiveness. Compare I–THOU.

**IKBS** abbreviation for INTELLIGENCE KNOWLEDGE-BASED SYSTEM.

**ikota** *n.* see MYRIACHIT.

**ILD** abbreviation for interaural level differences. See BINAURAL CUE.

**iliohypogastric nerve** one of the nerves that extend from the spinal cord in the lumbar region, with branches that innervate the skin of the gluteal and lower abdominal regions.

**ilioinguinal nerve** a nerve with branches that extend into the genitalia. In the male, the ilioinguinal nerve follows the spermatic cord through the inguinal ring and sends branches into the penis and scrotum. In the female, this nerve extends to the mons pubis and the labia majora.

**illegitimacy** *n.* **1.** the status of a child whose parents were unmarried at the time of birth. In Western societies, the term has fallen into virtual disuse with changing family structures (e.g., cohabiting but unmarried parents, SINGLE MOTHERS BY CHOICE), the fading of the stigma formerly attached to illegitimacy, and the disappearance of most legal distinctions between legitimate and illegitimate children. **2.** the state of being unlawful, improper, or contrary to reason and logic. —**illegitimate** *adj.*

**illicit** *adj.* illegal: particularly referring to psychoactive drugs that have few or no legitimate medical uses or that are not legally available to the person using them. The term may also refer to substance use and other behavior that is contrary to social convention or custom or is otherwise prohibited or disapproved of, as in an *illicit sexual relationship*.

**Illinois Test of Psycholinguistic Abilities (ITPA)** a norm-referenced test for children ages 5 to 13 years and designed to measure spoken and written linguistic abilities considered important in communication and learning disorders. It currently consists of 12 subtests: spoken analogies, spoken vocabulary, morphological closure, syntactic sentences, sound deletion, rhyming sequences, sentence sequencing, written vocabulary, sight decoding, sound decoding, sight spelling, and sound spelling. First published in 1961 as an experimental edition, the ITPA is now in its third edition (published in 2001). [originally developed by U.S. psychologists Samuel Alexander Kirk (1904–1996) and James Jerome McCarthy (1927–2012) at the University of Illinois]

**illiteracy** *n.* **1.** an inability to read, write, or both. **Functional illiteracy** is a reading and writing skill level that is inadequate for performing normal tasks of daily living. **2.** a lack of education or knowledge in a particular field of education or, more generally, evidence of social and educational ineptitude. —**illiterate** *adj.*

**illness** *n.* the experience of sickness or lack of well-being of body or mind.

**illness anxiety disorder** in *DSM–5*, a disorder characterized by high anxiety about one's health, by excessive preoccupation with having an illness or acquiring it, and by behaviors associated with the presumed or feared condition (e.g., repeatedly checking oneself for possible signs of illness), yet with no significant somatic symptoms that would warrant such concern. One of two replacement diagnoses for *HYPOCHONDRIASIS*, illness anxiety disorder is determined based only on this set of criteria and does not also apply to the presence of both high health anxiety and significant somatic symptoms. See *SOMATIC SYMPTOM DISORDER*.

**illness behavior** behaviors, attitudes, and emotions exhibited by individuals during the course of a physical or mental illness. It includes the perception of feeling ill, the expression of illness-related concerns to others, changes in functioning, and utilization of health care services.

**illocutionary act** in the theory of *SPEECH ACTS*, the act that is performed by saying something (e.g., asking, ordering, threatening), as opposed to the act of speaking itself (the **locutionary act**) or the act of causing a particular effect on others (e.g., persuading, amusing, inspiring) as a result of speech (the **perlocutionary act**). In practice, most utterances involve the performance of all three acts simultaneously. See also *PERFORMATIVE*. [first described by British philosopher John Longshaw Austin (1911–1960)]

**illogicality** *n.* a tendency to make unwarranted or faulty inferences, often characteristic of delusional thinking and speech. —**illogical** *adj.*

**illuminance** *n.* (symbol: *E*) the light (luminous flux) falling on a unit area of a surface. The standard unit of illuminance is the *LUX*.

**illumination** *n.* **1.** the act of lighting or casting light or the state of being lighted. **2.** a moment of insight, such as

about the nature and processes of an interpersonal relationship, the solution to a problem, or the understanding of an event. See also *AHA EXPERIENCE*; *EPIPHANY*.

**illumination conditions** the types of illumination (taking into account such factors as intensity and absence of glare) available within an environment, particularly as related to suitability for certain tasks and the comfort of those performing them.

**illumination standards** the amounts of illumination recommended for effective performance of certain tasks, as determined by the Illuminating Engineering Society of North America. The illumination standards were formerly expressed in foot-candles but are now expressed in lux.

**illumination unit** formerly, the amount of light produced by one *FOOT-CANDLE*; now replaced by the *LUX*.

**illuminism** *n.* an exalted hallucinatory state in which the person carries on conversations with imaginary, often supernatural, beings.

**illusion** *n.* **1.** a false sensory percept. Illusions of the senses, such as *VISUAL ILLUSIONS*, result from the misinterpretation of sensory stimuli. For example, parallel railroad tracks appear to meet in the distance (see *ALLEY PROBLEM*; *LINEAR PERSPECTIVE*). Other examples of visual illusions are *APPARENT MOVEMENT*, *CONTRAST ILLUSIONS*, *distortion illusions* (such as the *HERING ILLUSION*, *MÜLLER-LYER ILLUSION*, *POGGENDORF ILLUSION*, *PONZO ILLUSION*, and *ZÖLLNER ILLUSION*), and the *PANUM PHENOMENON*. Illusions involving other senses include *ARISTOTLE'S ILLUSION*. All of these illusions occur under ordinary conditions. The distorted percepts that may accompany abnormal conditions, such as delirium and schizophrenia, or that occur in those taking mind-altering drugs are more properly called *HALLUCINATIONS*. **2.** a distortion in memory (see *MEMORY ILLUSION*), such as *DÉJÀ VU*. **3.** more generally, any false belief or mistaken idea. —**illusory** *adj.*

**illusion of agency** the illusion of controlling an event that is not actually under one's control. Also called **illusion of will**. [defined by U.S. psychologist Daniel M. Wegner (1948– )]

**illusion of control** a false belief that external events result from or are governed by one's own actions or choices. A sports fan who wears the same "lucky" shirt for each home game in order to give his or her team an edge provides an example. See *POSITIVE ILLUSION*. [coined in 1975 by U.S. social and clinical psychologist Ellen Langer (1947– )]

**illusion of doubles** see *CAPGRAS SYNDROME*.

**illusion of orientation** misidentification of environmental or other stimuli, such as confusion about one's location or the identity of people, due to impaired consciousness (e.g., during delirium).

**illusion of unique invulnerability** the false belief that one is somehow safeguarded from the dangers and misfortunes that afflict other people. The illusion may cause people to disregard such safety measures as seat belts or condoms. [coined in 1983 by U.S. social psychologist Linda Perloff (1955– )]

**illusion of will** see *ILLUSION OF AGENCY*.

**illusory conjunction** the attribution of a characteristic of one stimulus to another stimulus when the stimuli are presented only briefly. Illusory conjunctions are most common with visual stimuli when, for example, the color



of one form can be attributed to a different form. However, illusory conjunctions can also occur for other sensory stimuli.

**illusory contour** see SUBJECTIVE CONTOUR.

**illusory correlation** **1.** the appearance of a relationship that in reality does not exist. **2.** an overestimation of the degree of relationship (i.e., correlation) between two variables. For example, if an unusual action occurred at the same time that an adolescent was present in a group of adults, the assumption that the action was carried out by the adolescent would be an illusory correlation.

**illusory covariation** an apparent predictable or systematic correlation between two phenomena (objects or events) that in fact does not exist. See CO-OCCURRENCE; CO-VARIATION.

**illusory memory** see FALSE MEMORY.

**illusory movement** see APPARENT MOVEMENT.

**illy (illie)** *n.* see FRY.

**iloperidone** *n.* an ATYPICAL ANTIPSYCHOTIC agent of the benzisoxazole class that is active at a range of receptors. Its efficacy is thought to result particularly from its dopamine D2 and serotonin 5-HT<sub>2</sub> receptor antagonism. Its wide-ranging receptor activity is thought to confer antipsychotic activity with fewer EXTRAPYRAMIDAL SYMPTOMS and with a somewhat more favorable metabolic profile than is seen with other atypical antipsychotics. U.S. trade name: **Fanapt**.

**im** abbreviation for intramuscular.

**image** *n.* **1.** a likeness or cognitive representation of an earlier sensory experience recalled without external stimulation. For example, remembering the shape of a horse or the sound of a jet airplane brings to mind an image derived from earlier experiences with these stimuli. **2.** a representation of an object produced by an optical system. See also RETINAL IMAGE.

**imageless thought** thinking that occurs without the aid of IMAGES or sensory content. The WÜRZBURG SCHOOL upheld the existence of imageless thought on the basis of introspective reports, such as experimental participants' stated ability to name a piece of fruit without picturing it. Edward Bradford TITCHENER and others in the structural school opposed this view (see STRUCTURALISM). See BEWUSSTSEINSLAGE.

**imagery** *n.* **1.** cognitive generation of sensory input from the five senses, individually or collectively, which is recalled from experience or self-generated in a nonexperienced form. **2.** mental images considered collectively, or the particular type of imagery characteristic of an individual, such as VISUAL IMAGERY. See IMAGERY CUE; IMAGERY TRAINING; KINESTHETIC IMAGERY.

**imagery code** the ENCODING of an object, idea, or impression in terms of its visual imagery. For example, the item "typewriter" might be remembered as a mental picture of a typewriter, rather than as the word *typewriter*. Compare SEMANTIC CODE.

**imagery cue** a cognitively created signal used to direct behavior. Examples are mental images of a stop sign when one has negative thoughts or of a butterfly when one wants to exhibit delicate, free-flowing motion in a skating routine. See also THOUGHT STOPPING.

**imagery effect** the finding that imaging the referent of

a word (e.g., envisioning an airplane when asked to study the word *airplane*) produces better memory for the word than does simply reading it.

**imagery rehearsal therapy** a short-term cognitive behavior intervention for individuals experiencing chronic nightmares (particularly veterans with trauma-related sleep problems) in which participants write about their recurring nightmares, edit these stories (or scripts) to include more positive images, and then rehearse the images from the new, more positive scripts. Rehearsal is both self-guided (e.g., 5–20 minutes daily) and therapist-guided, and the new script eventually replaces or transforms the nightmare. Imagery rehearsal therapy typically is conducted in a small-group format over two 3-hour sessions, but variations in the number of sessions and duration of treatment are common. Use of the technique is associated with reduced nightmare frequency and intensity, decreased distress and anxiety, and enhanced sleep quality. [developed in 2001 by U.S. physician and sleep disorders specialist Barry Krakow]

**imagery technique** the use of imagined scenes as a therapeutic technique, often in HYPNOTHERAPY but also in therapies that use breathing and relaxation techniques to reduce stress or anxiety. For example, an anxious client may be directed to imagine a placid scene recalled from memory, such as sitting, relaxed and calm, on a beach. The technique may be used by an individual in stressful situations, such as a nervous passenger in an aircraft. See also GUIDED IMAGERY; GUIDED AFFECTIVE IMAGERY.

**imagery training** a series of exercises to improve the clarity, vividness, and controllability of the images from the five senses, first individually, then in combination.

**imaginal exposure** a type of EXPOSURE THERAPY used for treating individuals with anxiety disorders (e.g., phobias, obsessive-compulsive disorder, posttraumatic stress disorder). Vivid imagery evoked through speech is used by the therapist to expose the client mentally to an anxiety-evoking stimulus. Compare IN VIVO EXPOSURE.

**Imaginary** *n.* the realm of images; one of three aspects of the psychoanalytic field defined by French psychoanalyst Jacques Lacan (1901–1981). The Imaginary is that state of being in which the infant has no sense of being a subject distinct from other people or the external world and no sense of his or her place in human culture. After the infant's entry into the SYMBOLIC (the world of language, culture, and morality), he or she can return to the wholeness of the Imaginary only in fantasy. See also REAL.

**imaginary audience** the belief of an adolescent that others are constantly focusing attention on him or her, scrutinizing behaviors, appearance, and the like. The adolescent feels as though he or she is continually the central topic of interest to a group of spectators (i.e., an audience) when in fact this is not the case (i.e., an imaginary audience). It is an early adolescent construct reflective of acute self-consciousness and is considered an expression of ADOLESCENT EGOCENTRISM. [first described by U.S. developmental psychologist David Elkind (1931– )]

**imaginary companion** a fictitious person, animal, or object created by a child or adolescent. The individual gives the imaginary companion a name, talks to it, shares feelings, pretends to play with it, and may use it as a scapegoat for his or her misdeeds. The phenomenon is considered an elaborate but common form of SYMBOLIC PLAY. Also called **invisible playmate**.

**imagination** *n.* the faculty that produces ideas and images in the absence of direct sensory data, often by combining fragments of previous sensory experiences into new syntheses. See also CREATIVE IMAGINATION. —**imaginative** *adj.* —**imagine** *vb.*

**imagination inflation** the increased likelihood that a person will judge an event as having actually occurred (e.g., during childhood) when he or she imagines the event before making such a judgment.

**imaging** *n.* **1.** the process of scanning the brain or other organs or tissues to obtain an optical image that can be used for medical and research purposes, such as locating abnormalities or studying anatomy and function. Techniques used include COMPUTED TOMOGRAPHY, POSITRON EMISSION TOMOGRAPHY (PET), anatomical MAGNETIC RESONANCE IMAGING (aMRI), and FUNCTIONAL MAGNETIC RESONANCE IMAGING (fMRI). The imaging may be either static or dynamic. See also BRAIN IMAGING; NUCLEAR IMAGING. **2.** in therapy, the use of suggested mental images to control body function, including the easing of pain. See also IMAGERY TECHNIQUE; VISUALIZATION.

**imago** *n.* an unconscious mental image of another person, especially the mother or father, that influences the way in which an individual relates to others. The imago is typically formed in infancy and childhood and is generally an idealized or otherwise not completely accurate representation. The term was originally used by Sigmund FREUD and the early psychoanalysts, and its meaning has carried over into other schools of psychology and psychotherapy.

**imago therapy** a type of therapy for relationship problems based on the theory that people carry unconscious composite images (see IMAGO) of the character traits and behaviors of their primary childhood caretakers that impel them to select certain partners and to behave in ways that are meant to heal earlier emotional wounds but that actually create relationship problems. Structured exercises, either in groups or in COUPLES THERAPY, reveal the imago and help individuals learn to become less defensive and more compassionate toward partners as well as themselves.

**imbecility** *n.* formerly, a moderate to severe level of intellectual disability characterized by an IQ between 25 and 50 to 55 and social and practical skills similar to those of 2- to 7-year-olds.

**imipramine** *n.* a TRICYCLIC ANTIDEPRESSANT (TCA) with a tertiary amine molecular structure. It was originally synthesized in the hope of creating an effective antipsychotic but was observed to be ineffective in reducing psychotic symptoms. It did, however, seem to help individuals with severe depression and was subsequently marketed as an antidepressant. It is considered the prototype TCA, and like all tricyclic agents, its use as an antidepressant has been largely supplanted by less toxic drugs. It retains a therapeutic role as a sedative and adjunct in the management of neuromuscular or musculoskeletal pain. U.S. trade name: **Tofranil**.

**imitation** *n.* the process of copying the behavior of another person, group, or object, intentionally or unintentionally. It is a basic form of learning that accounts for many human skills, gestures, interests, attitudes, role behaviors, social customs, and verbal expressions, but it can also take pathological form, as in ECHOLALIA and ECHOPRAXIA. Some theorists propose that true imitation requires that an observer be able to take the perspective of

the model. This contrasts with other forms of SOCIAL LEARNING, such as EMULATION, LOCAL ENHANCEMENT, and MIMICRY. There is controversy concerning whether true imitation occurs in nonhuman animals or whether they either merely emulate the actions of others or are attracted to the location of others and by chance appear to show imitation. —**imitate** *vb.*

**imitation game** see TURING TEST.

**imitative learning** the first stage of CULTURAL LEARNING, which occurs when the learner internalizes aspects of the model's behavioral strategies and intentions for executing the behavior. According to cultural learning theory, imitative learning is followed by INSTRUCTED LEARNING and COLLABORATIVE LEARNING. [proposed by U.S. psychologist Michael Tomasello (1950– ) and colleagues]

**immanent justice** the belief that rules are fixed and immutable and that punishment automatically follows misdeeds regardless of extenuating circumstances. Children up to the age of 8 equate the morality of an act only with its consequences; not until later do they develop the capacity to judge motive and subjective considerations. See MORAL ABSOLUTISM; MORAL REALISM. Compare DISTRIBUTIVE JUSTICE. [postulated by Jean PIAGET]

**immaterialism** *n.* the philosophical position that denies the independent existence of matter as a substance in which qualities (see PRIMARY QUALITY; SECONDARY QUALITY) might inhere. Sensible objects are held to exist as the sum of the qualities they produce in the perceiving mind, with no material substratum. The best known philosophy of this kind is that of George BERKELEY. It is difficult to distinguish such a position from IDEALISM, which holds that mind is essential to all reality and that things and qualities exist only as perceived. Compare MATERIALISM.

**immature science** a science that has not advanced to the stage of development characteristic of a PREPARADIGMATIC SCIENCE or a NORMAL SCIENCE. [proposed by U.S. philosopher of science Thomas Kuhn (1922–1996)]

**immaturity** *n.* a state of incomplete growth or development (e.g., neural immaturity). The term, however, is often used to describe childish, maladaptive, or otherwise inappropriate behaviors, particularly when indicative of a lack of age-relevant skills.

**immediacy behavior** any action, movement, or physical stance that indicates comfort, intimacy, or a close relationship between two people, for example, EYE CONTACT or touching.

**immediate experience** see MEDIATE EXPERIENCE.

**immediate gratification** the experience of satisfaction or receipt of reward as soon as a response is made. See also PLEASURE PRINCIPLE. Compare DELAY OF GRATIFICATION.

**immediate memory** a type or stage of memory in which an individual recalls information recently presented, such as a street address or telephone number, although this information may be forgotten after its immediate use. Immediate memory is frequently tested in assessing intelligence or neurological impairment. See also SHORT-TERM MEMORY.

**immediate recall test** a test in which the participant is tested for recall (reproduction) of stimuli immediately after the stimuli are presented.

**immobility** *n.* a condition in which an organism shows

no signs of motion, as in DEATH FEIGNING or FREEZING BEHAVIOR. This may occur in response to sudden stimuli that might be associated with a predator, or it may be elicited in a fear-conditioning study as a learned response to an aver- sively conditioned signal. —**immobile** *adj.*

**immune response** the response of the IMMUNE SYSTEM to invasion of the body by foreign substances (ANTIGENS). Nonspecific immune responses include inflammation (with the release of HISTAMINE) and PHAGOCYTOSIS of invading microbes, tissues, and so forth by LEUKOCYTES (white blood cells). The two types of specific immune response are **hu- moral immunity**, in which B LYMPHOCYTES produce ANTI- BODIES that either directly destroy antigens or enhance the destruction of antigens by other cells; and **cell-mediated immunity**, mediated by T lymphocytes, which attack anti- gens directly and specifically. See also ANTIGEN–ANTIBODY REACTION.

**immune system** a complex system in vertebrates that helps protect the body against pathological effects of for- eign substances (ANTIGENS), such as viruses and bacteria. The organs involved include the bone marrow and THY- MUS, in which LYMPHOCYTES—the principal agents respon- sible for specific IMMUNE RESPONSES—are produced, together with the spleen, lymph nodes, and other lymphoid tissues and various chemicals (e.g., CYTOKINES) that med- iate the immune response. The immune system interacts with both the nervous system and the endocrine system. See also PSYCHONEUROIMMUNOLOGY.

**immunity** *n.* the ability of the body to resist infection, based on the actions of the IMMUNE SYSTEM in mounting IMMUNE RESPONSES. **Active immunity** arises when immune cells (see LYMPHOCYTE) produce, and remain able to pro- duce, appropriate antibodies following infection or deliber- ate stimulation (IMMUNIZATION). **Passive immunity** is conferred by the introduction of antibodies from another organism (e.g., via COLOSTRUM). **Innate immunity** does not require prior contact with invading microorganisms or tis- sues and involves nonspecific immune responses. See also ANTIGEN–ANTIBODY REACTION.

**immunization** *n.* the process of conferring immunity by other than natural means. Active immunity is acquired by inoculation or vaccination, which involves the injection of a specific, prepared antigen to induce the production of natural antibodies by the body's immune system. Passive immunity, which is short-lived (1–6 months), is acquired by the injection of prepared antibodies obtained from an animal or human already immune to the disease in ques- tion.

**immunocytochemistry** *n.* techniques that use labeled antibodies specific to particular proteins to localize those proteins in cells or tissues. The label creates a visible mark, thus enabling visualization and localization of the compo- nent. Also called **immunohistochemistry**.

**immunology** *n.* the branch of medicine that specializes in the study of IMMUNITY and immune reactions (e.g., allergies and hypersensitivities). —**immunological** *adj.* —**immunologist** *n.*

**Imodium** *n.* a trade name for LOPERAMIDE.

**impact analysis** a quantitative analytic procedure used to assess the net success or failure of a program, usually through controlled experimentation. It is appropriate only if the program's objectives are specifiable and measurable, the program is well implemented for its intended partici-

pants, and the outcome measures are reliable and valid. Also called **impact assessment**. See also OUTCOME EVALU- ATION; SUMMATIVE EVALUATION.

**impaired judgment** difficulty in forming evaluative opinions or reaching conclusions concerning available evi- dence, often about people and courses of action. Impaired judgment may lead to seemingly irrational actions and risk-taking behaviors. It has been thought of as both a di- agnostic and a predictive criterion for delirium, dementia, and substance-related disorders, but its diagnosis and mea- surement are hindered by the lack of an agreed operational definition. Various fields have contributed research on this issue, including developmental and industrial psychology, experimental psychology (perception), medicine, and legal decision making.

**impairment** *n.* a decrement in the body's typical physio- logical or psychological functioning.

**impairment index** a measure of impairment on a se- ries of cognitive tests. The best known such index is the **Halstead–Reitan Impairment Index**, which reflects the per- centage of tests in the impaired range; the higher the per- centage, the greater the likelihood of brain damage or dysfunction. This index may also be affected by poor effort, dissimulation, or psychogenic states.

**impeachment evidence** evidence used to attack or discredit testimony given by an individual in court.

**imperative** *n.* **1.** any demand that is critical or pressing. See CATEGORICAL IMPERATIVE; ETHICAL IMPERATIVE. **2.** in psychoanalytic theory, a demand of the SUPEREGO that rep- resents the commanding voice of parental or social rule and operates on an unconscious level to direct the behavior of the individual. **3.** in linguistics, the MOOD of a verb used to issue commands or make requests, as in *Get off!* or *Please come back*. Compare INDICATIVE; INTERROGATIVE; SUBJUNC- TIVE.

**imperceptible** *adj.* below THRESHOLD. For example, an **imperceptible difference** is a physical difference between two stimulus events that is below an observer's DIFFERENCE THRESHOLD. This results in the two events being judged as the same psychologically when they are not the same phys- ically.

**impersonation** *n.* **1.** the deliberate assumption of an- other person's identity, usually as a means of gaining sta- tus or other advantage. See also IMPOSTOR SYNDROME. **2.** the imitation of another person's behavior or mannerisms, which is sometimes done for its corrective or therapeutic effect on one's own behavior (e.g., to gain insight).

**impingement** *n.* **1.** in the OBJECT RELATIONS THEORY of British psychoanalyst Donald Winnicott (1896–1971), an experience in the infant's maternal environment that is felt to be disturbing. Such experiences are posited to lead to the development of a FALSE SELF because the infant may de- velop through a series of reactions to impingements rather than becoming aware of his or her true tendencies and ca- pacities by discovering the environment on his or her own terms. **2.** in perception, impact or contact with a sensory receptor. —**impinge** *vb.*

**implantation** *n.* **1.** the attachment of a fertilized ovum to the uterine wall at the BLASTOCYST stage of development, 6 to 8 days after ovulation. **2.** the placing of a drug (e.g., a subcutaneous implant) or an object (e.g., an artificial pace- maker) within the tissues of the body.

**implanted memory** a person's apparent recollection of

an event that never occurred but that someone else has convinced the person did occur. See FALSE MEMORY.

**implemental mind-set** see MIND-SET.

**implementation evaluation** an evaluation approach that focuses on the way a program was delivered and whether it reached its intended recipients.

**implicature** *n.* in linguistics, a PROPOSITION that is not stated explicitly in an utterance and is not a condition for its truth but can nevertheless be inferred from it. The types of implicature recognized in PRAGMATICS and DISCOURSE ANALYSIS go beyond those recognized as valid in formal logic. For example, the statement *Mary is my dad's wife* would imply in most contexts *Mary is not my mother*, even though the first proposition cannot be said to entail the second. Compare PRESUPPOSITION. See also CONVERSATIONAL INFERENCE; INDIRECT SPEECH ACT. —**implicative** *adj.*

**Implicit Association Test (IAT)** an IMPLICIT ATTITUDE MEASURE introduced in 1998 in which participants perform a series of categorization tasks on a computer for a set of words representing an ATTITUDE OBJECT (e.g., words such as *ant*, *fly*, and *grasshopper* representing the attitude object of insects). Attitudes are assessed by having participants perform a joint categorization task in which they must judge whether the target words are members of a specified category (e.g., insects) as well as whether a second set of intermixed words, selected to be highly evaluative in nature, are positive or negative. In one phase of the test, the computer response key used to indicate membership in the specified category is the same as that used to indicate a positive word. In a different phase, the key used to indicate membership in the specified category is the same as that used to indicate a negative word. If attitudes are positive, judging the target words should be faster when the same response key is used for category membership and positive words than when the same response key is used for category membership and negative words. Negative attitudes produce the opposite pattern. [originally developed by U.S. psychologist Anthony G. Greenwald (1939– ) and his colleagues]

**implicit attitude** a relatively enduring and general evaluative response of which a person has little or no conscious awareness. Compare EXPLICIT ATTITUDE.

**implicit attitude measure** any procedure for evaluating attitudes in which a person is not consciously aware of the fact that his or her attitude toward something or someone is being assessed. Measures of this type are generally INDIRECT ATTITUDE MEASURES. Compare EXPLICIT ATTITUDE MEASURE.

**implicit behavior** **1.** behavior that cannot be observed directly, such as a cognitive process or emotional reaction. **2.** behavior that cannot be observed without the aid of instruments, such as subtle physiological responses. **3.** behavior of which the individual is not consciously aware.

**implicit causality** the property of VERBS such that causality is implicit either in the AGENT or the PATIENT of the verb.

**implicit cognition** any knowledge or information processing of which an individual is not explicitly aware.

**implicit emotion regulation** see EMOTION REGULATION.

**implicit knowledge** see TACIT KNOWLEDGE.

**implicit leadership theories** perceivers' general as-

sumptions about the traits, characteristics, and qualities that distinguish leaders from the people they lead. Like the LEADERSHIP THEORIES developed by psychologists, these cognitive frameworks tend to include lawlike generalities about leadership and more specific hypotheses about the types of qualities that characterize most leaders. However, unlike scientific theories, they are based on intuition and personal experience and are usually not stated openly. See also ATTRIBUTION THEORY OF LEADERSHIP; LEADER CATEGORIZATION THEORY; LEADER PROTOTYPE.

**implicit learning** learning of a cognitive or behavioral task that occurs without intention to learn or awareness of what has been learned. Implicit learning is evidenced by improved task performance rather than as a response to an explicit request to remember. See also IMPLICIT MEMORY.

**implicit measure** a measurement of a psychological construct that is obtained while the individual being assessed is unaware that the measurement is taking place, often used to assess attitudes, stereotypes, and emotions in social cognition research. Typically, an implicit measure is assessed as a response outcome of an experimental procedure in which the participant is engaged in a cognitive task. For example, a word-stem completion task might be employed to assess emotion implicitly such that *jo\_* could be completed to form a positive emotional word (e.g., *joy*) or a neutral word (e.g., *jog*).

**implicit memory** memory for a previous event or experience that is produced indirectly, without an explicit request to recall the event and without awareness that memory is involved. For instance, after seeing the word *store* in one context, a person would complete the word fragment *st\_r\_* as *store* rather than *stare*, even without remembering that *store* had been recently encountered. Implicit memory can exist when conscious or EXPLICIT MEMORY fails, as occurs in amnesia and brain disease. This term, proposed in 1985 by Canadian psychologist Peter Graf and U.S. psychologist Daniel L. Schacter (1952– ), is used interchangeably with NONDECLARATIVE MEMORY.

**implicit memory test** a memory test that elicits non-conscious memories by instructing participants to respond with whatever first comes to mind. Despite the participants' lack of conscious recollection of prior events, the tests show the effects of these events in terms of the speed of participant response or the content of the memories they retrieve. The tests are often organized into three categories: perceptual, conceptual, and procedural. They can also be verbal or nonverbal. Examples of implicit memory tests include WORD-STEM COMPLETION (perceptual, verbal); picture-fragment identification (perceptual, nonverbal); GENERAL KNOWLEDGE TESTS and CATEGORY PRODUCTION TESTS (conceptual, verbal); object categorization (conceptual, nonverbal); reading inverted text (procedural, verbal); and MIRROR DRAWING (procedural, nonverbal). Also called **indirect memory test**. Compare EXPLICIT MEMORY TEST. See also CONCEPTUAL TEST; IDENTIFICATION–PRODUCTION DISTINCTION; PERCEPTUAL TEST.

**implicit personality theories** see NAIVE PERSONALITY THEORIES.

**implicit prejudice** a negative attitude, of which one is not consciously aware, against a specific social group. Compare EXPLICIT PREJUDICE.

**implicit process** a COGNITIVE PROCESS that is not available to introspection and cannot be described accurately, even under optimal conditions. Compare EXPLICIT PROCESS.

**implicit response** see COVERT RESPONSE.

**implicit self theory** the proposal that people hold a self-belief that psychological attributes (e.g., personality, emotion, intelligence) are either fixed, essential qualities that are impossible to control (**entity theory**) or are more malleable, controllable, and able to be developed gradually (**incremental theory**). These self-beliefs imply certain expectancies, which in turn guide behavior. In particular, beliefs about controllability guide the way people construe their reality and influence their motivation to engage in self-regulation. [formulated by U.S. personality psychologist Carol S. Dweck (1946– ) in her analysis of cognition, personality, and motivation]

**implosive therapy** a technique in BEHAVIOR THERAPY that is similar to FLOODING but distinct in generally involving imagined stimuli and in attempting to enhance anxiety arousal by adding imaginary exposure cues believed by the therapist to be relevant to the client's fear. Also called **implosion therapy**. [developed by U.S. psychologists Thomas G. Stampfl (1923–2005) and Donald J. Levis (1936– )]

**importance of an attitude** the extent to which an individual personally cares about an ATTITUDE OBJECT or attaches psychological significance to it. Importance is related to ATTITUDE STRENGTH. See also CENTRALITY OF AN ATTITUDE; EGO INVOLVEMENT.

**impossible figure** a shape or form in which different components produce conflicting and mutually exclusive interpretations.

**impostor phenomenon** the situation in which highly accomplished, successful individuals paradoxically believe they are frauds who ultimately will fail and be unmasked as incompetent. The phenomenon originally was described in relation to a group of female college students who, despite stellar grades and test scores, nonetheless felt that most or all of their achievements had somehow been the result of chance or error. Follow-up studies showed that men as well as women are susceptible to impostor feelings and that early family conflict and lack of parental support may play an etiological role. Clinical symptoms often are associated with the phenomenon as well, including generalized anxiety, depression, and diminished self-esteem and self-confidence. Several instruments to measure the phenomenon exist: The **Harvey Impostor Phenomenon Scale (HIPS)**, developed in 1981 by U. S. clinical psychologist Joan C. Harvey, contains 14 self-descriptive statements to which participants respond using a 7-point LIKERT SCALE of 0 (*not at all true*) to 6 (*very true*); the **Clance Impostor Phenomenon Scale (CIPS)**, developed in 1985 by U.S. clinical psychologist Pauline Rose Clance, comprises 20 self-descriptive statements to which participants respond using a 5-point Likert scale of 1 (*not at all true*) to 5 (*very true*); and the **Perceived Fraudulence Scale (PFS)**, developed in 1991 by U.S. psychologists John Kolligian and Robert J. Sternberg (1949– ), includes 51 items and also uses a 7-point Likert-scale response format. Also called **impostor syndrome**. [introduced in 1978 by U.S. clinical psychologists Pauline Rose Clance and Suzanne A. Imes]

**impostor syndrome** **1.** a personality pattern characterized by PATHOLOGICAL LYING, which takes the form of fabricating an identity or a series of identities in an effort to gain recognition and status. See IMPERSONATION. **2.** see IMPOSTOR PHENOMENON.

**impotence** *n.* the inability of a man to complete the sex act due to partial or complete failure to achieve or main-

tain erection. This condition is called MALE ERECTILE DISORDER in psychiatric contexts and ERECTILE DYSFUNCTION in other clinical contexts. Impotence may also denote premature ejaculation, limited interest in sex, orgasm without pleasure, or coitus without ejaculation. —**impotent** *adj.*

**impoverished** *adj.* **1.** describing a stimulus that is lacking in complexity or information value. **2.** deficient in or deprived of certain qualities or lacking in richness because something essential is missing. For example, an **impoverished environment** offers few opportunities to engage in activity and does not provide adequate sensory and intellectual stimulation. See also INTELLECTUAL IMPOVERISHMENT. —**impoverishment** *n.*

**impression** *n.* **1.** the presumed effect of stimulation on the brain. **2.** a vague or unanalyzed judgment or reaction.

**impression formation** the process in which an individual develops a SCHEMA of some object, person, or group. Early research on impression formation demonstrated that impressions were often influenced by the PRIMACY EFFECT; more recent studies have focused on the roles played in the process by such factors as the perceiver's cognitive processes (e.g., how readily some types of ideas come to mind) and feelings (e.g., anger can predispose the perceiver to stereotype an individual).

**impressionism factor** in psychological aesthetics, a dimension of artistic style characterized by an emphasis on surface qualities and textures, such as effects of light or color. In studies of perceptions of art by Daniel E. BERLYNE, the impressionism factor is reflected in evaluation ratings that are highly positive for surface qualities and highly negative for beliefs, imagination, and lines.

**impression management** behaviors intended to control how others perceive oneself, especially by guiding them to attribute desirable traits to oneself. Typically, it is assumed that people attempt to present favorable images of themselves as a means of obtaining social rewards and enhancing self-esteem. Impression management has been offered as an alternative explanation for some phenomena that traditionally have been interpreted in terms of COGNITIVE DISSONANCE THEORY. Some psychologists distinguish impression management from SELF-PRESENTATION by proposing that impression management involves only deliberate, conscious strategies. [first described in 1959 by Canadian-born U.S. sociologist Erving Goffman (1922–1982)]

**imprinting** *n.* a simple yet profound and highly effective learning process that occurs during a CRITICAL PERIOD in the life of some animals. It was first described in 1873 by British naturalist Douglas A. Spalding (1840–1877) when he observed that newly hatched chicks tended to follow the first moving object, human or animal, that caught their attention. The term itself was introduced by Konrad LORENZ in 1937. Some investigators believe that such processes are instinctual; others regard them as a form of PREPAREDNESS.

**improvement rate** see DISCHARGE RATE.

**improvisation** *n.* in PSYCHODRAMA, the spontaneous acting out of problems and situations without prior preparation.

**IMPS** abbreviation for INPATIENT MULTIDIMENSIONAL PSYCHIATRIC SCALE.

**impuberism** *n.* **1.** a state of not having reached puberty because of age or delayed development. **2.** the continua-

tion of childhood characteristics into adolescence or adulthood. Also called **impuberty**.

**impulse** *n.* **1.** a sudden and compelling urge to act, often resulting in action without deliberation. Also called **impulsion**. See also IMPULSE-CONTROL DISORDER; IMPULSIVE. **2.** see NERVE IMPULSE. **3.** in psychoanalytic theory, the expression of PSYCHIC ENERGY from instinctual drives, such as sex and hunger.

**impulse control** the ability to resist an impulse, desire, or temptation and to regulate its translation into action.

**impulse-control disorder** a disorder characterized by a failure to resist impulses, drives, or temptations to commit acts that are harmful to oneself or to others. Examples include INTERMITTENT EXPLOSIVE DISORDER, KLEPTOMANIA, PATHOLOGICAL GAMBLING, PYROMANIA, and TRICHOTILLOMANIA. Other disorders that may involve problems of impulse control include substance use disorders, paraphilias, conduct disorders, and mood disorders.

**impulse-timing model** a model for the organization of a MOTOR PROGRAM in which the movement TRAJECTORY is determined by the amplitude and timing of force impulses produced by the AGONIST and ANTAGONIST muscles. See also EQUILIBRIUM-POINT MODEL.

**impulsion** *n.* see IMPULSE.

**impulsive** *adj.* describing or displaying behavior characterized by little or no forethought, reflection, or consideration of the consequences of an action, particularly one that involves taking risks. Compare REFLECTIVE. See also REFLECTION-IMPULSIVITY; SELF-CONTROL. —**impulsiveness** or **impulsivity** *n.*

**impulsive character** a personality pattern marked by a tendency to act hastily and without adequate reflection on the possible consequences.

**imputation** *n.* a procedure for filling in missing values in a data set before analyzing the resultant completed data set. There are several methods of imputation, including COLD-DECK IMPUTATION, HOT-DECK IMPUTATION, and MULTIPLE IMPUTATION.

**imu** *n.* a CULTURE-BOUND SYNDROME resembling LATAH, observed among the Ainu and Sakhalin women of Japan. It is characterized by an extreme STARTLE RESPONSE involving automatic movements, imitative behavior, infantile reactions, and obedience to command. See also JUMPING FRENCHMEN OF MAINE SYNDROME; MYRIACHIT.

**Imuran** *n.* a trade name for AZATHIOPRINE.

**in absentia** referring to legal proceedings against people conducted in their absence. [Latin, “in the absence”]

**inaccessibility** *n.* **1.** the state of being impossible to reach, approach, or use. **2.** unresponsiveness to external stimuli, most commonly associated with the state of withdrawal sometimes seen in autism and schizophrenia. —**inaccessible** *adj.*

**inadvertent plagiarism** see CRYPTOMNESIA.

**inanimate noun** see ANIMATE NOUN.

**inappetence** *n.* impaired appetite or desire, which is a frequent symptom of depression.

**inappropriate affect** emotional responses that are not in keeping with the situation or are incompatible with expressed thoughts or wishes, such as smiling when told

about the death of a friend. Extreme inappropriate affect is a defining characteristic of DISORGANIZED SCHIZOPHRENIA.

**inappropriate stimulus** a stimulus or condition that elicits a response not normally triggered by that stimulus. For example, pressing against one's closed eyelid elicits perception of lights; that is, a mechanical stimulus elicits a response in PHOTORECEPTORS that typically respond to light.

**Inapsine** *n.* a trade name for DROPERIDOL.

**inattention** *n.* a state in which there is a lack of concentrated or focused attention or in which attention drifts back and forth. See also SELECTIVE INATTENTION; PERCEPTUAL EXTINCTION.

**inattentional blindness** a failure to notice unexpected but perceptible stimuli in a visual scene while one's attention is focused on something else in the scene. This phenomenon occurs even when items are visible for several seconds. In two classic experiments, many participants focusing on judging the line lengths of a cross failed to notice a simultaneously presented square, and many focusing on counting the number of passes made by a basketball team failed to notice a person dressed in a gorilla suit walk by. Real-world examples are also common, such as magic tricks in which observers fail to see the magician's sleight of hand in front of them and accidents in which drivers fail to see others on the road. Various factors affect the rate of inattentional blindness, including the visual relationship of the unexpected item to other items, the meaningfulness of the unexpected item, and—most significantly—the observer's attentional SET and COGNITIVE LOAD: Inattentional blindness is especially pronounced for task-irrelevant stimuli and in situations with high task-processing demands. Some researchers have suggested that inattentional blindness is in fact a kind of **inattentional amnesia**, in which people consciously perceive unattended objects but quickly forget them. In this view, attention is critical not for engaging the perceptual processes but rather for encoding the products of those processes into short-term memory. See also ATTENTIONAL BLINDNESS; CHANGE BLINDNESS; REPETITION BLINDNESS; SELECTIVE PERCEPTION. [term coined in 1998 by U.S. psychologists Arien Mack (1931– ) and Irvin Rock (1922–1995)]

**in-basket test** a WORK-SAMPLE TEST used in management training and selection. The participant is given an assortment of items (letters, memos, reports) that might be found in a typical office in-basket and must take action on them as if he or she were on the job.

**inborn** *adj.* see INNATE.

**inborn error of metabolism** any biochemical disorder caused by a genetic defect. It may be expressed as a defect or deficiency in the structure or enzymatic function of a protein molecule or in the transport of a vital substance across a cell membrane. Examples of such errors include diabetes mellitus, gout, phenylketonuria, and Tay-Sachs disease. Also called **metabolic anomaly**.

**inbreeding** *n.* the mating of individuals that are closely related. Inbreeding increases the risk of perpetuating certain genetic defects in the family, as in consanguineous marriages. Inbreeding within small populations, such as geographically isolated populations, leads to increased frequency of particular mutations within such groups. This fact has been used to demonstrate the FOUNDER EFFECT for certain cancers and other disorders. Inbreeding studies have contributed to efforts to identify and test for muta-

tions predisposing to disease in some groups of people. Compare **OUTBREEDING**.

**inbreeding avoidance** the avoidance of breeding with close relatives in order to maintain genetic diversity. Several mechanisms that promote inbreeding avoidance have been identified. In some species, olfactory or vocal signals may provide information about genetic relatedness, but most often individuals simply avoid breeding with those who are most familiar. Some studies of **MATE SELECTION** provide evidence of **optimal outbreeding**: Neither closely related individuals nor those that differ greatly are chosen; those that are different enough to avoid inbreeding but not too different are regarded as optimal mates.

**incantation** *n.* ritualistic chanting, singing, or speaking. The incantation of certain prescribed phrases forms an important part of many religious and magical **RITUALS**. —**incant** *vb.*

**incendiarism** *n.* an older name for **PYROMANIA**.

**incentive** *n.* an external stimulus, such as a condition or an object, that enhances or serves as a motive for behavior.

**incentive motivation** **1.** in **HULL'S MATHEMATICO-DEDUCTIVE THEORY OF LEARNING**, an inducement, such as the expectation of a reward or punishment, that serves as an intervening variable or **MEDIATOR** to influence response strength. See also **STIMULUS-INTENSITY DYNAMISM**. **2.** more generally, any motivation induced by a positive reinforcer.

**incentive system** in organizational settings, a set of rewards and rules for their disbursement that is designed to influence future performance. Incentives vary in motivating power from group to group. As well as increased pay, common incentives include pensions, **GAINSHARING** schemes, performance-related bonuses, employee stock shares, gym memberships, and corporate entertainment (e.g., tickets for sports events). See also **DISINCENTIVE**; **WORK MOTIVATION**.

**incentive theory** the theory that motivation arousal depends on the interaction between environmental incentives (i.e., stimulus objects)—both positive and negative—and an organism's psychological and physiological states (e.g., drive states).

**incentive value** the perceived value of a motivating stimulus or condition, which varies among individuals.

**incest** *n.* sexual activity between family members, whether related by blood or not. Some form of **incest taboo**, or prohibition in custom or law against incest between first-degree relatives (e.g., father–daughter, mother–son, brother–sister), is found in nearly every society. In some societies, sexual intercourse between cousins, uncles and nieces, or aunts and nephews is also prohibited; in others, it is permitted. —**incestuous** *adj.*

**incest barrier** in psychoanalytic theory, an **EGO DEFENSE** against incestuous impulses and fantasies. The barrier is the result of the **INTROJECTION** of social laws and customs. These internal and external prohibitions free the **LIBIDO** to make an external **OBJECT CHOICE**.

**incestuous ties** in psychoanalytic theory, the condition in which an individual remains psychologically dependent on the mother, family, or symbolic substitute to the extent that healthy involvement with others and with society is inhibited or precluded. According to Erich **FROMM**, who introduced the term, incestuous ties represent the negative

resolution of the search for **ROOTEDNESS**. See also **IDENTITY NEED**.

**incidence** *n.* the rate of occurrence of new cases of a given event or condition (e.g., a disorder, disease, symptom, or injury) in a particular population in a given period. An **incidence rate** is normally expressed as the number of cases per some standard proportion (1,000 or 100,000 are commonly used) of the entire population at risk per year. See also **PREVALENCE**.

**incidental learning** learning that is not premeditated, deliberate, or intentional and that is acquired as a result of some other, possibly unrelated, mental activity. Some theorists believe that much learning takes place without any intention to learn, occurring incidentally to other cognitive processing of information. Also called **nonintentional learning**. See also **LATENT LEARNING**. Compare **INTENTIONAL LEARNING**.

**incidental memory** a memory that is acquired without conscious effort or intention to remember.

**incident process** **1.** a systematic sequence of actions or steps that is approved for use in a potentially dangerous situation, such as a fire, severe weather, or the presence of bombs or guns. In a school setting, these measures are often practiced as a drill to familiarize students with the appropriate procedure. **2.** a system in which learners begin with inadequate data and ask questions to gain additional information. The instructor has all the data and reveals a limited amount at the beginning, then discloses more in response to specific questions so that the group can reach decisions. The system is designed to teach the skills of analysis, synthesis, and interrogation that are relevant to problem solving and investigative techniques.

**inclusion** *n.* the practice of teaching students with disabilities in the same classroom as other students to the fullest extent possible, via the provision of appropriate supportive services. See also **FULL INCLUSION**.

**inclusion–exclusion criteria** in clinical research, criteria used to determine which individuals are eligible to participate in a particular study. Inclusion criteria might specify, for example, age range, whereas exclusion criteria might specify, for example, the existence of more than one illness or psychological disorder.

**inclusion/exclusion model** a theory of judgment postulating that **ASSIMILATION EFFECTS** occur when features of the context are included in the temporary representation of the target and that **CONTRAST EFFECTS** occur when extreme features of the context are excluded from that representation. See also **FLEXIBLE CORRECTION MODEL**; **SET/RESET MODEL**. [proposed by the U.S. psychologists Norbert Schwarz (1953– ) and Herbert Bless]

**inclusive fitness** the **REPRODUCTIVE SUCCESS** not only of an individual but also of all of that individual's relatives in proportion to their **COEFFICIENT OF RELATEDNESS**. In calculating estimates of reproductive success, it is assumed that parents, offspring, and siblings have an average of 50% of their genes in common; that grandparents and grand-offspring, as well as uncles or aunts and nieces or nephews, share 25% of genes; and that first cousins share 12.5% of genes.

**inclusiveness** *n.* one of the **GESTALT PRINCIPLES OF ORGANIZATION**. It states that there is a tendency to perceive only the larger figure when a smaller figure is completely

encompassed within it. Also called **law** (or **principle**) of **inclusiveness**.

**incoherence** *n.* inability to express oneself in a clear and orderly manner, most commonly manifested as disjointed and unintelligible speech. This may be an expression of disorganized and impaired thinking. —**incoherent** *adj.*

**incompatibility** *n.* **1.** the state in which two or more people are unable to interact harmoniously with each other. Compare **COMPATIBILITY**. **2.** in philosophy, the position that **FREE WILL** and **DETERMINISM** are incompatible and cannot coexist in any form or sense. Compare **COMPATIBILITY**. See also **HARD DETERMINISM**. —**incompatible** *adj.*

**incompatible response** a response or action that conflicts with another or occurs simultaneously with another. For example, a state of anxiety is incompatible with a state of relaxation.

**incompatible response method** a technique used to break bad habits in which an undesirable response is replaced by a more acceptable one that cannot coexist with the undesirable response.

**incompetence** *n.* **1.** the inability to carry out a required task or activity adequately. **2.** in law, the inability of a defendant to participate meaningfully in criminal proceedings, which include all elements of the criminal justice system, from initial interrogation to sentencing. Defendants who do not have the ability to communicate with attorneys or understand the proceedings may be ruled incompetent to stand trial (see **COMPETENCY TO STAND TRIAL**). See also **DUSKY STANDARD**. **3.** in law, the inability to make sound judgments regarding one's transactions or personal affairs. See **LEGAL CAPACITY**. Also called **incompetency**. Compare **COMPETENCE**. —**incompetent** *adj.*

**incompetency plea** the plea, in a court of law, that the defendant, because of mental illness, mental defect, or other reasons, does not understand the nature and objective of the proceedings; cannot appreciate or comprehend his or her own condition in relation to the proceedings; or is unable, for some other reason, to assist the attorney in his or her own defense. See also **COMPETENCY TO STAND TRIAL**.

**incompetent reservoir** see **DILUTION EFFECT**.

**incomplete block design** an experimental design in which treatments are grouped into sets or "blocks," not all of which include every treatment, and each block is administered to a different group of participants. Incomplete block designs often are employed to avoid administering too many treatment conditions to the same group of participants, which may contribute to undesirable error. For instance, the following arrangement of four treatments (A, B, C, D) is an incomplete block design: Block 1 = A-B-C; Block 2 = A-B-D; Block 3 = A-C-D; and Block 4 = B-C-D. In this particular design, each block contains three treatments, each treatment occurs three times across all blocks, and each pair of treatments occurs together two times across all blocks. Compare **COMPLETE BLOCK DESIGN**. See **BLOCK DESIGN**.

**incomplete counterbalancing** an experimental design that controls for **ORDER EFFECTS** by using a limited number of possible sequences of treatments administered in such a way that each treatment appears equally often in each position. For instance, the following arrangement of sequences of three treatments (A, B, C), each assigned to a different subgroup of participants, demonstrates incom-

plete counterbalancing: A-B-C to Subgroup 1, B-C-A to Subgroup 2, and C-A-B to Subgroup 3. Compare **COMPLETE COUNTERBALANCING**. See also **LATIN SQUARE**.

**incomplete factorial design** see **FRACTIONAL FACTORIAL DESIGN**.

**incomplete-pictures test** a test of visual recognition and interpretation in which drawings in varying degrees of completion are presented, and the participant attempts to identify the object as early in the series as possible. See also **PICTURE-COMPLETION TEST**.

**incomplete-sentence test** see **SENTENCE-COMPLETION TEST**.

**incomplete spinal cord injury** damage to the spinal cord that results in partial loss of motor or sensory function below the site of the injury. See also **SPINAL CORD INJURY**.

**incongruence** *n.* **1.** lack of consistency or appropriateness, as in **INAPPROPRIATE AFFECT** or as when one's subjective evaluation of a situation is at odds with reality. **2.** as defined by Carl **ROGERS**, a lack of alignment between the real self and the ideal self. See **REAL-IDEAL SELF CONGRUENCE**. **3.** in Rogerian **CLIENT-CENTERED THERAPY**, a lack of genuineness, honesty, or open expression on the part of the therapist in his or her interactions with a client. —**incongruent** *adj.*

**incongruity** *n.* the quality of being inconsistent, incompatible, not harmonious, or otherwise in disagreement with an accepted mode or standard. Perception experiments may include tests of incongruity in which, for example, a deck of playing cards may contain incongruous colors and suits, such as black hearts or purple spades.

**incongruity theory of humor** an explanation of the ability of humor to elicit laughter that emphasizes the juxtaposition of incompatible or contradictory elements. For example, British-born U.S. comedian Bob Hope (1903–2003) once quipped in regard to a place he was visiting: "The mosquitoes here are huge. Last night I shot one in my pajamas. They were tight on him too." Such theories have roots in the work of Immanuel **KANT**, Arthur **SCHOPENHAUER**, Herbert **SPENCER**, and Sigmund **FREUD**. See also **RELEASE THEORY OF HUMOR**.

**incontinence** *n.* **1.** an inability to control basic body functions, such as urination and defecation (see **FECAL INCONTINENCE**; **URINARY INCONTINENCE**). Incontinence is often caused by bodily and neurological injury or damage or physical abnormalities and changes. **2.** an inability to restrain sexual impulses. —**incontinent** *adj.*

**incoordination** *n.* a lack of harmony or organization of movement.

**incorporation** *n.* in psychoanalytic theory, the fantasy that one has ingested an external **OBJECT**, which is felt to be physically present inside the body. According to the theory, it first occurs in the **ORAL STAGE**, when the infant fantasizes that he or she has ingested the mother's breast. Incorporation is thought to be an early form of, and is often confused with, **IDENTIFICATION** and **INTROJECTION**. —**incorporate** *vb.*

**incorporation dream** see **DREAM INCORPORATION**.

**incremental** *adj.* describing or relating to changes that take place in small, cumulative steps rather than in large jumps.

**incremental learning** see **ALL-OR-NONE LEARNING**.



**incremental theory** see IMPLICIT SELF THEORY.

**incremental validity** the improvement obtained by adding a particular procedure or technique to an existing combination of assessment methods. In other words, incremental validity reflects the value of each measure or piece of information to the process and outcome of assessment. The standards for evaluating incremental validity depend on the goal of the assessment, such as whether one wishes to gather unique information, predict a criterion, make a diagnosis, or choose a treatment. For example, teacher observations of the daily frequency of a child's vocal tic may not add critical information in diagnosing a tic disorder but may contribute significantly when the purpose of the assessment is to monitor treatment progress.

**incubation** *n.* **1.** the provision of warmth and protection for eggs that develop outside the female's body. In birds, incubation can be undertaken by either or both parents and is essential for hatching of the eggs. **2.** the gradual generation of a solution to a problem at a nonconscious or semi-conscious level, often after an attempt at a conscious, deliberate solution has failed. **3.** in microbiology, the growth of cultures in a controlled environment. **4.** the maintenance of an artificial environment for a premature or hypoxic infant. **5.** the asymptomatic stage of development of an infection. —**incubate** *vb.* —**incubator** *n.*

**incubation of anxiety** the increase in a conditioned anxiety response that occurs with repeated unreinforced presentation of a CONDITIONED STIMULUS. For example, a person with a spider phobia might become more afraid of spiders each time he or she encounters one, even if no encounter is paired with a traumatic event, such as the spider biting. [first proposed by Hans EYSENCK as the basis of his conditioning theory of neurosis]

**incubus** *n.* **1.** a demon or evil spirit in male form believed to have sexual intercourse with sleeping women. Compare SUCCUBUS. **2.** a person or thing that is oppressive or an encumbrance.

**incus** *n.* see OSSICLES.

**indecent** *n.* behavior considered offensive, obscene, improper, or immoral according to the norms of a particular culture, especially in relation to sexual matters. —**indecent** *adj.*

**indefinite article** in linguistics, an ARTICLE (*a* or *an* in English) used with a noun phrase to indicate a nonspecific entity or one not previously defined, as in *A dog is a wonderful companion* or *A dog started barking*. Compare DEFINITE ARTICLE.

**indemnity plan** a system of HEALTH INSURANCE in which the insurer pays for the costs of covered services after care has been given. Such plans are typically based on FEE-FOR-SERVICE and offer participants considerable freedom to choose their own health care providers.

**independence** *n.* **1.** freedom from the influence or control of other individuals or groups. **2.** complete lack of relationship between two or more events, sampling units, or variables, such that none is influenced by any other and that changes in one have no implication for changes in any other. For example, a standard assumption in ANALYSIS OF VARIANCE, MULTIPLE REGRESSION, and many other statistical analyses is **independence of observations**, or the fact that the occurrence of one observation does not influence the occurrence of any others. See also STATISTICAL INDEPENDENCE. —**independent** *adj.*, *n.*

**independent events** the situation in which observing one event does not provide any additional information about the occurrence or outcome of another event. For example, the outcome of a coin flip and the Dow Jones Industrial Average are independent events, whereas the temperatures of two consecutive days are not necessarily independent. Formally, two events, *A* and *B*, are independent if the probability of event *A* is the same as the conditional probability of event *A* given event *B*, that is,  $P(A) = P(A|B)$ , or equivalently,  $P(B) = P(B|A)$ . Compare DEPENDENT EVENTS.

**independent groups** see INDEPENDENT SAMPLES.

**independent-groups design** see BETWEEN-SUBJECTS DESIGN.

**independent living** **1.** the ability of an individual to perform—without assistance from others—all or most of the daily functions typically required to be self-sufficient, including those tasks essential to personal care (see ACTIVITIES OF DAILY LIVING) and to maintaining a home and job. **2.** a philosophy and civil reform movement promoting the rights of people with disabilities to determine the course of their lives and be full, productive members of society with access to the same social and political freedoms and opportunities as individuals without disabilities. Central to the philosophy are the concepts of self-determination and self-worth, peer support, consumer-controlled assistance and support services, and political and social reform. **Centers for Independent Living (CILs)**, nonresidential, non-profit organizations that are staffed and operated by individuals with disabilities, encourage self-sufficiency and self-determination in all aspects of life for individuals with disabilities by providing information and referral services, peer counseling, and independent living support (e.g., help with ASSISTIVE TECHNOLOGY, budgeting, meal preparation, transportation arrangements, employment searches, and gaining access to housing and health care). CILs also advocate for legislative and social change aimed at benefiting individuals with disabilities.

**independent-living aid** see ASSISTIVE TECHNOLOGY.

**independent-living program** **1.** a system of community-based services and support designed to help individuals with disabilities achieve their highest level of personal functioning without the need to depend on others. Independent-living programs are administered by state vocational rehabilitation agencies. See also INDEPENDENT LIVING. **2.** a federally funded, state-administered program to prepare foster care youth who are 16 to 21 years old for the transition to independence.

**independent phenomena** any phenomena that appear to occur independently of a human AGENT. In parapsychology, the term refers to apparently paranormal phenomena that cannot be ascribed to TELEPATHY or PSYCHOKINESIS. These might include video or audio recordings of POLTERGEIST activity made in an empty house.

**independent practice association (IPA)** an organized form of prepaid medical practice in which a group of private physicians join together in an association and are reimbursed on a FEE-FOR-SERVICE basis or a CAPITATION basis.

**independent random sampling** see SIMPLE RANDOM SAMPLING.

**independent random variables** RANDOM VARIABLES that exhibit a complete lack of relationship, such that no

information about one variable, *x*, conveys any information about another variable, *y*. Any events related to these variables are INDEPENDENT EVENTS.

**independent samples** groups of individuals or sets of data that are unrelated to one other. For example, experimental groups consisting of different and unrelated participants are independent samples, as are the data sets obtained from these groups. Also called **independent groups**. Compare DEPENDENT SAMPLES.

**independent-samples *t* test** a T TEST used to analyze data from a BETWEEN-SUBJECTS DESIGN, in which the different groups of individuals or other entities measured are not associated with one another. In the independent-samples *t* test, one calculates the value of the TEST STATISTIC *t* from the means, standard deviations, and sizes of the two groups of interest, then compares its value to a T DISTRIBUTION for a given DEGREE OF FREEDOM under the assumptions of normality and INDEPENDENCE of observations, among others. Also called **independent-measures *t* test**. Compare DEPENDENT-SAMPLES T TEST.

**independent sampling** a process for selecting a sample of study participants from a larger potential group of individuals such that the probability of each person being selected for inclusion is not influenced by which people have been chosen already. The resulting samples will be INDEPENDENT SAMPLES.

**independent self-construal** a view of the self (SELF-CONSTRUAL) that emphasizes one's separateness and unique traits and accomplishments and that downplays one's embeddedness in a network of social relationships. Compare INTERDEPENDENT SELF-CONSTRUAL.

**independent variable (IV)** the variable in an experiment that is specifically manipulated or is observed to occur before the dependent, or outcome, variable, in order to assess its effect or influence. Independent variables may or may not be causally related to the DEPENDENT VARIABLE. In statistical analyses—such as PATH ANALYSIS, REGRESSION ANALYSIS, and STRUCTURAL EQUATION MODELING—an independent variable is likely to be referred to as a **causal variable**, **explanatory variable**, or PREDICTOR VARIABLE. See also EXOGENOUS VARIABLE; TREATMENT.

**Inderal** *n.* a trade name for PROPRANOLOL.

**indeterminacy** *n.* **1.** the inability to uniquely determine the form or magnitude of a relationship. **2.** the inability to arrive at a unique solution to a problem or mathematical form. **3.** in FACTOR ANALYSIS, the inability to form a unique representation of the factor structure.

**indeterminacy principle** see UNCERTAINTY PRINCIPLE.

**indeterminate sentencing** a punishment in which the judge mandates confinement of an offender over a time range (e.g., between 5 and 10 years) rather than a fixed period (e.g., 7 years). This practice allows greater discretion of the parole board to establish the specific time of release.

**indeterminism** *n.* **1.** in psychology, the doctrine that humans have FREE WILL and are able to act independently of antecedent or current situations, as in making choices. Compare DETERMINISM. See also HARD DETERMINISM; SOFT DETERMINISM. **2.** in philosophy, the position that events do not have necessary and sufficient causes. —**indeterminist** *adj.*

**index** **1.** *n.* a reference point, standard, or indicator. **2.** *n.* a variable that is employed to indicate the presence of an-

other phenomenon or event. **3.** *n.* a number formed from a combination of other measures to represent another, more general entity. For example, an index of a person's graduate school potential might be formed from his or her undergraduate grade-point average and score on an admissions test. **4.** *vb.* to act as an index of.

**index adoptees** see CROSS-FOSTERING.

**index case** see PROBAND.

**index of discrimination** the degree to which a test or test item differentiates between individuals of different performance levels, often given as the percentage difference between high-performing and low-performing individuals who answer a target item correctly. Also called **discrimination index**.

**index of reliability** see RELIABILITY COEFFICIENT.

**index of validity** see VALIDITY COEFFICIENT.

**index of variability** see DISPERSION MEASURE.

**Indian Health Service (IHS)** the principal federal health care provider and health advocate for Native Americans, providing services to approximately 1.9 million American Indians and Alaska Natives belonging to more than 564 federally recognized peoples in 35 states. It is an agency within the U.S. Department of Health and Human Services.

**indicative** *n.* in linguistics, the MOOD of a verb used to make ordinary DECLARATIVE statements, rather than commands, questions, and so on. Compare IMPERATIVE; INTERROGATIVE; SUBJUNCTIVE.

**indicator variable** **1.** see DUMMY VARIABLE. **2.** see MANIFEST VARIABLE.

**indictment** *n.* a formal accusation of criminal wrongdoing brought before the court by a grand jury, the group responsible for reviewing complaints of wrongdoing, to determine whether a trial is warranted. —**indict** *vb.*

**indifference of indicator** the observation that, although items on tests of intelligence differ widely in appearance, almost all of them seem to measure GENERAL ABILITY to a greater or lesser extent. The term *indifference* is used to signify that the items measure the same thing without regard to their specific appearance.

**indigenous researcher** in ergonomics, a researcher who originates from the same environment or community as the target users for a specific system or product design. Indigenous researchers are employed in TASK ANALYSIS and USABILITY ENGINEERING among different ethnic and cultural groups. See also CULTURAL ERGONOMICS; POPULATION STEREOTYPE.

**indirect agonist** a substance that acts to increase the activity of an AGONIST at a receptor in ways other than direct action at the receptor site. Indirect agonists may exert their effect by increasing the metabolism or release of agonist compounds or by displacing other substances that impair full binding of an agonist to its receptor site.

**indirect associations** a symptom of schizophrenia in which the association between ideas is not apparent and not expressed, such that the person's statements seem bizarre and incoherent to others. See also LOOSENING OF ASSOCIATIONS.

**indirect attitude measure** any procedure for assessing attitudes that does not require a person to provide a re-

port of his or her attitude. Nontraditional approaches to attitude measurement, such as the LOST LETTER PROCEDURE and the ERROR-CHOICE TECHNIQUE, are examples. See also EXPLICIT ATTITUDE MEASURE; IMPLICIT ATTITUDE MEASURE. Compare DIRECT ATTITUDE MEASURE.

**indirect measurement** a method in which a researcher gathers data about one variable (or a combination of variables) as a means of representing a second variable of interest that cannot be assessed in a more straightforward manner. See PROXY VARIABLE.

**indirect memory test** see IMPLICIT MEMORY TEST.

**indirect method of therapy** a method of conducting therapy, particularly exemplified by CLIENT-CENTERED THERAPY, in which the therapist does not attempt to direct the client's communication or evaluate the client's remarks, although he or she may refer back to the client's remarks or restate them (see RESTATEMENT).

**indirect object** see OBJECT.

**indirect odor effect** see DIRECT ODOR EFFECT.

**indirect relationship** in STRUCTURAL EQUATION MODELING, a correlation between two variables that involves an intervening variable or MEDIATOR. For example, age may affect rate of pay, which in turn may affect job satisfaction: This being so, the correlation between age and job satisfaction would be an indirect relationship. The term is often used incorrectly to denote a NEGATIVE RELATIONSHIP. Compare DIRECT RELATIONSHIP.

**indirect scaling** see DIRECT SCALING.

**indirect speech act** a SPEECH ACT whose purpose is not explicit from the form or content of the utterance but must be inferred. For example, the apparent observation *It's so cold in here!* may well be intended as a request that someone close the window. See CONVERSATIONAL INFERENCE; FORM-FUNCTION DISTINCTION; IMPLICATURE.

**indirect suggestibility** see SECONDARY SUGGESTIBILITY.

**individual accuracy** see SOCIAL RELATIONS MODEL.

**individual differences** traits or other characteristics by which individuals may be distinguished from one another. This is the focus of DIFFERENTIAL PSYCHOLOGY, for which the term **individual differences psychology** increasingly is used.

**individual-differences scaling (INDSCAL)** a method of studying how personal attributes influence judgments about the similarity among members of or items in a category. A form of MULTIDIMENSIONAL SCALING, it assumes that people may differ on both the characteristics they use to define a category and the importance they place on each characteristic. Also called **weighted multidimensional scaling**.

**Individual Family Service Plan (IFSP)** a plan of services and supports for children up to 3 years of age and their families. Under the U.S. requirements for early intervention programs, the IFSP content must address the child's developmental status and the concerns of parents, define services to be provided and their desired outcomes, and (if appropriate) contain transition steps to preschool services. Also called **Individualized Family Service Plan**.

**individualism** *n.* **1.** a social or cultural tradition, ideology, or personal outlook that emphasizes the individual and his or her rights, independence, and relationships with

other individuals. Compare COLLECTIVISM. **2.** in ethical and political theory, the view that individuals have intrinsic value. This implies that the unique values, desires, and perspectives of individuals should also be valued in their own right. Thus, individualism often manifests itself as an approach to life that emphasizes the essential right to be oneself and to seek fulfillment of one's own needs and desires. —**individualist** *n.* —**individualistic** *adj.*

**individualist feminism** a perspective within feminist thought that is closely related to INDIVIDUALISM. The position values female autonomy, emphasizes individual rights and freedom of action, and upholds diversity as an inherent good. See FEMINISM.

**individualistic reward structure** a performance setting structured in such a way that rewards are assigned on the basis of individual achievement and the success or failure of each person is independent of the success or failure of any other individual. Compare COMPETITIVE REWARD STRUCTURE; COOPERATIVE REWARD STRUCTURE.

**individuality** *n.* the uniqueness of each individual's personality.

**individualization** *n.* any process in which an individual becomes distinguishable, in one of multiple ways, from one or more other members of the same species, sex, or other category. —**individualize** *vb.*

**individualized education program (IEP)** a plan describing the special education and related services specifically designed to meet the unique educational needs of a student with a disability. Each IEP must be documented in writing, tailored to a particular child, and implemented in accordance with the requirements of U.S. federal law. The IEP must be created by a team of individuals that includes, but is not restricted to, parents, teachers, a representative of the school system, and an individual who will evaluate the child's needs and monitor progress. See also FREE AND APPROPRIATE PUBLIC EDUCATION.

**individualized instruction** a method of instruction characterized by one-to-one teaching and self-paced learning directed toward progressive goals that reflect course or curriculum objectives. Teachers assist students in identifying skills that need development or knowledge that needs to be acquired. Group projects are also incorporated in the program.

**individualized reading** a method of teaching reading that makes use of the child's interests and of a variety of books specifically focused on the child's level of skills.

**individual program** an instructional method in which students are responsible for developing and carrying out their own program. This method is most often used for children who possess a high level of motivation and cognitive development. Compare COMMAND STYLE.

**individual psychology** **1.** the psychological theory of Alfred ADLER, which is based on the idea that throughout life individuals strive for a sense of mastery, completeness, and belonging and are governed by a conscious drive to overcome their sense of inferiority by developing to their fullest potential, obtaining their life goals, and creating their own styles of life. This is opposed to the view that human beings are dominated by "blind," irrational instincts operating on an unconscious level. Also called **Adlerian psychology**. **2.** historically, a synonym for DIFFERENTIAL PSYCHOLOGY.

**individual psychotherapy** see INDIVIDUAL THERAPY.

**individual response stereotypy** see AUTONOMIC REACTIVITY.

**individual selection** an aspect of NATURAL SELECTION in which those traits of an individual that lead to increased REPRODUCTIVE SUCCESS are more likely to appear in subsequent generations. The focus of individual selection is on the direct benefits to the individual; this contrasts with KIN SELECTION, in which those who assist their relatives receive indirect benefits.

**Individual Service Plan (ISP)** the core plan of services and supports for a person with a developmental disability, constructed by professionals, paraprofessionals, the focal person (depending on his or her abilities), and other concerned parties (e.g., parents, advocates). The ISP incorporates relevant comprehensive functional assessment findings, stipulates desired and preferred outcomes, and identifies the full range of services and supports to be provided in order to achieve each outcome. In certain instances, ISPs may be drawn up for individuals with psychiatric conditions, emotional disturbances, or behavior disorders.

**Individuals With Disabilities Education Act (IDEA)** legislation passed by the U.S. Congress in 1990 and amended in 1997 and 2004 that provides public funding for special educational services and mandates that such services be provided in the LEAST RESTRICTIVE ENVIRONMENT. It consolidated and replaced the EDUCATION FOR ALL HANDICAPPED CHILDREN ACT.

**individual therapy** treatment of psychological problems that is conducted on a one-to-one basis. One therapist sees one client at a time, tailoring the process to his or her unique needs in the exploration of contributory factors and alleviation of symptoms. Also called **dyadic therapy**; **individual psychotherapy**. Compare GROUP THERAPY.

**individuation** *n.* **1.** generally, the physiological, psychological, and sociocultural processes by which a person attains status as an individual human being and exerts himself or herself as such in the world. **2.** in the psychoanalytic theory of Carl JUNG, the gradual development of a unified, integrated personality that incorporates greater and greater amounts of the UNCONSCIOUS, both personal and collective, and resolves any conflicts that exist, such as those between introverted and extraverted tendencies. **3.** a phase of development, occurring between the 18th and 36th months, in which infants become less dependent on their mothers and begin to satisfy their own wishes and fend for themselves. [postulated by Hungarian-born U.S. child psychoanalyst Margaret Schönberger Mahler (1897–1985)]

**indoctrination** *n.* the social inculcation of beliefs, especially by individuals in positions of power or authority. —**indoctrinate** *vb.*

**indole** *n.* a compound that is the basis of LSD (lysergic acid diethylamide) and many substances involved in nervous system activity, including serotonin, melatonin, and tryptophan.

**indolealkylamine** *n.* see HALLUCINOGEN.

**indoleamine** *n.* any of a class of BIOGENIC AMINES formed by an indole molecule, which is produced as a breakdown metabolite of tryptophan, and an amine group. Indoleamines include the neurotransmitter serotonin and the hormone melatonin.

**INDSCAL** abbreviation for INDIVIDUAL-DIFFERENCES SCALING.

**induced abortion** the deliberate, premature removal of the fetus from the uterus prior to the stage of viability (ability to live outside the uterus) by artificial means, such as drugs or mechanical devices. See also ABORTION; THERAPEUTIC ABORTION.

**induced aggression** a state of violence or hostile behavior caused by drugs, electrical stimulation of a brain area, or aversive stimuli.

**induced color** a color change in a visual field resulting from stimulation of a neighboring area, rather than from stimulation of the part of the field in which the change appears.

**induced compliance effect** see FORCED COMPLIANCE EFFECT.

**induced hallucination** a hallucination evoked by hypnotic suggestion in susceptible individuals.

**induced hypothermia** the gradual reduction of body temperature by artificial means, usually for medical reasons. It is used, for example, in some surgical procedures (especially those involving the heart) to decrease the body's need for oxygen and in the treatment of neurological diseases causing a fever.

**induced movement** an illusion of movement that occurs when a small stationary stimulus is surrounded by a large moving stimulus. The small object appears to move, while the large object appears to be still. An example is the HAUNTED SWING ILLUSION. Also called **vection**.

**induced psychotic disorder** see SHARED PSYCHOTIC DISORDER.

**induced tonus** sustained muscle tension brought about by a movement of another body part.

**induction** *n.* **1.** a general conclusion, principle, or explanation derived by reasoning from particular instances or observations. See INDUCTIVE REASONING. Compare DEDUCTION. **2.** the process of inductive reasoning itself. **3.** in conditioning, the phenomenon in which REINFORCEMENT of some forms of behavior results in an increased probability not only of those forms but also of similar but nonreinforced forms. For example, if lever presses with forces between 0.2 and 0.3 N are reinforced, presses with forces less than 0.2 N or greater than 0.3 N will increase in frequency although they are never explicitly reinforced. Also called **response generalization**. **4.** in developmental biology, the process by which one set of cells influences the fate of neighboring cells, usually by secreting a chemical factor that changes gene expression in the target cells. **5.** the act or process of producing or causing to occur. —**inductive** *adj.*

**induction test** a series of test items in which the participant must apply INDUCTIVE REASONING to derive or formulate a general law, rule, or principle based on several relevant facts or cases.

**inductive problem solving** a learning technique in which the student is asked to identify relevant relationships between given facts and events and explain the general principles that underlie these relationships.

**inductive reasoning** the form of reasoning in which inferences and general principles are drawn from specific observations and cases. Inductive reasoning is a corner-

stone of the scientific method (see BACONIAN METHOD) in that it underlies the process of developing hypotheses from particular facts and observations. Compare DEDUCTIVE REASONING. See also GENERALIZATION.

**inductive statistics** see INFERENTIAL STATISTICS.

**inductive teaching model** an approach in education that strongly emphasizes the role of inductive reasoning and inductive problem solving in cognitive development. Also called **inquiry training model**.

**industrial and organizational psychology (I/O psychology)** the branch of psychology that studies human behavior in the work environment and applies general psychological principles to work-related issues and problems, notably in such areas as PERSONNEL SELECTION, PERSONNEL TRAINING, EMPLOYEE EVALUATION, working conditions, ACCIDENT PREVENTION, JOB ANALYSIS, JOB SATISFACTION, leadership, team effectiveness, and WORK MOTIVATION. I/O psychologists conduct empirical research aimed at understanding individual and group behavior within organizations and use their findings to improve ORGANIZATIONAL EFFECTIVENESS and the welfare of employees. Also called **business psychology**; **employment psychology**; **industrial psychology**; **management psychology**; **occupational psychology**; **organizational psychology**; **work psychology**. See also OCCUPATIONAL HEALTH PSYCHOLOGY; PERSONNEL PSYCHOLOGY.

**industrial democracy** a system of managing an organization in which employees participate in important decisions. An example would be the use of autonomous work groups in which employees determine their work procedures and assignments and are responsible for evaluating and rewarding performance. See also PARTICIPATIVE DECISION MAKING; QUALITY CIRCLE; SCANLON PLAN.

**industrial efficiency** see EFFICIENCY.

**industrial ergonomics** a specialty area of ERGONOMICS that applies knowledge of human physical capabilities and limitations to the design of industrial WORK SYSTEMS, including work processes.

**industrial psychology** see INDUSTRIAL AND ORGANIZATIONAL PSYCHOLOGY.

**industrial psychopath** an individual in a work setting who displays a pattern of behavior regarded as typical of ANTISOCIAL PERSONALITY DISORDER. Such individuals act without regard for others and use manipulation to effectively manage both supporters and detractors, often resulting in career advancement. This type of individual is most likely to find success in organizations undergoing rapid changes.

**industrial relations** see LABOR RELATIONS.

**industriousness** *n.* see CONSCIENTIOUSNESS.

**industry versus inferiority** the fourth of ERIKSON'S EIGHT STAGES OF PSYCHOSOCIAL DEVELOPMENT, occurring from ages 6 to 11 years, during which the child learns to be productive and to accept evaluation of his or her efforts or becomes discouraged and feels inferior or incompetent.

**ineffability** *n.* the quality of certain experiences that makes them indescribable. This quality is often associated with spiritual, aesthetic, or emotional experiences. See also QUALIA. —**ineffable** *adj.*

**infancy** *n.* the earliest period of postnatal life, in humans

generally denoting the time from birth through the first year. —**infant** *n.*

**infant and preschool tests** individually administered tests designed to assess the development of infants (from birth to 18 months) and preschool children (from 18 to 60 months). Important tests include the BAYLEY SCALES OF INFANT AND TODDLER DEVELOPMENT, the MCCARTHY SCALES OF CHILDREN'S ABILITIES, and the WECHSLER PRESCHOOL AND PRIMARY SCALE OF INTELLIGENCE.

**infant at risk** an infant whose development may be threatened by complications at the time of birth, such as conditions that reduce the supply of oxygen to brain tissue, or by conditions after birth, such as malnutrition during the first months of life.

**Infant Behavior Record** the former name for the Behavior Rating scale. See BAYLEY SCALES OF INFANT AND TODDLER DEVELOPMENT.

**infant consciousness** sensory awareness, volitional action, and other aspects of phenomenal experience in newborns and older infants. Investigations of infant consciousness suggest that it begins in early gestation with the formation of anatomical, physiological, and neural structures that will serve an individual's conscious experience in postnatal life; develops in late gestation into a fetus's latent engagement with sensed surroundings in and ex utero; becomes nascently experienced in early postnatal life, as a newborn begins to explore the world outside his or her own body; and emerges increasingly as a distinct experience with the achievement of DEVELOPMENTAL MILESTONES in later infancy and childhood.

**infant-directed speech** the specialized style of speech that adults and older children use when talking specifically to infants, which usually includes much inflection and repetition. See also CHILD-DIRECTED SPEECH.

**infanticide** *n.* the killing of an infant or child. Although now predominantly considered both immoral and criminal, in the past infanticide was an accepted practice in some societies, often as a response to scarcity or overpopulation or as a means of eliminating offspring deemed unfit. Infants (particularly female infants) are still at risk in some cultures. Infanticide has been observed in many nonhuman animal species. It is thought to be advantageous for a new male taking over a group, who thus avoids the need to care for unrelated young; moreover, females that lose offspring will stop lactation and be able to reproduce sooner. Infanticide has also been observed in COOPERATIVE-BREEDING species when two females give birth at around the same time and there is competition for helpers to provide care for the young. —**infanticidal** *adj.*

**infantile amnesia** see CHILDHOOD AMNESIA.

**infantile autism** see AUTISM.

**infantile myxedema** see BRISSAUD'S INFANTILISM.

**infantile paralysis** see POLIOMYELITIS.

**infantile sexuality** in psychoanalytic theory, the concept that PSYCHIC ENERGY or LIBIDO concentrated in various organs of the body throughout infancy gives rise to erotic pleasure. This is manifested in sucking the mother's breast during the ORAL STAGE of psychosexual development, in defecating during the ANAL STAGE, and in self-stimulating activities during the early GENITAL STAGE. The term and concept, first enunciated by Sigmund FREUD, proved highly controversial from the start, and it is more in line with sub-

sequent thought to emphasize the sensual nature of breast-feeding, defecation, and discovery of the body in childhood and the role of the pleasurable feelings so obtained in the origin and development of sexual feelings.

**infantile speech** speech or verbalizations using the sounds and forms characteristic of infants or very young children beyond the stage when such speech is normal.

**infantilism** *n.* behavior, physical characteristics, or mental functioning in older children or adults that is characteristic of that of infants or young children. See REGRESSION.

**infantilization** *n.* the encouragement of infantile or childish behavior in a more mature individual. —**infantilize** *vb.*

**infant massage therapy** the systematic gentle touching, stroking, and kneading of the body of a baby. Therapeutic benefits include helping the baby relax and inducing sounder, longer sleep.

**infant reflex** see PRIMITIVE REFLEX.

**infant states of arousal** the behavioral states experienced by infants in fairly even alternation, including (a) regular, periodic, and irregular sleep; (b) crying; (c) waking activity; and (d) ALERT INACTIVITY.

**infant test** see INFANT AND PRESCHOOL TESTS.

**infarction** *n.* **1.** an area of dead tissue resulting from obstruction of a supplying artery. Infarction of brain tissue can have effects ranging from mild to severe, depending on the extent of the dead tissue and its location in the brain (see CEREBRAL INFARCTION). A **myocardial infarction** (heart attack) involves death of a segment of the heart muscle, usually due to obstruction of a coronary artery, and is a common cause of death. **2.** a sudden shortfall in the blood supply to a particular tissue, organ, or part resulting from obstruction of a supplying artery, due, for example, to THROMBOSIS or EMBOLISM. Also called **infarct**. See STROKE.

**infecundity** *n.* inability to produce offspring.

**inference** *n.* **1.** a CONCLUSION deduced from an earlier premise or premises according to valid RULES OF INFERENCE, or the process of drawing such a conclusion. Some hold that an inference, as contrasted with a mere conclusion, requires that the person making it actually believe that the inference and the premises from which it is drawn are true. Also called **logical inference**. **2.** in statistical analysis, a conclusion about a population based on logical reasoning from data gathered about a smaller sample (see INFERENCE STATISTICS). The most common example of this type of inference is statistical hypothesis testing (see INFERENCE TEST). —**inferential** *adj.*

**inferential statistics** a broad class of statistical techniques that allow INFERENCES about characteristics of a population to be drawn from a sample of data from that population while controlling (at least partially) the extent to which errors of inference may be made. These techniques include approaches for testing hypotheses, estimating the value of parameters, and selecting among a set of competing models. Also called **inductive statistics**. Compare DESCRIPTIVE STATISTICS.

**inferential test** any statistical procedure used to evaluate hypotheses about differences between sample and population distributions. Examples include the CHI-SQUARE TEST, the F TEST, and the T TEST. Inferential tests more commonly are known as **significance tests** (see SIGNIFICANCE TESTING).

**inferential validity** the extent to which causal inferences made in a laboratory setting are applicable to the real-life experiences they are meant to represent. See also EXTERNAL VALIDITY.

**inferior** *adj.* in anatomy, lower, below, or toward the feet. Compare SUPERIOR.

**inferior colliculus** either of the caudal pair of COLLICULI. They receive and process auditory nerve impulses and relay these to the MEDIAL GENICULATE NUCLEI.

**inferior frontal gyrus** an anatomically poorly defined region of the frontal lobe that includes BROCA'S AREA and is involved in language production, risk aversion, and empathetic response to facial expressions.

**inferior function** in the ANALYTIC PSYCHOLOGY of Carl JUNG, one of the three nondominant, unconscious functions of the personality that are dominated by the SUPERIOR FUNCTION in a particular FUNCTIONAL TYPE.

**inferiority** *n.* in ERIKSON'S EIGHT STAGES OF PSYCHOSOCIAL DEVELOPMENT, see INDUSTRY VERSUS INFERIORITY.

**inferiority complex** a basic feeling of inadequacy and insecurity, deriving from actual or imagined physical or psychological deficiency, that may result in behavioral expression ranging from the withdrawal of immobilizing timidity to the overcompensation of excessive competition and aggression. Compare SUPERIORITY COMPLEX. [introduced in 1907 by Alfred ADLER]

**inferior longitudinal fasciculus** a bundle of association fibers that extends from the occipital to the temporal pole of each CEREBRAL HEMISPHERE.

**inferior oblique** the extrinsic EYE MUSCLE that rotates the eyeball upward if it contracts when the eye is pointing toward the nose and contributes to upward motion (together with the INFERIOR RECTUS) if it contracts when the eye is pointing straight ahead.

**inferior olivary complex (inferior olivary nucleus; inferior olive)** see OLIVARY NUCLEUS.

**inferior rectus** the extrinsic EYE MUSCLE that rotates the eyeball upward if it contracts when the eye is pointing toward the side of the head and contributes to upward motion (together with the INFERIOR OBLIQUE) if it contracts when the eye is pointing straight ahead.

**inferior temporal gyrus** a ridge (gyrus) that extends along the lower surface of the TEMPORAL LOBE of the brain, bounded above by the middle temporal sulcus. It has a role in language, semantic memory, visual processing, and sensory integration.

**inferotemporal cortex (IT cortex)** a region of the brain on the inferior (lower) portion of the outer layer (cortex) of the temporal lobe that is particularly involved in the perception of form. This VISUAL ASSOCIATION CORTEX contains neurons with very complicated stimulus requirements; lesions in this area impair form and object perception even though visual discrimination thresholds are unchanged (see VISUAL AGNOSIA). See also GRAND-MOTHER CELL.

**infertility** *n.* inability to produce offspring due to a low FERTILITY level in the male partner, the female partner, or both. Infertility is caused by physical problems; no evidence clearly shows a psychological cause, although maternal stress has been suggested as a factor. See also ARTIFICIAL INSEMINATION; IN VITRO FERTILIZATION. —**infertile** *adj.*

**infibulation** *n.* the removal of the entire clitoris and most of the labia and sewing together the remaining tissue, leaving a small opening for menstruation and urination. It is practiced in some cultures as the most severe form of FEMALE GENITAL MUTILATION, usually done during early childhood or the prepubertal years.

**infidelity** *n.* **1.** the situation in which one partner in a marriage or intimate relationship becomes sexually or emotionally involved with a person other than the partner's spouse or girlfriend or boyfriend. The infidelity, also called **cheating**, usually transpires in secrecy between those in the extradyadic relationship; however, **online infidelity**, in which the extradyadic intimacy occurs on social networks and other Internet-based sites that may be only marginally private, is becoming widespread. Regardless of its method of pursuit, its effects can be harmful: Infidelity has been linked to significant adverse emotional and behavioral consequences, especially for the individual who is cheated on, including decreased self-esteem and increased risk of depression and suicide. Additionally, it is cited as a common cause of divorce or relationship dissolution. See also ADULTERY. **2.** more generally, any disloyalty or lack of faith.

**infinite-valued logic** a system of logic that differs from classical logic, which permits only two truth categories to be assigned to a proposition (true or false), by allowing for multiple categories or degrees of truthfulness. For example, whereas the statement *Smith is a professor* is either true or false, the statement *Smith is depressed* might have varying degrees of truthfulness. Thus, the intersection of the categories "Smith" and "depressed" has "fuzzy" as opposed to "crisp" boundaries. Infinite-valued logic is related to FUZZY LOGIC. See also BIVALENCE.

**infix** *n.* an element inserted medially within a word to modify the word's meaning. The only known examples in English are swear words, as in *fan-fucking-tastic*. Compare PREFIX; SUFFIX.

**inflection** *n.* in linguistics, a modification in the form of a word, often by the addition of a SUFFIX, that signals a change in tense, person, number, or case. Common inflections in English are the addition of *-ed* or *-ing* to signal the past tense or present participle of a verb and the addition of *-s* or *-'s* to signal the plural or possessive form of a noun. See MORPHOLOGY. —**inflectional** *adj.*

**influence analysis** a set of techniques that allows one to determine the degree to which specific data points affect the overall result of a statistical procedure. For example, in REGRESSION ANALYSIS it is used to examine which observations have a disproportionate influence on the proposed REGRESSION EQUATION.

**influence tactics** the specific actions taken by one person to change the behavior or attitudes of another.

**influencing machine** the subject of a DELUSION OF PERSECUTION in which the individual feels controlled by a machine that serves as the instrument of persecution.

**informal communications** in organizational settings, communications among employees that do not occur through the formally prescribed CHANNELS OF COMMUNICATION. Informal communications often serve important functions that are instrumental in achieving organizational objectives, such as fostering innovation and problem solving.

**informal fallacy** see FALLACY.

**informant** *n.* an expert who is consulted in ethnographic and related research. The researcher obtains information from the informant regarding the individual, group, and cultural characteristics and behaviors of the unit (e.g., group, tribe, society) about which the informant has knowledge.

**informatics** *n.* the science of using technology to collect, process, analyze, utilize, classify, store, and generally manage data and knowledge. Informatics is used in computer design, databases, and human interface design. See BIOINFORMATICS.

**information** *n.* **1.** knowledge about facts or ideas gained through investigation, experience, or practice. **2.** in INFORMATION THEORY, a message that reduces uncertainty; that is, information tells us something we do not already know. The BIT is the common unit of information in information theory.

**informational cascade** in decision making and risk management, the tendency for individuals to ignore their private knowledge and act as others do, assuming that these others must have better information; the result is an ever-increasing uniformity of behavior. Stock market bubbles and bank panics are examples.

**informational influence** **1.** those interpersonal processes that challenge the correctness of an individual's beliefs or the appropriateness of his or her behavior, thereby promoting change. Such influence may occur directly, as a result of communication and persuasion, or indirectly, through exposure to information and comparison of oneself with others (see SOCIAL COMPARISON THEORY). Also called **informational social influence**. Compare INTERPERSONAL INFLUENCE; NORMATIVE INFLUENCE. **2.** the degree to which a person's judgments or opinions about an unclear situation are accepted by others as correct.

**informational power** a capacity to influence others that is based on one's knowledge of facts relevant to the situation.

**information-error technique** see ERROR-CHOICE TECHNIQUE.

**information feedback** responses that inform an individual about the correctness, physical effect, or social or emotional impact of his or her behavior or thinking. The concept is similar to the principle behind KNOWLEDGE OF RESULTS, namely, that immediate feedback is beneficial to learning. In interpersonal relations and psychotherapy, information feedback gives an individual insight into other people's experience of him or her. In BEHAVIOR THERAPY, information feedback is intended to help change and shape behavior directly.

**information hypothesis** the claim that conscious sensory processes may be modeled and explained by reference to the formal concepts of INFORMATION THEORY.

**information overload** the state that occurs when the amount or intensity of information exceeds the individual's processing capacity, leading to anxiety, poor decision making, and other undesirable consequences. Different people respond differently to information overload, and individuals with conditions such as autism can be especially sensitive to it. Thus, the subjective condition of the person is as important as the absolute amount of informational stimulation he or she encounters. See also COGNITIVE OVERLOAD; COMMUNICATION OVERLOAD; SENSORY OVERLOAD; STIMULUS OVERLOAD.

**information processing (IP)** 1. the manipulation of data by computers to accomplish some goal, such as problem solving or communication. 2. in cognitive psychology, the flow of information through the human nervous system, involving the operation of perceptual systems, memory stores, decision processes, and response mechanisms. **Information processing psychology** is the approach that concentrates on understanding these operations. See also INFORMATION THEORY.

**information-processing model** any conceptualization of memory as involving the progressive transfer of information through a system, much as a computer manipulates information in order to store, retrieve, and generate responses to it. The most popular model is that proposed in 1968 by U.S. cognitive psychologists Richard C. ATKINSON and Richard M. Shiffrin (1942– ). Sometimes also referred to as the **multistore model** or the **three-stage model**, their theory views memory as a system with three distinct components—SENSORY MEMORY, which collects and transforms material; SHORT-TERM MEMORY, which temporarily holds material; and LONG-TERM MEMORY, which more permanently retains material and recalls it as needed—that sequentially process information through the stages of ENCODING, STORAGE, and RETRIEVAL. Each component differs in how much material it can hold and for how long, as well as the mechanisms by which it operates. CONTROL PROCESSES govern informational flow, memory search, output of responses, and so forth. Compare CONNECTIONIST MODEL.

**information science** the field of study concerned with the representation, storage, retrieval, and transmission of information. Information science usually includes computer science and communication science. See INFORMATION THEORY.

**information systems** technology used to collect, manage, store, and report data. An example of such technology is a **healthcare information system (HIS)** designed to integrate the management of all aspects of a patient's medical records with a hospital's administrative and financial processes. Reports generated from the combined data collected by the system's database can serve to document and account for many program services, costs, and outcomes.

**information technology (IT)** the application of INFORMATION SCIENCE to practical objectives. Information technology subsumes computer and communication technologies.

**information test** a test that measures a person's general knowledge in different areas and at different levels of complexity.

**information theory** the principles relating to the communication or transmission of INFORMATION, which is defined as any message that reduces uncertainty. These principles deal with such areas as the encoding and decoding of messages, types of CHANNELS OF COMMUNICATION and their capacity to throughput information, the application of mathematical methods to the process, the problem of noise (distortion), and the relative effectiveness of various kinds of FEEDBACK.

**informed consent** a person's voluntary agreement to participate in a procedure on the basis of his or her understanding of its nature, its potential benefits and possible risks, and available alternatives. Informed consent is a fundamental requirement of research with humans and typically involves having participants sign documents, prior to

the start of a study, that describe specifically what their involvement would entail and noting that they are free to decline participation or to withdraw from the research at any time. In therapeutic contexts, the principle of informed consent has provided a foundation for **do not resuscitate (DNR)** orders and other ADVANCE DIRECTIVES and for the natural-death acts that have been passed into law throughout the United States. See also INSTITUTIONAL REVIEW BOARD.

**infra-** *prefix* below or within.

**infradian rhythm** any periodic variation in physiological or psychological function (see BIOLOGICAL RHYTHM) recurring in a cycle of less than 24 hours, such as the breathing rhythm. Compare CIRCADIAN RHYTHM; ULTRADIAN RHYTHM.

**infrahuman** *adj.* an obsolete term describing all species "below" humans (i.e., nonhumans). This reflects the earlier concept of a "chain of being" that culminates in humans.

**infrared** *n.* that part of the electromagnetic spectrum with wavelengths between about 0.8  $\mu\text{m}$  and 1 mm. The near-infrared part of the range (0.8–3  $\mu\text{m}$ ) is experienced as heat. Infrared cameras are sensitive to thermal emissions from objects and can therefore produce photography in the dark.

**infrared theory of smell** a theory that the olfactory sense organ functions as an infrared spectrometer. It assumes that ODORANTS each have a unique infrared absorption spectrum, which produces transient cooling of the cilia in the OLEFACTORY EPITHELIUM. The theory is called into question by the fact that isomers of some odorants have identical infrared absorption spectrums but produce different odors.

**infrasonic communication** among some nonhuman animals, the use of sound frequencies below the range of human hearing (i.e., below 20 Hz) for communication. Both elephants and whales use infrasonic communication extensively. The low frequencies have very long wavelengths that are transmitted for very long distances: They have been shown to coordinate activity between individuals over distances of several kilometers. Compare ULTRASONIC COMMUNICATION. [discovered in the 1980s by Cornell University researcher Katharine Boynton Payne (1937– )]

**infrasound** *n.* sound whose frequency is too low to be detected by human hearing, generally encompassing the range of 20 Hz to .001 Hz. The scientific study of infrasound is known as **infrasonics**. Able to cover long distances and circumvent or penetrate obstacles without dispersing, infrasonic waves are used by many nonhuman animals to communicate (see INFRASONIC COMMUNICATION) and have a variety of applications in geological monitoring (e.g., prediction of volcanic eruptions, detection of earthquakes). Compare ULTRASOUND.

**infundibulum** *n.* (*pl.* **infundibula**) a funnel-shaped anatomical structure, in particular the stalk of the PITUITARY GLAND, situated just below the THIRD VENTRICLE of the brain and above the sphenoid sinus at the base of the skull.

**ingenuity** *n.* cleverness at solving routine problems of daily life (at work, home, etc.): everyday CREATIVITY. —**ingenious** *adj.*

**ingratiation** *n.* efforts to win the liking and approval of other people, especially by deliberate IMPRESSION MANAGE-



MENT. Ingratiation is usually regarded as strategic, insincere, and manipulative. —**ingratiate** *vb*.

**ingroup** *n.* **1.** in general, any group to which one belongs or with which one identifies, but particularly a group judged to be different from other groups (OUTGROUPS). **2.** a group characterized by intense bonds of AFFILIATION such that each member feels a sense of kinship and some degree of loyalty to other members by virtue of their common group membership. Also called **we-group**. [defined in 1906 by U.S. sociologist William G. Sumner (1840–1910)]

**ingroup bias** the tendency to favor one's own group, its members, its characteristics, and its products, particularly in reference to other groups. The favoring of the ingroup tends to be more pronounced than the rejection of the OUTGROUP, but both tendencies become more pronounced during periods of intergroup contact. At the regional, cultural, or national level, this bias is often termed ETHNOCENTRISM. Also called **ingroup favoritism**. See also GROUP-SERVING BIAS.

**ingroup extremity effect** the tendency to describe and evaluate INGROUP members, their actions, and their products in exaggeratedly positive ways. Compare OUTGROUP EXTREMITY EFFECT. See also INGROUP BIAS; LINGUISTIC INTERGROUP BIAS.

**inguinal** *adj.* referring to the groin (inguen).

**INH** abbreviation for isonicotinic acid hydrazide. See ISO-GLIAZID.

**inhabitation** *n.* the idea that ghosts or spirits can occupy particular locations, as in hauntings, or take control of people, animals, or things, as in cases of alleged possession. See EXORCISM.

**inhalant** *n.* any of a variety of volatile substances that can be inhaled to produce intoxicating effects. Anesthetic gases (e.g., ether, chloroform, NITROUS OXIDE), industrial solvents (e.g., TOLUENE, gasoline, trichloroethylene, various aerosol propellants), and organic nitrites (e.g., AMYL NITRITE) are common inhalants. Anesthetic gases may cause asphyxiation, and chloroform has been associated with damage to the liver and kidneys. Industrial solvents are generally toxic, associated with damage to the kidneys, liver, and both central and peripheral nervous systems. Organic nitrites are less toxic but may cause ARRHYTHMIAS in individuals with heart conditions. Household products, such as model airplane glue, nail polish remover, spray paint, fabric protector, cooking spray, and correction fluid, are also used as inhalants, especially by adolescents. See also INHALATION OF DRUGS.

**inhalant abuse** in *DSM-IV-TR*, a pattern of inhalant use marked by recurrent significant adverse consequences related to the repeated ingestion of these substances. This diagnosis is preempted by the diagnosis of INHALANT DEPENDENCE: If the criteria for inhalant abuse and inhalant dependence are both met, only the latter diagnosis is given. In *DSM-5*, however, both have been subsumed into the category **inhalant use disorder** and are no longer considered distinct diagnoses. See also SUBSTANCE ABUSE.

**inhalant dependence** in *DSM-IV-TR*, a pattern of repeated or compulsive use of inhalants despite significant inhalant-related behavioral, physiological, and psychosocial problems and tolerance and characteristic withdrawal symptoms if use is suspended. In *DSM-5*, inhalant dependence and INHALANT ABUSE have been subsumed into in-

**halant use disorder** and are no longer considered distinct diagnoses. See also SUBSTANCE DEPENDENCE.

**inhalant intoxication** in *DSM-IV-TR* and *DSM-5*, a reversible syndrome resulting from the recent ingestion of inhalants. It includes clinically significant behavioral or psychological changes (e.g., confusion, belligerence, assaultiveness, apathy, impaired judgment, impaired social or occupational functioning), as well as one or more signs of physiological involvement (e.g., dizziness, visual disturbances, involuntary eye movements, incoordination, slurred speech, unsteady gait, tremor). At higher doses, lethargy, PSYCHOMOTOR RETARDATION, generalized muscle weakness, depressed reflexes, stupor, or coma may develop. See also SUBSTANCE INTOXICATION.

**inhalation of drugs** a means of administering a drug—often in the form of a gas or aerosol—via the mouth or the nose (insufflation), enabling it to reach the body tissues rapidly. Anesthetics for major surgery are administered by inhalation, which permits almost instant contact with the blood supplying the alveoli (air sacs) of the lungs. Oral or nasal inhalation is also a means of self-administration of abused substances, including cannabis, nicotine, cocaine, and volatile hydrocarbons (see INHALANT).

**inheritance** *n.* the transmission of physical or psychological traits from parents to their offspring. See also MENDELIAN INHERITANCE; MULTIFACTORIAL INHERITANCE.

**inheritance of acquired characteristics** see LAMARCKISM.

**inherited disorder** see GENETIC DISORDER.

**inhibition** *n.* **1.** the process of restraining one's impulses or behavior, either consciously or unconsciously, due to factors such as lack of confidence, fear of consequences, or moral qualms. **2.** in RESPONSE SELECTION, the suppression of COVERT RESPONSES in order to prevent incorrect responses. **3.** in conditioning, the active blocking or delay of a response to a stimulus. **4.** in psychoanalysis, an unconscious mechanism by which the SUPEREGO controls instinctive impulses that would threaten the EGO if allowed conscious expression or, in some psychoanalytic theories, might jeopardize attachment. For example, inhibited sexual desire may result from unconscious feelings of guilt implanted by parents. See also REACTIVE INHIBITION; RECIPROCAL INHIBITION. —**inhibit** *vb*. —**inhibited** *adj*.

**inhibition mechanisms** a series of neural mechanisms that restrict the flow of excitatory impulses. They include presynaptic and postsynaptic influences and HYPERPOLARIZATION of cells.

**inhibition of delay** in DELAY CONDITIONING, a reduction in the magnitude of the conditioned response (CR) during the early part of the conditioned stimulus (CS). For example, if a 15 second tone (the CS) precedes delivery of food (the unconditioned stimulus) to a dog, salivation (the CR) will eventually occur only after the tone has been on for a few seconds, not when it first comes on. See also TEMPORAL DISCRIMINATION.

**inhibition of return (IOR)** difficulty in returning attention to a previously attended location. When attention has been directed to a location for a period of time, another period of time follows in which it is more difficult to redirect attention to that location than to direct it elsewhere. Also called **inhibitory aftereffect**.

**inhibitor** *n.* a mechanism or stimulus that slows or suppresses an activity, process, or behavior.

**inhibitory aftereffect** see INHIBITION OF RETURN.

**inhibitory conditioning** CLASSICAL CONDITIONING in which the presence of a conditioned stimulus denotes the absence of an unconditioned stimulus that has a preexisting excitatory context. That is, the unconditioned stimulus must be one to which the organism has been exposed previously; otherwise, its absence would have no importance. Compare EXCITATORY CONDITIONING.

**inhibitory gradient (inhibition gradient)** see GENERALIZATION GRADIENT.

**inhibitory neurotransmitter** see NEUROTRANSMITTER.

**inhibitory postsynaptic potential (IPSP)** a brief increase in the difference in electrical charge across the membrane of a neuron that is caused by the transmission of a signal from a neighboring neuron across the synapse (specialized junction) separating them. IPSPs decrease the probability that the postsynaptic neuron will initiate an ACTION POTENTIAL and hence fire a nerve impulse. Compare EXCITATORY POSTSYNAPTIC POTENTIAL.

**inhibitory potential** a hypothesized temporary state in which REACTIVE INHIBITION and CONDITIONED INHIBITION result from responding to a stimulus, causing a reduction in the potential of recurrence of that response. [proposed by Clark L. HULL]

**inhibitory process** **1.** any phenomenon in human or nonhuman animal behavior that prevents or blocks actions that are problematic for the individual. See EXCITATORY-INHIBITORY PROCESSES. **2.** in memory, a mechanism that acts on situations requiring voluntary control to avoid intrusions from unwanted information (e.g., DIRECTED FORGETTING). **3.** in neurocognition, an automatic mechanism triggered whenever irrelevant information is activated and competes with relevant information. See RETRIEVAL BLOCK.

**inhibitory synapse** a specialized type of junction at which activity from one neuron (in the form of an ACTION POTENTIAL) reduces the probability of activity in an adjacent neuron by initiating an INHIBITORY POSTSYNAPTIC POTENTIAL. Compare EXCITATORY SYNAPSE.

**in-home respite** see RESPITE CARE.

**in-house evaluation** an organization's internal program assessments, conducted by an INTERNAL EVALUATOR, as opposed to evaluation conducted by an EXTERNAL EVALUATOR.

**initial cry** see EPILEPTIC CRY.

**initial data analysis (IDA)** an examination of the quality of a data set that is undertaken before beginning more complex statistical tests of hypotheses. It often involves calculating DESCRIPTIVE STATISTICS such as the mean and STANDARD DEVIATION, identifying minimum and maximum values, and graphing the data points to determine whether their arrangement follows a known or expected distribution. IDA is important for ensuring that data conform to assumptions of the statistical models that will be used for subsequent formal analysis.

**initial insomnia** difficulty in falling asleep. Some people with initial insomnia become so worried about being unable to fall asleep or about the effects of loss of sleep that they cannot relax sufficiently to induce sleep. Initial insomnia may be a symptom of a MAJOR DEPRESSIVE EPISODE. Also called **onset insomnia**; **sleep-onset insomnia**. Compare MIDDLE INSOMNIA; TERMINAL INSOMNIA.

**initial interview** in psychotherapy, the first interview with a client, which has some or all of the following goals: to establish a positive relationship, to listen to the client's problem described in his or her own words, to make a tentative diagnosis, to set treatment goals, and to formulate a plan for diagnostic tests, possible treatment, or referral.

**initial link** see CONCURRENT-CHAINS PROCEDURE.

**initial spurt** the high productivity or performance frequently noted at the start of a job, task, or series of trials. The initial spurt is more common with new tasks than tasks already familiar to the individual. Compare END SPURT.

**Initial Teaching Alphabet (ITA)** a near-phonetic alphabet of 44 characters, each with a single sound. It has been used since the early 1960s, with varying success, in teaching English-speaking children to read. [devised by British educator and publisher James Pitman (1901–1985)]

**initial value dependency** see LAW OF INITIAL VALUES.

**initial values law** see LAW OF INITIAL VALUES.

**initiating structure** a function of effective leadership that involves organizing the group for its work, typically by setting standards and objectives, identifying roles and positioning members in those roles, developing standard operating procedures, criticizing poor work, and defining the relationship between leaders and subordinates. Compare CONSIDERATION.

**initiation deficit** see ABULIA.

**initiative versus guilt** the third of ERIKSON'S EIGHT STAGES OF PSYCHOSOCIAL DEVELOPMENT, which occurs during the child's 3rd through 5th years. In planning, launching, and initiating fantasy, play, and other activity, the child learns to believe in his or her ability to successfully pursue goals. However, if these pursuits often fail or are criticized, the child may develop instead a feeling of self-doubt and guilt.

**injunctive norm** any of various socially determined consensual standards (SOCIAL NORMS) that describe how people should act, feel, and think in a given situation, irrespective of how people typically respond in the setting. Individuals who violate these standards are often judged negatively. Also called **prescriptive norm**. Compare DESCRIPTIVE NORM.

**injury deceitfulness** in sport, failure to disclose the presence of an injury in order to join or retain one's position on a team, to exercise, or to avoid benching or some other consequence.

**injury denial** failure to acknowledge the existence or severity of an injury.

**injury feigning** behavior used by some birds to fool potential predators and lure them away from a nest. The bird pretends to have an injury (e.g., a broken wing) at some distance from the nest, thus distracting the attention of an approaching predator by presenting itself as easy prey.

**inkblot test** see RORSCHACH INKBLOT TEST.

**INL** abbreviation for INNER NUCLEAR LAYER.

**inlier** *n.* an incorrect value in a data set. Inliers may arise from SYSTEMATIC ERROR, respondent error, or processing error. For example, a researcher may inadvertently report a

value in the wrong unit, such as including a RAW SCORE in a distribution of STANDARDIZED SCORES.

**innate** *adj.* **1.** denoting a capability or characteristic existing in an organism from birth, belonging to the original or essential constitution of the body or mind. Innate processes should be distinguished from those that develop later in infancy and childhood under maturational control. **2.** in philosophy, denoting an idea that is knowable by reason alone and that does not need to be established or confirmed by experience. Also called **inborn**; **native**.

**innate behavior** behavior that appears to be developed and expressed with no specific training or experience and thus has a strong genetic basis. It is generally accepted that most behavior is neither purely innate nor purely due to learning or experience. See EPIGENESIS; NATURE–NURTURE.

**innate ideas** ideas that are held to be present in the mind prior to any experience. Innate ideas are usually taken to be those ideas that are so intuitively obvious as to require no proof, such as the AXIOMS of geometry or the “contradiction principle” (X is not non-X) in logic. For René DESCARTES, who is often cited as the originator of the concept, innate ideas referred not so much to particular ideas as to the capacities and processes of rationality that allow such ideas to be immediately intuited as true. The notion of innate ideas later came under attack from John LOCKE and other thinkers in the empiricist tradition (see EMPIRICISM). Compare DERIVED IDEAS.

**innate releasing mechanism (IRM)** in ethology, the hypothesized neurological means by which organisms exhibit a FIXED ACTION PATTERN given a particular RELEASER, suggesting that there is a direct correspondence between a specific elicitor and a specific behavioral event. For example, the zigzag dance is performed by a male three-spined stickleback fish only when it sees another fish with a swollen abdomen.

**inner audience** an imagined listener to one's own silent, inner speech, often associated in psychoanalytic and psychodynamic theory with an authority figure. The sense of an inner audience may be important in the early development of SELF-REGULATION.

**inner conflict** see INTRAPSYCHIC CONFLICT.

**inner dialogue** a mental debate that an individual may engage in about any issue. In some systems of psychotherapy, clients are encouraged to express their inner dialogue aloud in words during sessions.

**inner-directed** *adj.* describing or relating to an individual who is self-motivated and not easily influenced by the opinions, values, or pressures of other people. Compare OTHER-DIRECTED; TRADITION-DIRECTED. [introduced by U.S. sociologist David Riesman (1909–2002)]

**inner ear** the part of the ear that comprises the bony and membranous labyrinths and contains the sense organs responsible for hearing and balance. For hearing, the major structure is the COCHLEA (see also LABYRINTH). For the sense of balance, the major structures are the SEMICIRCULAR CANALS, SACCULE, and UTRICLE (see also VESTIBULAR APPARATUS).

**inner estrangement** the feeling that external objects are unfamiliar and unreal. [defined by Austrian psychoanalyst Paul Federn (1871–1950)]

**inner hair cells** see HAIR CELL.

**inner language** **1.** the visual, auditory, and kinesthetic

mental imagery of words and concepts. **2.** speech spoken to oneself without vocalization. According to Lev VYGOTSKY, inner language follows EGOCENTRIC SPEECH and represents the child's recruitment of language in his or her reasoning efforts. Also called **inner speech**. See also INTERNALIZED SPEECH; VERBAL THOUGHT.

**inner nuclear layer (INL)** the layer of retinal cell bodies interposed between the photoreceptors and the RETINAL GANGLION CELLS. The inner nuclear layer contains AMACRINE CELLS, RETINAL HORIZONTAL CELLS, RETINAL BIPOLAR CELLS, and MÜLLER CELLS.

**inner plexiform layer (IPL)** the synaptic layer in the retina in which contacts are made between the dendrites of RETINAL GANGLION CELLS, BIPOLAR NEURONS, and AMACRINE CELLS.

**inner psychophysics** a systematic attempt to relate experience in the mind to states of excitation in the sensory apparatus. Compare OUTER PSYCHOPHYSICS. See PSYCHOPHYSICAL LAW. [introduced by Gustav Theodor FECHNER]

**inner scribe** see VISUOSPATIAL SKETCHPAD.

**inner speech** see INNER LANGUAGE.

**innervation** *n.* the supply of nerves to an organ (e.g., muscle or gland) or a body region. —**innervate** *vb.*

**innervation ratio** the ratio expressing the number of muscle fibers innervated by a single motor axon. It may vary from 3 muscle fibers per axon for small muscles in the fingers to 150 muscle fibers per axon for large muscle bundles of the arms and legs. The lower the ratio, the finer is the control of movements.

**innovation diffusion** the gradual spread of a new technology to populations or population segments. Rates of diffusion are determined by the adoption and successful use of the technology. Innovation includes both tangible technologies, such as computer-based systems, and intangible technologies, such as processes or ways of thinking. See also PRODUCT CHAMPION.

**innovative therapies** loosely, psychological treatments or techniques that are new and different from traditional therapies and often have not yet been empirically validated.

**inoculation theory** a theory postulating that resistance to PERSUASION can be created by exposing people to weak persuasive attacks that are easily refuted. This helps people practice defending their attitudes as well as make them aware that their attitudes can be challenged, which thereby creates resistance to subsequent stronger messages. [originally proposed by William J. MCGUIRE]

**Inocybe** *n.* a genus of mushrooms, some species of which are poisonous because they contain the toxic alkaloid MUSCARINE. Symptoms of poisoning include salivation, perspiration, and lacrimation (tears); at higher doses, these symptoms may be followed by abdominal pains, severe nausea and vomiting, diarrhea, visual disturbances, labored breathing, and bradycardia (slowed heart rate), which may potentially result in death from cardiac or respiratory failure. Treatment is with ATROPINE.

**inositol** *n.* a compound similar to glucose that occurs in many foods and is sometimes classed as a vitamin. It is a component of cell-membrane phospholipids and plasma lipoproteins, and phosphorylated derivatives (see INOSITOL PHOSPHATES) function as SECOND MESSENGERS in cells.

**inositol phosphates** derivatives of inositol that con-

tain one or more phosphate groups, some of which are SECOND MESSENGERS in cells, serving to relay signals from receptors at the cell surface to other parts of the cell. The most studied of these second messengers is **inositol 1,4,5-trisphosphate (IP<sub>3</sub>)**. The action of LITHIUM salts, used to treat bipolar disorders, may be linked to their inhibition of the enzyme **inositol monophosphatase**, which is involved in the recycling of inositol from the inositol phosphates. It has been hypothesized that this inhibition thus leads to a deficiency of inositol and a corresponding excess of inositol phosphates.

**inpatient** *n.* a person who has been formally admitted to a hospital for a period of at least 24 hours for observation, diagnosis, or treatment, as distinguished from an OUTPATIENT or an emergency-room patient.

**Inpatient Multidimensional Psychiatric Scale (IMPS)** an interview-based rating instrument used to assess attitudes and behaviors of individuals with psychoses, typically administered on admission to mental institutions. It yields information on symptom severity and is used to classify patients into psychotic types, such as hostile-paranoid, excited-hostile, excited-grandiose, and so forth. The scale was originally published in 1962 as a revision of the 1953 **Multidimensional Scale for Rating Psychiatric Patients**. [developed by U.S. psychometrician Maurice Lorr (1910–1998) and U.S. psychologists C. James Klett (1926– ), Douglas M. McNair (1927–2008), and Julian J. Lasky (1918–2012)]

**inpatient services** diagnostic and treatment services available to hospitalized patients and usually unavailable or only partially available in outpatient facilities. Examples are continuous supervision; medical treatment and nursing care; specialized treatment techniques, such as rehabilitational, occupational, movement, or recreation therapy; and social work services.

**input** *n.* the signals fed into a communication channel together with the energy put into a system. In the context of the interaction between a person and a computer, input usually refers to data or instructions fed into the computer. Compare OUTPUT.

**input-output mechanism** a simple model of INFORMATION PROCESSING in which a given input automatically produces a given output. An input-output mechanism is a closed system in which information is subjected to a fixed sequence of preset operations and there is no interaction with the environment during throughput. Some behaviorist theories have been criticized as reducing the human organism to an input-output mechanism.

**input-process-output model (IPO model)** an analysis of performance and processing systems that assumes raw materials (inputs) are transformed by internal system processes to generate results (output). Applied to human INFORMATION PROCESSING, for example, an IPO model assumes that perceptual mechanisms encode information, which then is transformed by cognitive processes to result in psychological and behavioral responses. Similarly, IPO models of group productivity assume that group-level processes mediate the relationship between individual, group, and situational input variables and the resulting performance outcomes.

**inquiry training model** see INDUCTIVE TEACHING MODEL.

**inquisitorial system** see ADVERSARIAL SYSTEM.

**INRC group** abbreviation for IDENTITY, NEGATION, RECIPROCAL, AND CORRELATIVE OPERATIONS.

**in re Gault** a 1967 U.S. Supreme Court decision that fundamentally changed the rights of juveniles in legal proceedings by establishing that MINORS have many of the same DUE PROCESS rights as adults.

**insane asylum** a former (19th-century) name for a residential institution for the treatment of people with severe mental illness. Also called **lunatic asylum**. See ASYLUM.

**insanity** *n.* in law, a condition of the mind that renders a person incapable of being responsible for his or her criminal acts. Defendants who are found to be NOT GUILTY BY REASON OF INSANITY therefore lack CRIMINAL RESPONSIBILITY for their conduct. Whether a person is insane, in this legal sense, is determined by judges and juries, not psychologists or psychiatrists. Numerous legal standards for determining criminal responsibility, the central issue in an INSANITY DEFENSE, have been used at various times in many jurisdictions. These include the DURHAM RULE, the AMERICAN LAW INSTITUTE MODEL PENAL CODE INSANITY TEST, and the M'NAGHTEN RULE. See also PARTIAL INSANITY. —**insane** *adj.*

**insanity defense** in criminal law, the defense plea that an individual lacks CRIMINAL RESPONSIBILITY for his or her conduct. See also DIMINISHED RESPONSIBILITY.

**Insanity Defense Reform Act (IDRA)** legislation passed by the U.S. Congress in 1984 that modified existing laws relating to INSANITY DEFENSE cases. One modification involved removing the volitional component of the AMERICAN LAW INSTITUTE MODEL PENAL CODE INSANITY TEST, so that the inability to “conform one’s conduct to the requirements of the law” was no longer a factor in judging insanity. Another modification involved shifting the burden of proof (responsibility for convincing the court beyond a reasonable doubt of the truth of an allegation) in such cases from the prosecution to the defense.

**insect phobia** see ANIMAL PHOBIA; SPECIFIC PHOBIA.

**insecure attachment** in the STRANGE SITUATION, one of several patterns of a generally negative parent-child relationship in which the child fails to display confidence when the parent is present, sometimes shows distress when the parent leaves, and reacts to the returning parent by avoidance (see AVOIDANT ATTACHMENT) or with ambivalence (see AMBIVALENT ATTACHMENT). See also ANXIOUS-AVOIDANT ATTACHMENT; ANXIOUS-RESISTANT ATTACHMENT; DISORGANIZED ATTACHMENT. Compare SECURE ATTACHMENT.

**insecurity** *n.* a feeling of inadequacy, lack of self-confidence, and inability to cope, accompanied by general uncertainty and anxiety about one’s goals, abilities, or relationships with others. —**insecure** *adj.*

**insemination** *n.* the deposition of semen within the vagina, either during coitus or by other means (see ARTIFICIAL INSEMINATION).

**insensible** *adj.* 1. without sensation or consciousness. 2. lacking emotional responsiveness. —**insensibility** *n.*

**insert headphone** a device for presenting sound in a sealed ear canal. Typically, the transducer is located remotely and sound is routed via a thin tube, which is embedded at its terminus in a soft foam plug; the earplug and tube are inserted in the ear canal. Such a system provides better acoustic isolation than do typical headphones and

perhaps better control of the sound impinging on the tympanic membrane.

**insight** *n.* **1.** the clear and often sudden discernment of a solution to a problem by means that are not obvious and may never become so, even after one has tried hard to work out how one has arrived at the solution. There are many different theories of how insights are formed and of the kinds of insights that exist. For example, in the 1990s, U.S. psychologists Robert J. Sternberg (1949– ) and Janet Davidson proposed a theory in which there are three main kinds of insights: (a) selective encoding insights, which are used to distinguish relevant from irrelevant information; (b) selective comparison insights, which are used to distinguish what information already stored in long-term memory is relevant for one's purposes; and (c) selective combination insights, which are used to put together the available information so as to formulate a solution to a given problem. **2.** in psychotherapy, an awareness of underlying sources of emotional, cognitive, or behavioral responses and difficulties in oneself or another person. See also AHA EXPERIENCE; EPIPHANY.

**insight learning** a cognitive form of learning involving the mental rearrangement or restructuring of the elements in a problem to achieve a sudden understanding of the problem and arrive at a solution. Insight learning was described by Wolfgang KÖHLER in the 1920s, based on his observations of apes stacking boxes or using sticks to retrieve food, and was offered as an alternative to TRIAL-AND-ERROR LEARNING.

**insight therapy** any form of psychotherapy based on the theory that a client's problems cannot be resolved without his or her gaining self-understanding and thus becoming aware of their origins. This approach—characteristic, for example, of PSYCHOANALYSIS and PSYCHODYNAMIC PSYCHOTHERAPY—contrasts with therapies directed toward removal of symptoms or behavior modification.

**in situ hybridization** a method for detecting particular NUCLEOTIDE sequences within DNA or RNA in tissue sections by providing a labeled nucleotide probe that is complementary to, and will therefore hybridize with, the sequence of interest.

**insomnia** *n.* difficulty in initiating or maintaining a restorative sleep, which results in fatigue, the severity or persistence of which causes clinically significant distress or impairment in functioning. Such sleeplessness may be caused by a transient or chronic physical condition or psychological disturbance. Also called **agrypnia**; **ahypnia**; **ahypnosia**; **anhypnia**. See DISORDERS OF INITIATING AND MAINTAINING SLEEP; FATAL FAMILIAL INSOMNIA; INITIAL INSOMNIA; INTERMITTENT INSOMNIA; MIDDLE INSOMNIA; PRIMARY INSOMNIA; PSEUDOINSOMNIA; TERMINAL INSOMNIA. —**insomniac** *n.*

**insomnia disorder** see DISORDERS OF INITIATING AND MAINTAINING SLEEP; PRIMARY INSOMNIA.

**inspectionalism** *n.* see VOYEURISM.

**inspection time (IT)** in DISCRIMINATION LEARNING, the amount of time it takes an individual to make simple visual discriminations, such as determining which of two lines is longer, under specific experimental conditions. Inspection time is found to be correlated with IQ.

**inspective exploration** EXPLORATORY BEHAVIOR used as a means of reducing anxiety, fear, or uncertainty associated with novel stimuli and thus decreasing arousal. Also

called **specific exploration**. Compare DIVERSIVE EXPLORATION. [defined by Daniel E. BERLYNE]

**inspiration** *n.* **1.** the act of drawing air into the lungs. **2.** in cognitive psychology, a sudden insight or leap in understanding that produces new, creative ideas or approaches to a problem. See AHA EXPERIENCE; DISCONTINUITY HYPOTHESIS. **3.** the process of being aroused or stimulated to do something, or the quality of being so aroused, as in *Her speech gave us the inspiration we needed.* —**inspirational** *adj.* —**inspire** *vb.* —**inspired** *adj.*

**inspirational motivation** a goal-directed state aroused by exposure to high-performing, successful, or admired models.

**inspiration–expiration ratio (I/E ratio)** the ratio of the duration of the inspiration phase of the respiratory cycle to the duration of the exhalation phase; that is, the time taken to breathe in divided by the time taken to breathe out. This ratio is typically used in studies of emotion: Fearful states have high I/E ratios, whereas nonfearful attentive states have low I/E ratios.

**instability** *n.* in psychology, a tendency toward lack of self-control, erratic behavior, shifting attitudes and beliefs, and rapidly changing or excessive emotions. —**unstable** *adj.*

**instance theory** see EXEMPLAR THEORY.

**instant gratification** the meeting or satisfying of one's needs or wishes without delay. Therapy may be important to help reduce the desire for instant gratification when postponing needs and tolerating delays would be realistic or in the best interests of the client.

**instigation therapy** BEHAVIOR THERAPY in which the therapist provides a positive model and reinforces the client's progress toward self-regulation and self-evaluation.

**instinct** *n.* **1.** an innate, species-specific biological force that impels an organism to do something, particularly to perform a certain act or respond in a certain manner to specific stimuli. See also HORMIC PSYCHOLOGY. **2.** in classical psychoanalytic theory, a basic biological drive (e.g., hunger, thirst, sex, aggression) that must be fulfilled in order to maintain physical and psychological equilibrium. Sigmund FREUD classified instincts into two types: those derived from the LIFE INSTINCT and those derived from the DEATH INSTINCT. See also COMPONENT INSTINCT; EROTIC INSTINCT; LIBIDO; SATISFACTION OF INSTINCTS; SEXUAL INSTINCT. **3.** in popular usage, any inherent or unlearned predisposition (behavioral or otherwise) or motivational force. —**instinctive** or **instinctual** *adj.*

**instinctive behavior** stereotyped, unlearned, largely stimulus-bound adaptive behavior limited in its expression by the inherent properties of the nervous system and genetic factors. It is species specific and involves complex activity patterns rather than simple reflexes. See FIXED ACTION PATTERN; INNATE RELEASING MECHANISM; MODAL ACTION PATTERN; RELEASER.

**instinctive drift** the tendency of learned, reinforced behavior to gradually return to a more innate behavior. For example, raccoons trained to drop coins into a container will eventually begin to dip the coins into the container, pull them back out, rub them together, and dip them in again. The learned behavior of dropping coins becomes more representative of the innate behavior of food washing. Also called **instinctual drift**. [proposed in 1961 by

U.S. psychologists Keller Breland (1915–1965) and Marian Breland (1920–2001)]

**instinctive knowledge** unlearned and generally unalterable behavior, observable when a new stimulus (i.e., one not previously encountered) elicits an affective response indicative of genetic influences. An example is fear of and flight from certain predators in the absence of previous exposure to these animals.

**instinctual aim** see AIM OF THE INSTINCT.

**instinctual drive** see INSTINCT.

**instinctualization of smell** **1.** the capacity of smell to play a part in COPROPHILIA or anal fixations. **2.** the role of body odors as arousal factors in sexual foreplay. See also COMPONENT INSTINCT.

**institution** *n.* **1.** an established practice, tradition, behavior, or system of roles and relationships, such as marriage, that is considered a normative structure or arrangement within a society. Sociologists usually distinguish between four main types of institutions: political (e.g., monarchy), economic (e.g., capitalism), cultural (e.g., media, education, religion), and social (e.g., family organization, race, gender). **2.** a large, often publicly funded organization, such as a university, museum, or charitable foundation, or the building that houses such an organization. **3.** a building or building complex in which individuals are cared for or confined for extended periods of time, especially a psychiatric hospital or a prison. —**institutional** *adj.*

**Institutional Animal Care and Use Committee (IACUC)** a committee responsible for overseeing an institute's program and research protocols involving nonhuman animals. The primary responsibility of the IACUC is to ensure the humane treatment of the animals and compliance of the research program and procedures with established regulations. U.S. federal law mandates that any institute conducting research with laboratory animals must establish an IACUC, and any member of the institution who plans to conduct an experiment or undertake activities that involve animals must submit a proposal to the IACUC for review. See also ANIMAL CARE AND USE.

**institutional care** medical or mental health care services received by an inpatient in a hospital, nursing home, or other residential institution.

**institutionalism** *n.* see SOCIAL BREAKDOWN SYNDROME.

**institutionalization** *n.* **1.** placement of an individual in an institution for therapeutic or correctional purposes or when he or she is incapable of living independently, often as a result of a physical or mental condition. **2.** an individual's gradual adaptation to institutional life over a long period, especially when this is seen as rendering him or her passive, dependent, and generally unsuited to life outside the institution. —**institutionalize** *vb.*

**institutionalized racism** differential treatment of individuals on the basis of their racial group by religious organizations, governments, businesses, the media, educational institutions, and other large social entities. Examples include DISCRIMINATION in hiring, promotion, and advancement at work; restrictive housing regulations that promote segregation; unfair portrayal of minority members in newspapers and magazines; and legal statutes that restrict the civil liberties of the members of specific racial categories. A parallel phenomenon exists for SEXISM. Also called **institutional racism**.

**institutional neurosis** see SOCIAL BREAKDOWN SYNDROME.

**institutional release** see RELEASE.

**institutional research** a study conducted to obtain information about an academic setting. For example, a university may research its faculty, staff, students, finances, technology, campus climate, and other characteristics so as to facilitate better decision making.

**institutional review board (IRB)** a committee named by an agency or institution to review research proposals originating within that agency for ethical acceptability and compliance with the organization's codes of conduct. IRBs help protect research participants and are mandatory at any U.S. institution receiving federal funds for research.

**instructed learning** the second stage of CULTURAL LEARNING, in which a more accomplished person instructs a less accomplished person. The process requires that learners grasp the instructor's understanding of the task and then compare it with their own understanding. See also COLLABORATIVE LEARNING; IMITATIVE LEARNING. [proposed by U.S. psychologist Michael Tomasello (1950– ) and colleagues]

**instructional set** the attitude toward a task or test that is communicated (intentionally or unintentionally) by the experimenter to the participants. It conveys information on how they should approach the task or test, such as whether speed is more (or less) important than accuracy.

**instructional theory of development** the theory that the development of unorganized neural elements into differentiated neural structures is shaped by environmental factors.

**instructional treatment** any educational intervention designed, implemented, and evaluated by an instructor to increase learning or enhance various kinds of performance.

**instrument** *n.* **1.** any tool, device, or other means by which researchers assess or gather data about study participants. Examples include tests, INTERVIEWS, QUESTIONNAIRES, SURVEYS, RATING SCALES, and reaction-time apparatus. See also ASSESSMENT INSTRUMENT. **2.** in general, an implement used in performing specific operations, such as cutting or writing.

**instrumental** *n.* in some languages, such as Sanskrit, a CASE of nouns, pronouns, and noun phrases identifying entities that are used by the AGENT to perform the action of a verb. The instrumental is also used as a category in CASE GRAMMAR; in *The crowbar pried open the door*, for example, the inanimate noun *crowbar* is said to be the instrument rather than the agent (here unidentified). See also EXPERIENCER; PATIENT.

**instrumental activities of daily living (IADLs)** activities essential to an individual's ability to function autonomously, including cooking, doing laundry, using the telephone, managing money, shopping, getting to places beyond walking distance, and the like. See also ACTIVITIES OF DAILY LIVING.

**instrumental aggression** see AGGRESSION.

**instrumental behavior** **1.** behavior that is learned and elicited via positive or negative reinforcement of target (rather than instinctive) responses. The term is used synonymously with OPERANT BEHAVIOR, usually for describing

behavior during **CONDITIONING** procedures that involves long sequences of activity, such as solving a puzzle box. **2.** actions that directly affect or manage the behavior of others. Among nonhuman animals, for example, a subordinate adult may engage in infantile behavior to inhibit others' threatening or aggressive actions. Some animals use **ALARM CALLS** to distract other group members so they can make use of a valued resource without interference.

**instrumental conditioning** any form of **CONDITIONING** in which the correct response is essential for **REINFORCEMENT**. Instrumental conditioning is similar to **OPERANT CONDITIONING** and usually involves complex activities in order to reach a goal, such as when a rat is trained to navigate a maze to obtain food. It contrasts with **CLASSICAL CONDITIONING**, in which reinforcement is given regardless of the response. Also called **instrumental learning**; **Type II conditioning**; **Type R conditioning**.

**instrumental dependence** the tendency to rely on others for accomplishing tasks.

**Instrumental Enrichment** a program for helping people improve their intellectual performance by developing the metacognitive and cognitive skills essential to successful performance of intellectual tasks. First used for pupils with intellectual disabilities, Instrumental Enrichment was later applied to performers at all ages and intellectual levels. The program involves solving puzzles, some of which are similar to the kinds of problems found on conventional intelligence tests, as well as bridging, which involves relating performance on these puzzles to the solution of real-world problems. Results of evaluations are mixed but suggest at least some benefits for performers with intellectual disabilities (who tend to be weak in metacognitive skills). [formulated in the 1970s by Romanian-born Israeli psychologist Reuven Feuerstein (1921–2014) and his collaborators]

**instrumentalism** *n.* **1.** in the philosophy of science, the position that theories are not to be considered as either true or false but as instruments of explanation that allow observations of the world to be meaningfully ordered. This view is related to **MACHIAN POSITIVISM**. **2.** a theory of knowledge that emphasizes the pragmatic value, rather than the truth value, of ideas. In this view, the value of an idea, concept, or judgment lies in its ability to explain, predict, and control one's concrete functional interactions with the experienced world. This view is related to **PRAGMATISM**. [developed by John DEWEY] **3.** the view or attitude that the primary motivation for social interaction is the attainment of some positive advantage or good for the self, so that others are regarded and used as instruments in acquiring such advantage. —**instrumentalist** *adj.*, *n.*

**instrumentality theory** the theory that a person's attitude toward an event will depend on his or her perception of its function as an instrument in bringing about desirable or undesirable consequences. See also **VALENCE-INSTRUMENTALITY-EXPECTANCY THEORY**.

**instrumental learning** see **INSTRUMENTAL CONDITIONING**.

**instrumental orientation** the tendency of an individual or group to focus on assigned tasks and goals and the tangible benefits of achieving them (e.g., increased pay) rather than on the interpersonal relationships involved in achieving them. See also **TASK-MOTIVATED**; **TASK-ORIENTED GROUP**.

**instrumental relativist orientation** see **PRECONVENTIONAL LEVEL**.

**instrumental response** any response that achieves a goal or contributes to its achievement, such as a response that is effective in gaining a reward or avoiding pain (e.g., a rat pressing a bar to obtain food).

**instrumentation** *n.* the creation and use of equipment and devices (including psychological tests) for the measurement of some attribute or the control of experiments (e.g., automation of stimulus presentation and data collection). It is important that a measurement instrument not only be trustworthy and reliable but also properly maintained and consistently administered so as to ensure **INTERNAL VALIDITY**.

**instrumentation effect** any change in the **DEPENDENT VARIABLE** in a study that arises from changes in the measuring instrument used. For example, an experimenter may subtly but unintentionally alter his or her testing method across sessions, such that a pretest and a posttest are administered differently. Instrumentation effects pose a threat to **INTERNAL VALIDITY**.

**instrument drift** changes in an instrument, usually gradual and often predictable, that can threaten the validity of conclusions drawn from the data obtained with that instrument. An example would be the stretching of spring scales. Periodic recalibration of the measuring device helps minimize or rectify instrument drift. Also called **instrument decay**. See also **OBSERVER DRIFT**.

**insufficient justification effect** the finding that in some situations people are more likely to undertake a task that goes against their character or personal beliefs when offered a small reward versus a larger reward, and similarly more likely to decline a desired activity when presented with a mild threat versus a more serious threat. For example, in a classic 1959 study by psychologists Leon FESTINGER and James M. Carlsmith, participants were offered money to lie about their interest in a particular task: Those who received \$1 were more motivated to lie than those who received \$20. The theory is that when **EXTRINSIC MOTIVATION** is low, people are motivated to reduce the **COGNITIVE DISSONANCE** they experience by finding an **INTRINSIC MOTIVATION** for their behavior (e.g., by telling themselves they had no wish to break that particular rule anyway). Compare **OVERJUSTIFICATION EFFECT**.

**insufflation** *n.* **1.** the act of breathing or blowing into something. **2.** the nasal inhalation of a drug, as in snorting cocaine. —**insufflate** *vb.*

**insula** *n.* (*pl.* **insulae**) a region of the cerebral cortex of primate brains that is buried in a cleft near the lower end of the **LATERAL SULCUS**. It is thought to play a major role in emotion (particularly negative emotions, such as disgust), taste, self-awareness, and motor control of functions such as swallowing and speech articulation. It may also be involved in addictive cravings and the regulation of procedural memory. Also called **central lobe**; **insular cortex**; **island of Reil**. [from Latin, "island"; first described by German physician Johann Reil (1759–1813)]

**insulin** *n.* a hormone, secreted by the B cells of the **ISLETS OF LANGERHANS** in the pancreas, that facilitates the transfer of glucose molecules through cell membranes. Together with **GLUCAGON**, it plays a key role in regulating **BLOOD SUGAR** and carbohydrate metabolism. In the absence of sufficient concentrations of insulin, glucose accumulates in

the blood and is excreted, as in DIABETES MELLITUS (see also HYPERGLYCEMIA). Excessive concentrations of insulin (resulting, e.g., from insulin overdosage or an insulin-secreting tumor) give rise to HYPOGLYCEMIA.

**insulin-dependent diabetes mellitus (IDDM)** see DIABETES MELLITUS.

**insulin lipodystrophy** see LIPODYSTROPHY.

**insulin-shock therapy** a treatment for schizophrenia, rarely used after 1960, in which hypoglycemia was induced by intramuscular injection of insulin to produce a temporary coma. Inductions might last for 15 to 60 minutes, and a full course of treatment typically involved numerous coma inductions over a given period. Also called **coma therapy**; **insulin-coma therapy**. [introduced in 1927 by Austrian-born U.S. psychiatrist Manfred J. Sakel (1900–1957)]

**intake interview 1.** the initial interview with a client by a therapist or counselor to obtain both information regarding the issues or problems that have brought the client into therapy or counseling and preliminary information regarding personal and family history. **2.** the initial interview with a patient who is being admitted into a psychiatric hospital, day treatment program, or inpatient substance abuse facility. Intake interviews are also common in government-funded mental health services, such as those provided at community mental health centers, in determining eligibility and appropriateness of the client for services offered. An intake interview may be carried out by a specialist who may not necessarily treat the patient, with the information obtained used to determine the best course of treatment and the appropriate therapist to provide it.

**integral n. 1.** a whole number (e.g., 2, 9, 11), as opposed to numbers that are fractions (e.g., 1/4, 1.5). **2.** the area underneath a curve plotted on an *x*-axis and *y*-axis between two points, *a* and *b*. It is one of two main concepts—the other being the DERIVATIVE—applied within calculus to the study of change and area.

**integrated care** a consistent, systematic, and coordinated set of HEALTH CARE services that are developed, managed, and delivered to individual patients over a range of organizations and by a variety of associated professionals and other care providers. The approach seeks to reduce fragmented care (i.e., diagnosis and treatment by multiple unconnected and minimally communicating doctors and caregivers); to improve clinical outcomes, quality of life, patient satisfaction, effectiveness, and efficiency (ideally using EVIDENCE-BASED PRACTICE guidelines); and to reduce costs. The complexities underlying development of such approaches include establishing a common philosophy of assessment and treatment, developing partnership relationships, linking and planning information systems, coordinating patient flow among providers, and so forth. The efficacy of integrated care is often viewed and measured from two perspectives: that of the patient and that of the organizations and individual service providers. Although primarily associated with medicine proper, services may include mental health components (e.g., psychosocial assessment and treatment). Also called **integrated medicine**.

**integrated delivery system (IDS)** a health care provider organization that is completely integrated operationally and clinically and that offers a full range of health care services, including physician, hospital, and adjunct services. IDSs began to develop in the early 1980s and multiplied rapidly in the 1990s. They are found in varying

formats, one of the more typical being an alliance between hospitals and individual physicians or GROUP MEDICAL PRACTICES. An IDS is a MANAGED CARE organization.

**integrated display** in ergonomics, a machine display designed on the principle that similar categories of information should be grouped together. Compare SEPARATED DISPLAY.

**integrated model** in evaluation research, an administrative relationship (used in FORMATIVE EVALUATION) between a program director and multiple production units made up of writers, designers, and evaluators who are all involved in program development as well as program evaluation. Members of these units do not necessarily share equal importance or equal access to the program director. Also called **dependent model**. Compare SEGREGATED MODEL.

**integrated system** a program allowing individuals with disabilities to manage computer functions, their environments, telephone communication, and powered mobility through a central control.

**integration n. 1.** the coordination or unification of parts into a totality. This general meaning has been incorporated into a wide variety of psychological contexts and topics. For example, the integration of personality denotes the gradual bringing together of constituent traits, behavioral patterns, motives, and so forth to form an organized whole that functions effectively and with minimal effort or without conflict. **2.** see ACCULTURATION STRATEGIES. **3.** in attitude research, see COMPLEXITY OF AN ATTITUDE.

**integrative agnosia** a form of VISUAL AGNOSIA in which individuals are able to perceive the elements of an object but find it difficult to combine them into a perceptual whole. Typically, symptoms of both apperceptive and associative agnosia are present. Individuals affected by this kind of agnosia can usually draw an object accurately but only through a laborious process.

**integrative bargaining** a form of BARGAINING in which the parties work together to achieve outcomes that benefit both sides. Compare DISTRIBUTIVE BARGAINING.

**integrative behavioral couples therapy** a form of BEHAVIORAL COUPLES THERAPY that specifically focuses on helping partners to develop acceptance and greater emotional understanding of one another and to integrate that understanding with an effort to identify, address, and change problematic patterns in their relationship that bother them both. The therapy also helps couples to explore how experiences in their respective pasts may inform their relationship in the present. Compare COGNITIVE BEHAVIORAL COUPLES THERAPY. [developed in the 1990s by U.S. psychologists Andrew Christensen and Neil Jacobson (1949–1999)]

**integrative complexity** the extent to which an ATTITUDE OBJECT is considered to have both positive and negative features and the extent to which these features are seen as related to one another. Low integrative complexity occurs when an attitude object is seen exclusively in positive or negative terms. Moderate integrative complexity occurs when the object is seen as having both positive and negative features, but these features are seen as having little relation to one another. High integrative complexity occurs when the positive and negative features are seen as related to one another.

**integrative learning** the process of learning tasks that



involve simultaneous or successive functioning of several modalities, as in reading and writing.

**integrative medicine** the combination of conventional medical treatments and complementary therapies that have demonstrated scientific merit with regard to safety and efficacy. See also COMPLEMENTARY AND ALTERNATIVE MEDICINE.

**integrative psychotherapy** psychotherapy that selects theoretical models or techniques from various therapeutic schools to suit the client's particular problems. For example, PSYCHODYNAMIC PSYCHOTHERAPY and GESTALT THERAPY may be combined through the practice of INTERPRETATION of material in the HERE AND NOW. The Society for the Exploration of Psychotherapy Integration (SEPI), founded in 1983, reflects the growing interest in, and the rapid development and use of, such combined therapeutic techniques. Also called **psychotherapy integration**. See also ECLECTIC PSYCHOTHERAPY.

**integrity** *n.* the quality of moral consistency, honesty, and truthfulness with oneself and others.

**integrity group psychotherapy** a type of GROUP THERAPY in which openness and honesty are expected from all participants, and experienced members of the group serve as models of sincerity and involvement. [developed by O. Hobart MOWRER]

**integrity testing** procedures used to determine whether employees or applicants for employment are likely to engage in COUNTERPRODUCTIVE WORK BEHAVIOR. **Overt integrity tests** are inventories that directly ask people about their past behaviors and their attitudes toward unethical, illegal, and counterproductive behavior. **Personality-based integrity tests** are inventories measuring the character traits thought to be related to unethical, illegal, and counterproductive behavior. Integrity tests are sometimes called **honesty tests**.

**integrity versus despair** the eighth and final stage of ERIKSON'S EIGHT STAGES OF PSYCHOSOCIAL DEVELOPMENT, which occurs during old age. In this stage, the individual reflects on the life he or she has lived and may develop either integrity—a sense of satisfaction in having lived a good life and the ability to approach death with equanimity—or despair—a feeling of bitterness about opportunities missed and time wasted, and a dread of approaching death. Also called **ego integrity versus despair**.

**intellect** *n.* **1.** the INTELLECTUAL FUNCTIONS of the mind considered collectively. **2.** an individual's capacity for abstract, objective reasoning, especially as contrasted with his or her capacity for feeling, imagining, or acting. —**intellectual** *adj.*

**intellectual detachment** see DETACHMENT.

**intellectual disability** a DEVELOPMENTAL DISABILITY characterized by mild to profound limitations in cognitive function (e.g., learning, problem solving, reasoning, planning) and in ADAPTIVE BEHAVIOR, impairing one's ability to acquire skills typical for one's age group as a child or necessary for one's later independent functioning as an adult. It is now the preferred term for MENTAL RETARDATION. In DSM-5, a diagnosis of intellectual disability, including its degree of severity, requires clinical assessment of an individual's level of difficulty with conceptual skills (e.g., reading, writing, arithmetic), social skills (e.g., communication, emotion regulation), and practical skills (e.g., self-care, ability to manage ACTIVITIES OF DAILY LIVING). Deficits in

cognitive function may be assessed with standardized intelligence tests, but an individual's IQ as measured by such tests is less emphasized in the diagnostic criteria for intellectual disability than in the traditional criteria for mental retardation. Also called **intellectual developmental disorder**.

**intellectual function** any of the mental functions involved in acquiring, developing, and relating ideas, concepts, and hypotheses. Memory, imagination, and judgment can also be considered intellectual functions. Also called **intellectual operation**. See HIGHER MENTAL PROCESS.

**intellectual impoverishment** diminished intellectual capacity, such as problem-solving ability and concentration. This condition is observed in many people with schizophrenia, dementia, or depression and in individuals living in a deprived, unstimulating environment. See also POVERTY OF IDEAS.

**intellectual insight** in psychotherapy, an objective, rational awareness of experiences or relationships. Some theorists posit that intellectual insight by itself does not advance the therapeutic process and may even impede it because little or no feeling (i.e., emotional content) is involved.

**intellectualism** *n.* **1.** in philosophy, a position consistent with IDEALISM or RATIONALISM that emphasizes the preeminence of mind or idea. **2.** in psychology, the doctrine that cognitive functions are preeminent, so that emotive and motivational experiential states can be explained by, or originate from, more fundamental cognitive states. —**intellectualist** *adj.*

**intellectualization** *n.* in psychoanalysis, a DEFENSE MECHANISM in which conflicts or emotional problems are dealt with abstractly or concealed by excessive intellectual activity. —**intellectualize** *vb.*

**intellectual maturity** the adult stage of intellectual development, in which the individual typically has a high level of good judgment, often combined with WISDOM.

**intellectual operation** see INTELLECTUAL FUNCTION.

**intellectual plasticity** the extent to which an individual's intellectual abilities are modifiable and thus subject to various kinds of change.

**intellectual stimulation** **1.** the pleasurable sense of being challenged and provoked that can arise from an encounter with new, difficult, or interesting ideas. **2.** the enhancement of cognitive processing—including creativity, discernment, and insight—that occurs when individuals exchange ideas and opinions during interpersonal or group discussion.

**intellectual subaverage functioning** an IQ more than two standard deviations below the mean obtained on an intelligence test.

**intelligence** *n.* the ability to derive information, learn from experience, adapt to the environment, understand, and correctly utilize thought and reason. See also IQ; MEASURES OF INTELLIGENCE. —**intelligent** *adj.*

**intelligence knowledge-based system (IKBS)** a system used in the United Kingdom for reasoning and decision making. It was developed from ARTIFICIAL INTELLIGENCE, using a KNOWLEDGE REPRESENTATION system (symbolic, quantitative, or both) to provide either a solution to some problem or an aid to decision making.

**intelligence measure** see INTELLIGENCE TEST; MEASURES OF INTELLIGENCE.

**intelligence quotient** see IQ.

**intelligence test** an individually administered test used to determine a person's level of intelligence by measuring his or her ability to solve problems, form concepts, reason, acquire detail, and perform other intellectual tasks. It comprises mental, verbal, and performance tasks of graded difficulty that have been standardized by use on a representative sample of the population. Examples of intelligence tests include the STANFORD-BINET INTELLIGENCE SCALE and the WECHSLER ADULT INTELLIGENCE SCALE. Also called **intelligence scale**. See IQ.

**intelligent design** a theoretical position, in opposition to the theory of EVOLUTION, that the universe with all its diversity is so ingeniously and complexly constructed and interrelated that it could only have been created by some intelligent force and that complex biological organisms could not have emerged through NATURAL SELECTION. In some contexts, the term has become synonymous with CREATIONISM.

**intensional meaning** the meaning of a word or phrase as defined by listing the essential or salient properties of the thing or concept referred to. For example, the intensional meaning of *sister* is "female sibling." Compare EXTENSIONAL MEANING.

**intensity** *n.* **1.** the quantitative value of a stimulus or sensation. **2.** the strength of any behavior, such as an impulse or emotion. **3.** the strength of an individual's performance in some activity or field with reference to one or more of the following attributes: arousal, commitment, effort, assertiveness, and attentional focus. Also called **performance intensity**. —**intense** *adj.*

**intensive care syndrome** a type of psychotic condition observed in some individuals in intensive care who are immobilized in an isolated, unfamiliar environment that may have the effect of sensory deprivation. Variable factors may include the mental and physical condition of the individual prior to the need for intensive care, the age of the individual, medical or surgical complications, and behavioral effects of drugs administered.

**intensive care unit (ICU)** a hospital unit in which critically ill patients receive intensive and continuous nursing, medical care, and supervision that includes the use of sophisticated monitoring and resuscitative equipment. ICUs are often organized for the care of specific groups of patients, such as neonatal ICUs or pulmonary ICUs. Also called **critical care unit (CCU)**. Compare CONTINUING CARE UNIT.

**intensive psychotherapy** broad, thorough, and prolonged psychological treatment of an individual's concerns and problems. The qualifier *intensive* indicates both the nature of the discussions, which typically involve extensive examination of the individual's life history and conflicts, and the duration of the therapy. Compare BRIEF PSYCHOTHERAPY.

**intent analysis** analysis of social interaction in which verbal content is classified according to intent (providing support, seeking approval, etc.).

**intention** *n.* **1.** a prior conscious decision to perform a behavior. In experiments, intention is often equated with the goals defined by the task instructions. **2.** more generally, any directedness in one's thoughts or behaviors,

whether or not this involves conscious decision making. —**intentional** *adj.*

**intentional accident** see PURPOSIVE ACCIDENT.

**intentional agent** an individual whose behavior is based on what he or she knows and wants and who acts deliberately to achieve goals. In infants, the ability to distinguish intentional agents from inanimate objects begins by 9 months of age.

**intentional behavior** goal-oriented behavior in which an individual uses strategies to achieve various ends or effects. According to the PIAGETIAN THEORY of cognitive development, intentional behavior emerges in human infants between 8 and 12 months of age.

**intentional forgetting** inaccessibility of a memory that is due to REPRESSION or to an unconscious wish to forget.

**intentional inexistence** in ACT PSYCHOLOGY and PHENOMENOLOGY, the principle that the object of perception or thought (the intentional object) exists within the act of perceiving or thinking. See INTENTIONALITY. [developed by Franz BRENTANO]

**intentionality** *n.* a characteristic of an individual's acts that requires the individual (a) to have goals, desires, and standards; (b) to select behaviors that are in the service of attaining the goal (e.g., means to an end); and (c) to call into conscious awareness a desired future state. Investigators differ as to whether (a) alone, (a) and (b) but not (c), or (a), (b), and (c) are required for intentionality to be attributable to an individual. The concept of intentionality, as developed by Franz BRENTANO, has been very influential in ACT PSYCHOLOGY, PHENOMENOLOGY, and related approaches in HERMENEUTICS.

**intentional learning** learning that is planned or deliberate and therefore consciously employs MNEMONICS or other strategies. Compare INCIDENTAL LEARNING.

**intentional stance** a strategy for interpreting and predicting behavior that views organisms as rational beings acting in a reasonable manner according to their beliefs and desires (i.e., their intentions). [proposed by U.S. philosopher Daniel C. Dennett (1942– )]

**intention movement** a physical behavior that precipitates another physical response, so that the first behavior may signal the second. For example, when two people are talking, one may exhibit certain postural behaviors (e.g., changing stance, shifting weight) predictive of terminating the interaction before actually ending the conversation and walking away.

**intention tremor** see ACTION TREMOR.

**interaction** *n.* **1.** a relationship between two or more systems, people, or groups that results in mutual or reciprocal influence. See also SOCIAL INTERACTION. **2.** see INTERACTION EFFECT. —**interact** *vb.*

**interactional model of anxiety** a model proposing that STATE ANXIETY is determined by the interaction of factors relating to a situation and factors relating to an individual. See also DIATHESIS-STRESS MODEL.

**interactional synchrony** see SYNCHRONY.

**interactional territory** see GROUP SPACE.

**interaction analysis** a variety of methods used to describe, categorize, and evaluate instances of person-person

interaction, person–system interaction, or team and group interaction. Interaction analysis is used in specialties such as HUMAN FACTORS ENGINEERING, human–computer interaction, cultural studies, and communication studies.

**interaction effect** in a FACTORIAL DESIGN, the joint effect of two or more independent variables on a dependent variable above and beyond the sum of their individual effects: The independent variables combine to have a different (and multiplicative) effect, such that the value of one is contingent on the value of another. This indicates that the relationship between the independent variables changes as their values change. For example, if a researcher is studying how gender (female vs. male) and dieting (Diet A vs. Diet B) influence weight loss, an interaction effect would occur if women using Diet A lost more weight than men using Diet A. Interaction effects contrast with—and may obscure—MAIN EFFECTS. See also HIGHER ORDER INTERACTION. Compare ADDITIVE EFFECT.

**interactionism** *n.* **1.** the position that mind and body are distinct, incompatible substances that nevertheless interact, so that each has a causal influence on the other. This position is particularly associated with René DESCARTES. See CARTESIAN DUALISM; MIND–BODY PROBLEM. **2.** a set of approaches, particularly in personality psychology, in which behavior is explained not in terms of personality attributes or situational influences but by references to interactions that typify the behavior of a certain type of person in a certain type of setting. —**interactionist** *adj.*

**interactionist view of intelligence** the view that intelligence always develops as an interaction between biological dispositions and environmental conditions and that it is difficult or impossible to separate the contributions of these two factors. Interactionists point out that genes always express themselves (manifest their effects in an individual) through a given set of environments and that the expression of the genes may be different as a function of the environment in which they are expressed.

**interaction process analysis (IPA)** a technique used to study the emotional, intellectual, and behavioral interactions among members of a group. It requires observers to classify every behavior displayed by each group member into one of 12 mutually exclusive categories, such as “asks for information” or “shows tension.” See also CATEGORY-SYSTEM METHOD; STRUCTURED OBSERVATION. [developed by U.S. social psychologist Robert Freed Bales (1916–2004)]

**interactive advertising** in Internet marketing, a promotional technique in which consumers are encouraged to interact with a website by entering information, such as by answering questions.

**interactive group psychotherapy** see INTERPERSONAL GROUP PSYCHOTHERAPY.

**interactive sport** a sport that requires the participants to integrate and coordinate their actions with those of other players. Football and basketball are examples of interactive sports. Compare COACTIVE SPORT.

**Interamerican Society of Psychology** Sociedad Interamericana de Psicología (SIP): a professional organization founded in 1951 to promote communication and research among psychologists in North, Central, and South America and the Caribbean.

**interattitudinal consistency** the extent to which attitudes in an ATTITUDE SYSTEM are evaluatively consistent with one another. High consistency occurs when each atti-

tude implies the other attitudes in the system. Low consistency occurs when some attitudes in the system imply the opposite of others.

**interaural difference** see BINAURAL CUE.

**interaural rivalry** the competition within the auditory system to comprehend conflicting inputs received simultaneously in both ears. Interaural rivalry has been employed in the study of temporal lobe lesions: Patients typically recall less of the information heard in the left ear if a lesion is on the right side, and vice versa. See also DICHOTIC LISTENING.

**interbehavioral psychology** a system of psychology concerned with interactions between an organism and its environment. The focus is on the interaction of stimulus functions (the use or role of a stimulus) and response functions (the purpose served by a response) and how context and experience shape those interactions. Also called **interbehaviorism**. [proposed by Jacob Robert KANTOR]

**interblobs** *pl. n.* the regions of striate cortex that exist between the CYTOCHROME OXIDASE BLOBS. Neurons in the interblobs are less sensitive to wavelength than are neurons in the blobs.

**intercept** *n.* the point at which either axis of a graph is intersected by a line plotted on the graph. For example, it is the value of  $y$  when  $x = 0$  in an equation of the form  $y = a + bx$ , or the value of  $x$  where a REGRESSION LINE crosses the  $Y$ -AXIS. See also  $X$ -INTERCEPT;  $Y$ -INTERCEPT.

**interclass correlation** the degree of bivariate relationship between two variables from different measurement classes (i.e., the variables have distinct metrics and variances). For example, one may use an interclass correlation to determine the relation of IQ points (a class of measurement representing aptitude) to grade-point averages (a class of measurement representing achievement), or the relation of length (e.g., inches) to weight (e.g., pounds). Currently, the only interclass correlation in common use is the Pearson PRODUCT-MOMENT CORRELATION COEFFICIENT. Compare INTRAClass CORRELATION.

**intercoder reliability** see INTERRATER RELIABILITY.

**intercorrelation** *n.* the CORRELATION between each variable and every other variable in a group of variables.

**intercourse** *n.* see COITUS.

**interdecile range** the difference between the ninth and first DECILES of a distribution (i.e., the number obtained by subtracting the 10th PERCENTILE score from the 90th percentile score). The interdecile range provides a measure of DISPERSION in a data set that is minimally affected by OUTLIERS (extreme values). See also INTERQUARTILE RANGE.

**interdental** **1.** *adj.* denoting a speech sound made with the tongue placed between the upper and lower front teeth (e.g., [th]). **2.** *n.* an interdental speech sound.

**interdental lisp** see LISP.

**interdependence** *n.* a state in which two or more people, situations, variables, or other entities rely on or react with one another such that one cannot change without affecting the other. OUTCOME INTERDEPENDENCE is an example. Also called **interdependency**. —**interdependent** *adj., n.*

**interdependence theory** an approach to analyzing social interactions and relationships that focuses on how each person's outcomes depend on the actions of others.

More specifically, interdependence theory identifies the most important characteristics of social situations and describes their implications for understanding how individuals make choices and take action. A central element of the theory is the proposition that people have standards against which they compare their current outcomes. When people's actual experiences are inconsistent with their standards, they may act to alter the situation. See OUTCOME INTERDEPENDENCE. [introduced in 1959 by John W. THIBAUT and Harold H. KELLEY]

**interdependent self-construal** a view of the self (SELF-CONSTRUAL) that emphasizes one's embeddedness in a network of social relationships and that downplays one's separateness and unique traits or accomplishments. Compare INDEPENDENT SELF-CONSTRUAL.

**interdisciplinary approach** a manner of dealing with psychological, medical, or other scientific questions in which individuals from different disciplines or professions collaborate to obtain a more thorough, detailed understanding of the nature of the questions and consequently develop more comprehensive answers. For example, an interdisciplinary approach to the treatment or rehabilitation of an individual who is ill, disabled, or experiencing distress or pain uses the talents and experiences of therapists from a number of appropriate medical and psychological specialties. Also called **multidisciplinary approach**.

**interest** *n.* an attitude characterized by a need or desire to give SELECTIVE ATTENTION to something that is significant to the individual, such as an activity, goal, or research area.

**interest factors** in VOCATIONAL GUIDANCE and PERSONNEL SELECTION, an individual's interests or preferences regarded as indicators of personality traits and therefore of suitability for a particular job or type of employment. Interest factors can be derived from INTEREST TESTS and other SELF-REPORT INVENTORIES or from hobbies, leisure-time activities, and previous jobs.

**interestingness** *n.* in psychological aesthetics, that quality in a work of art that arouses interest rather than pleasure. Interestingness tends to increase with the levels of complexity and uncertainty in the work.

**interest test** a SELF-REPORT INVENTORY in which the participant is required to express likes or dislikes for a range of activities and attitudes. These are then compared with the interest patterns of successful members of different occupations as a means of assessing the participant's suitability for different types of work. Important examples are the KUDER PREFERENCE RECORD and the STRONG INTEREST INVENTORY. Also called **interest inventory**; **occupational interest measure**.

**interfemoral sex** coitus in which one places the penis between the thighs of another person. Heterosexual couples may do this as an attempted form of birth control or to maintain the woman's virginity. It may also be part of male homosexual intercourse. Also called **coitus inter femora**.

**interference** *n.* **1.** the blocking of learning or of memory RETRIEVAL by the learning or remembering of other conflicting material. Interference has many sources, including prior learning (see PROACTIVE INTERFERENCE), subsequent learning (see RETROACTIVE INTERFERENCE), competition during recall (see OUTPUT INTERFERENCE), and presentation of other material (see INTERPOLATED TASK). **2.** the mutual effect on meeting of two or more light, sound,

or other waves, the overlap of which produces a new pattern of waves. The term is used most frequently with reference to waves of the same or similar frequency, whose interference may be either constructive or destructive. In the former, the waves are in phase and the wave motions are reinforced, which results in alternating areas of increased and decreased wave amplitude (e.g., as light and dark lines or louder and softer sound); in the latter, the waves are out of phase and the wave motions are decreased or cancelled. **3.** the distortion of a signal due to the presence of NOISE. **4.** see LANGUAGE TRANSFER.

**interference sensitivity** see RESISTANCE TO INTERFERENCE.

**interference theory** the hypothesis that forgetting is due to competition from other learning or other memories.

**intergenerational trauma** a phenomenon in which the descendants of a person who has experienced a terrifying event show adverse emotional and behavioral reactions to the event that are similar to those of the person himself or herself. These reactions vary by generation but often include shame, increased anxiety and guilt, a heightened sense of vulnerability and helplessness, low self-esteem, depression, suicidality, substance abuse, DISSOCIATION, HYPERVIGILANCE, INTRUSIVE THOUGHTS, difficulty with relationships and attachment to others, difficulty in regulating aggression, and extreme reactivity to stress. The exact mechanisms of the phenomenon remain unknown but are believed to involve effects on relationship skills, personal behavior, and attitudes and beliefs that affect subsequent generations. The role of parental communication about the event and the nature of family functioning appear to be particularly important in trauma transmission. Research on intergenerational trauma concentrated initially on the children, grandchildren, and great-grandchildren of survivors of the Holocaust and Japanese American internment camps, but it has now broadened to include American Indian tribes, the families of Vietnam War veterans, and others. Also called **historical trauma**; **multigenerational trauma**; **secondary traumatization**.

**intergluteal sex** coitus in which the penis is placed between the cheeks of the buttocks, without entry into the vagina or anus.

**intergroup competition** see COMPETITION.

**intergroup conflict** disagreement or confrontation between two or more groups and their members, such as between work departments, entire companies, political parties, or nations. This may involve interpersonal discord, psychological tension, or physical violence. In many social species, intergroup conflict is a major factor affecting group-level movement patterns and space use and ultimately in shaping the evolution of group living and complex sociality. See also CONFLICT RESOLUTION. Compare INTRAGROUP CONFLICT.

**intergroup-contact hypothesis** see CONTACT HYPOTHESIS.

**intergroup dynamics** the processes that influence the shifting relationships between groups, including intergroup stereotyping, competition, conflict, and INGROUP BIAS. See also GROUP DYNAMICS.

**interhemispheric fissure** see LONGITUDINAL FISSURE.

**interhemispheric interaction** any neurophysiological, electrophysiological, or neurochemical exchange occurring between the cerebral hemispheres.

**interhemispheric transfer** the transfer of memory traces or learning experiences from one cerebral hemisphere to the other. Interhemispheric transfer can be demonstrated with experiments using laboratory animals and can be observed in humans who transfer handedness from the right to the left hand, or vice versa, following an injury or loss of a hand.

**interim behavior** behavior that occurs generally mid-way in time between successive stimuli. Compare ADJUNCTIVE BEHAVIOR; COLLATERAL BEHAVIOR; MEDIATING BEHAVIOR.

**interindividual differences** the variations between individuals in one or more traits, behaviors, or characteristics (e.g., variations in intelligence). See also INDIVIDUAL DIFFERENCES.

**interitem correlation** the degree of correlation between each test item in a set, used as a measure of the INTERNAL CONSISTENCY of a test and thus of its RELIABILITY. For example, a participant's responses to each item on a 10-item test could be correlated with his or her responses to every other item on the test to determine the extent to which the items reflect the same construct.

**interitem interval** the time interval between the presentation of items in a sequence. For instance, in a memory experiment, words in a list may be presented five seconds apart. See also INTERSTIMULUS INTERVAL.

**interjudge reliability** see interrater reliability.

**interlanguage** *n.* in second-language acquisition, a state in which the learner has developed an internally consistent grammatical system with properties of both the native language and the target language. See FOSSILIZATION; DIALECT; LANGUAGE TRANSFER.

**interlocking pathologies** nonconscious and dysfunctional ways of acting that are present in a couple or other intimate dyad or in a family or other close social unit.

**interlocking reinforcement schedule** a schedule of INTERMITTENT REINFORCEMENT in which the requirements of one schedule change depending on progress in another schedule. For example, in an interlocking fixed-interval, fixed-ratio schedule, reinforcement is given after a fixed number of responses and a fixed time, but this could be changed so that the number of responses required for reinforcement decreases as the interval between responses and reinforcement increases.

**intermale aggression** among nonhuman animals, aggression occurring between males, usually to develop, maintain, or challenge their dominance relationship.

**intermarriage** *n.* **1.** marriage between two individuals belonging to different racial, ethnic, or religious groups. See EXOGAMY; MISCEGENATION; OUTBREEDING. **2.** marriage between two closely related individuals, as in a consanguineous marriage. See INBREEDING. —**intermarry** *vb.*

**intermediary variable** see mediator.

**intermediate care facility (ICF)** a facility providing an appropriate level of nursing and other medical care to individuals who do not require the degree of care and treatment provided by a hospital or SKILLED NURSING FACILITY but need more than room and board.

**intermediate cell** see TYPE III CELL.

**intermediate need** in MASLOW'S MOTIVATIONAL HIER-

ARCHY, a DEFICIENCY NEED that is psychologically based, such as the need for self-esteem, love, or security.

**intermediate nerve** see GREATER SUPERFICIAL PETROSAL NERVE.

**intermediate precentral area** see PREMOTOR AREA.

**intermetamorphosis syndrome** a MISIDENTIFICATION SYNDROME characterized by delusions that particular people have been transformed both physically and psychologically into other people.

**intermission** *n.* an asymptomatic period during the course of a chronic disorder. For example, an individual with BIPOLAR DISORDER may experience an intermission between a manic episode and a major depressive episode. See also REMISSION.

**intermittent explosive disorder** an impulse-control disorder consisting of multiple episodes in which the individual fails to resist aggressive impulses and commits assaultive acts or destroys property. These aggressive acts are significantly out of proportion to any precipitating factors, are not caused by any other mental disorder or a general medical condition, and are not substance induced. DSM-5 also includes verbal aggression (e.g., frequent temper tantrums, arguments) and nondestructive physical aggression among the criteria for this disorder. Compare ISOLATED EXPLOSIVE DISORDER.

**intermittent insomnia** periods of sleeplessness occurring several times a night.

**intermittent processing** see SERIAL PROCESSING.

**intermittent reinforcement** in operant or instrumental conditioning, any pattern of REINFORCEMENT in which only some responses are reinforced. Also called **partial reinforcement**; **partial schedule of reinforcement**.

**intermodal matching** see CROSS-MODAL MATCHING.

**intermodal perception** the coordination or integration of information from two or more senses, such as touch and vision.

**internal aim** see OBJECT OF INSTINCT.

**internal attribution** see DISPOSITIONAL ATTRIBUTION.

**internal boundary** in psychoanalytic theory, the boundary between EGO and ID. Compare EXTERNAL BOUNDARY.

**internal capsule** a large band of nerve fibers in the corpus striatum (see BASAL GANGLIA) that extends between the CAUDATE NUCLEUS on its medial side and the GLOBUS PALLIDUS and PUTAMEN on its lateral side. It contains afferent and efferent fibers from all parts of the cerebral cortex as they converge near the brainstem. See also EXTERNAL CAPSULE; EXTREME CAPSULE.

**internal carotid artery** one of the main arteries supplying blood to the neck and head. It begins as a bifurcation of the common CAROTID ARTERY at about the level of the thyroid cartilage in the neck, on either side of the body, and enters the skull at about the level of the eye. Inside the skull, the internal carotid artery branches into the ANTERIOR CEREBRAL ARTERY and the MIDDLE CEREBRAL ARTERY.

**internal clock** see BIOLOGICAL CLOCK.

**internal conflict** see INTRAPSYCHIC CONFLICT.

**internal consistency** the degree of interrelationship

or homogeneity among the items on a test, such that they are consistent with one another and measuring the same thing. Internal consistency is an index of the **RELIABILITY** of a test. Also called **internal consistency reliability**; **internal reliability**. See also **INTERITEM CORRELATION**.

**internal control** see **LOCUS OF CONTROL**.

**internal culture conflict** see **CULTURE CONFLICT**.

**internal environment** the conditions within the body, including temperature, blood pressure, blood-sugar level, and acid–base balance, as opposed to those in the external environment. The internal environment is maintained in a constant state, as required for the normal functioning of the body's tissues and organs, by mechanisms of **HOMEOSTASIS**. [proposed by Claude **BERNARD**]

**internal evaluator** an individual who conducts an evaluation of a service delivery program and is also a regular full-time staff member of the program being evaluated. Compare **EXTERNAL EVALUATOR**.

**internal fertilization** see **FERTILIZATION**.

**internal frustration** in classical psychoanalytic theory, denial of gratification of instinctual impulses due to internal factors (e.g., the **SUPEREGO**), as opposed to external factors.

**internal granular layer** see **CORTICAL LAYERS**.

**internal inequity** the situation in which employers compensate certain employees at levels that are unfair relative to other employees in the same organization. Compare **EXTERNAL INEQUITY**. See **EQUITY THEORY**.

**internalization** *n.* **1.** the nonconscious mental process by which the characteristics, beliefs, feelings, or attitudes of other individuals or groups are assimilated into the self and adopted as one's own. **2.** in psychoanalytic theory, the process of incorporating an **OBJECT** relationship inside the psyche, which reproduces the external relationship as an intrapsychic phenomenon. For example, through internalization the relationship between father and child is reproduced in the relationship between **SUPEREGO** and **EGO** or, in relational theory, between self and other. Internalization is often mistakenly used as a synonym for **INTROJECTION**. —**internalize** *vb.*

**internalized speech** silent speech in which one argues with oneself over a course of action, rehearses what one is going to do, or reassures oneself when feeling threatened. See also **INNER LANGUAGE**; **SELF-TALK**.

**internalizing behavior** see **EXTERNALIZING–INTERNALIZING**.

**internal locus of control** see **LOCUS OF CONTROL**.

**internal object** an image or representation of a person (particularly someone significant to the individual, such as a parent) that is experienced as an internalized “presence” within the mind. In her development of **OBJECT RELATIONS THEORY**, Melanie **KLEIN** saw the psyche as being made up of internal objects whose relations to each other and to the individual determine his or her personality and symptoms. See also **PART-OBJECT**.

**internal pyramidal layer** see **CORTICAL LAYERS**.

**internal respiration** see **RESPIRATION**.

**internal rhythm** see **BIOLOGICAL RHYTHM**.

**internal saboteur** see **ANTILIBIDINAL EGO**.

**internal-state ratings** one of several methods of evaluating a person's reactions to a work of art. Internal-state ratings are based on the person's mood while exposed to a pattern. Other types of rating scales include descriptive ratings and **EVALUATIVE RATINGS**. See **STYLISTIC RATINGS**.

**internal validity** the degree to which a study or experiment is free from flaws in its internal structure and its results can therefore be taken to represent the true nature of the phenomenon. In other words, internal validity pertains to the soundness of results obtained within the controlled conditions of a particular study, specifically with respect to whether one can draw reasonable conclusions about cause-and-effect relationships among variables. Compare **EXTERNAL VALIDITY**.

**internal working model of attachment** a cognitive construction or set of assumptions about the workings of relationships, such as expectations of support or affection. The earliest relationships may form the template for this internal model, which may be positive or negative. See also **ATTACHMENT THEORY**. [originally proposed by John **BOWLBY**]

**International Association of Applied Psychology (IAAP)** the oldest international association of professional psychologists, founded in 1920 to promote the science and practice of applied psychology and to facilitate interaction and communication among those who work in applied psychology around the world.

**International Classification of Diseases (ICD)** the global standard for diagnostic classification of all health conditions as compiled by the World Health Organization (**WHO**) for clinical, health management, and epidemiological purposes. At the national level, WHO's member countries use the **ICD** in morbidity and mortality statistics, whereas individual practitioners use its codes for reimbursement for services; in the United States, under the Health Insurance Portability and Accountability Act (**HIPAA**), all health care providers are to use the **ICD** diagnosis code sets for billing. Based on a formal classification system originally developed in 1893, the **ICD** has since undergone numerous revisions. The current version, **ICD–10**, published in 1992 as the *International Statistical Classification of Diseases and Related Health Problems*, uses a four-character alphanumeric coding system to classify diseases and disorders and their subtypes, including those relating to mental and behavioral disorders. Another revision, **ICD–11**, is expected in 2017, with the goal of improving usability by ensuring that its diagnostic categories align with actual clinical practice. It will be available both in printed form and as an electronic database that will allow interactive data sharing. Eventually, data will be integrated into health informatics systems, accessible worldwide and aggregated at the clinic, health system, and country levels for use in a variety of ways, such as to help determine treatments, outcomes, reimbursement, and even health policy. See also **DSM–IV–TR**; **DSM–5**.

**International Council of Psychologists** a professional organization founded in 1941 to advance psychology and its applications by facilitating communication and strengthening bonds between psychologists worldwide. In 1981, the council was recognized as a nongovernmental organization in consultative status with the United Nations Economic and Social Council.

**International Military Testing Association** an organization that, since its founding in 1959, has held

conferences on the job proficiency evaluation of enlisted military personnel and increasingly on research relevant to behavioral science as applied to the military (e.g., occupational analysis, leadership, organizational behavior, human factors, manpower analysis). Originally called the **Military Testing Association**, the organization changed its name in 1993 to reflect the increasing involvement of countries around the world. Participants include civilian as well as uniformed researchers and practitioners.

**International Phonetic Alphabet (IPA)** a system of written symbols devised by the International Phonetic Association to enable the phonetic transcription of any spoken language. It is based on the Roman alphabet, with various additional symbols.

**International Pilot Study of Schizophrenia (IPSS)** a 1973 diagnostic study sponsored by the World Health Organization, involving psychiatrists in nine countries and a total of 1,119 patients assigned to a schizophrenic or nonschizophrenic category. The most discriminating of 13 symptoms were lack of insight, auditory hallucinations, verbal hallucinations, ideas of reference, and delusions of reference. The project used the PRESENT STATE EXAMINATION. See also FIRST-RANK SYMPTOMS.

**International Positive Psychology Association (IPPA)** a professional organization, founded in 2007, whose mission is to promote POSITIVE PSYCHOLOGY as a science, encourage and facilitate its responsible and effective application across disciplines and professions, and disseminate the findings of its research. The division of IPPA devoted to students is the **Students of the International Positive Psychology Association (SIPPA)**.

**International Society for Sport Psychology (ISSP)** formed in 1965, an international and multidisciplinary organization of researchers, psychologists, educators, coaches, administrators, and national organizations devoted to the promotion of research, practice, and development in SPORT AND EXERCISE PSYCHOLOGY.

**International Union of Psychological Science (IUPsyS)** an affiliation of professional psychological organizations, founded in 1951 to develop the exchange of ideas and scientific information between psychologists of different countries and, in particular, to organize international congresses and other meetings on subjects of general or special interest in psychology. The union evolved from the International Congress of Psychology, first held in Paris in 1889.

**Internet addiction** a behavioral pattern characterized by excessive or obsessive online and offline computer use that leads to distress and impairment. The condition, though controversial, has attracted increasing attention in the popular media and among health care professionals. Expanding research has identified various subtypes, including those involving excessive gaming, sexual preoccupations, and e-mail and text messaging.

**Internet meme** see MEME.

**interneuron** *n.* any neuron that is neither sensory nor motor but connects other neurons within the central nervous system. Also called **connector neuron**.

**interobserver reliability** see INTERRATER RELIABILITY.

**interoception** *n.* sensitivity to stimuli inside the body, resulting from the response of specialized sensory cells

called **interoceptors** to occurrences within the body (e.g., from the viscera). Compare EXTEROCEPTION.

**interoceptive conditioning** CLASSICAL CONDITIONING that requires direct access to internal organs, through fistulas, balloons inserted into the digestive tract, or implanted electrical devices, to present the conditioned stimulus.

**interoceptive stimulus** any stimulus arising from inside an organism. Examples include headaches, stomachaches, and hunger pangs. Compare EXTEROCEPTIVE STIMULUS; PROPRIOCEPTIVE STIMULUS.

**interoceptive system** the totality of sensory receptors and nerves that gather information from within the body.

**interoceptor** *n.* see INTEROCEPTION. —**interoceptive** *adj.*

**interocular distance** the distance between the pupils of the left and right eyes when the eyes are in normal FIXATION.

**interocular transfer** the ability of an aftereffect to be produced by stimulation through only one eye but to be experienced by looking only through the other eye. The presence of interocular transfer implies that the afterimage is mediated by a postretinal structure, such as the cerebral cortex, since the two eyes have no direct communication prior to the activation of BINOCULAR CELLS in the striate cortex.

**interpersonal** *adj.* pertaining to actions, events, and feelings between two or more individuals. For example, **interpersonal skill** is an aptitude enabling a person to carry on effective interactions and relationships with others, such as the ability to communicate thought and feeling or to assume appropriate social responsibilities.

**interpersonal accommodation** the “give-and-take” process involved in developing satisfactory relationships, in which one must put aside personal preferences to maintain good relations with others.

**interpersonal attraction** see ATTRACTION.

**interpersonal competition** see COMPETITION.

**interpersonal concordance orientation** see CONVENTIONAL LEVEL.

**interpersonal conflict** disagreement or discord between people with respect to goals, values, or attitudes.

**interpersonal distance** the physical distance that individuals choose to maintain between themselves and others while interacting. Studies show that most individuals maintain a smaller interpersonal distance for friends than for strangers. The comfortable or optimal distance also varies with the type of interaction and setting as well as with differences in nationality, culture, personality, and other characteristics. See BODY BUFFER ZONE; BUBBLE CONCEPT OF PERSONAL SPACE. See also PROXEMICS.

**interpersonal gap** in communication, the difference between what a speaker intends to convey and the impact of the message on a listener. Many factors contribute to this gap, some related to the speaker's encoding of the message and others to the listener's decoding of it. Research has shown that speakers often assume that their intent is more transparent to listeners than it actually is, a tendency called the **signal amplification bias**, which may lead speakers to perceive that their listeners are less responsive than they would like them to be.

**interpersonal group psychotherapy** a group approach to the treatment of psychological, behavioral, and emotional problems that emphasizes the curative influence of exploring the interactions of group members, including the analysis of group events, experiences, and relationships. In this approach, the group serves as a social microcosm that provides corrective emotional experiences in the HERE AND NOW via a therapist who acts as both a participant and an observer. The goal of the approach is to enable group members to gain valuable insights while learning to relate to each other and then to apply those insights in their everyday lives outside of the group setting. Also called **interactive group psychotherapy**. See also INTERPERSONAL THEORY.

**interpersonal influence** direct SOCIAL PRESSURE exerted on a person or group by another person or group in the form of demands or threats on the one hand or promises of rewards or SOCIAL APPROVAL on the other. Compare INFORMATIONAL INFLUENCE; NORMATIVE INFLUENCE.

**interpersonal intelligence** in the MULTIPLE-INTELLIGENCES THEORY, the intelligence involved in understanding and relating to other people. Interpersonal intelligence is alleged to be relatively independent of other intelligences posited by the theory.

**interpersonal learning group** any group formed to help individuals extend their self-understanding and improve their relationships with others, such as an experiential group, T-GROUP, or GROWTH GROUP. See also STRUCTURED LEARNING GROUP.

**interpersonal perception** see SOCIAL PERCEPTION.

**interpersonal process recall (IPR)** a method used for understanding the processes of psychotherapy and for the training of counselors and therapists. It involves videotaping or audiotaping counseling or psychotherapy sessions, which are later reexperienced and analyzed by the counselor or therapist in the presence of a supervisor, who questions and discusses the thoughts and feelings of the counselor or therapist and client. [developed by U.S. counseling psychologist Norman I. Kagan (1931–1994)]

**interpersonal psychotherapy (IPT)** a time-limited form of psychotherapy, originally based on the INTERPERSONAL THEORY of Harry Stack SULLIVAN, positing that relations with others constitute the primary force motivating human behavior. A central feature of IPT is the clarification of the client's interpersonal interactions with significant others, including the therapist. The therapist helps the client explore current and past experiences in detail, relating not only to interpersonal reaction but also to general environmental influences on personal adaptive and maladaptive thinking and behavior.

**interpersonal reconstructive psychotherapy** an INTEGRATIVE PSYCHOTHERAPY and method of symptom analysis that applies psychodynamic and cognitive behavior techniques to the treatment of individuals with personality disorders, specifically to their presenting problems and symptoms that relate to long-term interpersonal difficulties. Interventions are active and focused on attachment-based factors that maintain current dysfunction, with the goal of helping such individuals understand the source of and then modify their chronically self-destructive thoughts and maladaptive behavior. [developed by U.S. clinical psychologist Lorna Smith Benjamin (1934– )]

**interpersonal relations** 1. the connections and inter-

actions, especially ones that are socially and emotionally significant, between two or more people. 2. the pattern or patterns observable in an individual's dealings with other people.

**interpersonal theory** the theory of personality developed by Harry Stack SULLIVAN, which is based on the belief that people's interactions with other people, especially SIGNIFICANT OTHERS, determine their sense of security, sense of self, and the dynamisms that motivate their behavior. For Sullivan, personality is the product of a long series of stages in which the individual gradually develops "good feeling" toward others and a sense of a GOOD ME toward himself or herself. The individual also learns how to ward off anxiety and correct distorted perceptions of other people, learns to verify his or her ideas through CONSENSUAL VALIDATION, and above all seeks to achieve effective interpersonal relationships on a mature level.

**interpersonal zone** see DISTANCE ZONE.

**interphase** *n.* the interval between cell divisions, when the nucleus has finished dividing, particularly in rapidly dividing tissues or during embryonic growth.

**interpolated task** an activity that is presented between two experimental tasks to fill time or to disguise the connection between the two critical tasks. For instance, an interpolated arithmetic task might be given between the study phase and test phase of a memory experiment. See also INTERFERENCE.

**interpolation** *n.* a strategy for determining an unknown value given knowledge of surrounding data points. For example, if the average score on a test is 70 for a group of beginner students and the average score on the same test is 90 for an advanced group of students, one might use interpolation to estimate an average score of 80 on the test for an intermediate group of students.

**interposition** *n.* a monocular DEPTH CUE occurring when two objects are in the same line of vision and the closer object, which is fully in view, partly conceals the farther object. Also called **relative position**.

**interpret** *vb.* 1. to translate orally from one language into another. A distinction is sometimes made between interpreting, in which it is sufficient to convey the sense of the original, and TRANSLATION, in which some attempt to replicate form and style will also usually be made. 2. in psychotherapy, to provide an interpretation. —**interpreter** *n.*

**interpretation** *n.* 1. in psychotherapy, explanation by the therapist in terms that are meaningful to the client of the client's issues, behaviors, or feelings. Interpretation typically is made along the lines of the conceptual framework or dynamic model of the particular therapy. In psychoanalysis, for example, the analyst uses the constructs of psychoanalytic theory to interpret the patient's early experiences, dreams, character defenses, and resistance. Although interpretation exists to some extent in almost any form of therapy, it is a critical procedural step in psychoanalysis and in other forms of PSYCHODYNAMIC PSYCHOTHERAPY. 2. an oral translation (see INTERPRET).

**interpretive phenomenological analysis (IPA)** a QUALITATIVE approach in which a researcher explores how a participant understands his or her personal and social worlds and gives meaning to particular experiences, events, and states. For example, the strategy might be used to understand how a person comes to terms with the death of a spouse. IPA uses STRUCTURED INTERVIEWS to gather ver-



bal and nonverbal information, which is then analyzed to uncover and describe underlying themes.

**interpretive response** a reply by a therapist intended to summarize or illuminate the essential meaning of or motive underlying a statement made by a client during therapy. See also INTERPRETATION.

**interpretive therapy** any form of psychotherapy in which the therapist elicits the client's conflicts, repressions, dreams, and resistances, which are then interpreted or explained to the client in the light of his or her experiences. See also INTERPRETATION.

**interpretivism** *n.* in EPISTEMOLOGY, the assertion that knowledge is deeply tied to the act of interpretation; there are multiple apprehendable and equally valid realities as opposed to a single objective reality. Interpretivism thus represents a form of RELATIVISM. See also CONSTRUCTIVISM.

**interquartile range (IQR)** an index of the DISPERSION within a data set: the difference between the 75th and 25th PERCENTILE scores (also known as the upper and lower HINGES) within a distribution. Also called **H spread**; **mid-spread**.

**interrater reliability** the extent to which independent evaluators produce similar ratings in judging the same abilities or characteristics in the same target person or object. It often is expressed as a CORRELATION COEFFICIENT. If consistency is high, a researcher can be confident that similarly trained individuals would likely produce similar scores on targets of the same kind. If consistency is low, there is little confidence that the obtained scores could be reproduced with a different set of raters. Also called **intercoder reliability**; **interjudge reliability**; **interobserver reliability**; **interscorer reliability**.

**interresponse time (IRT)** the time between successive responses, especially between successive responses of the same type.

**interrogative** *n.* in linguistics, the form of a sentence used to pose a question rather than to make a statement, issue a command, and so on, or the MOOD of the verb used in such constructions. In English there are two main types of interrogative: yes/no questions (e.g., *Are you going?*) and *wh-* questions using *what*, *when*, *where*, *who*, and *how* (e.g., *Where are you going?*). Both types require the use of an AUXILIARY VERB (usually *be*, *have*, or *do*). The structural relationships between the DECLARATIVE and interrogative forms of a sentence are of major interest in GENERATIVE GRAMMAR and PSYCHOLINGUISTICS (see AUXILIARY INVERSION). Compare IMPERATIVE; INDICATIVE; SUBJUNCTIVE.

**interrogative suggestibility** the degree to which an individual is susceptible to suggestive questioning. The level of suggestibility may be assessed in two ways: (a) yield, or the degree to which an individual will respond affirmatively to leading questions, and (b) shift, or the tendency to alter previous responses when receiving negative feedback.

**interrogatories** *pl. n.* formal written questions prepared for an official pretrial questioning of an individual who possesses information relevant to a case or used in the judicial examination of an individual or party.

**interrole conflict** the form of ROLE CONFLICT that occurs when individuals have multiple roles and the expectations and behaviors associated with one role are not consistent with the expectations and behaviors associated with another. In organizational settings, for example, a

common interrole conflict is that between work and family, whereby the role pressures from each domain may be mutually incompatible. Compare INTRAROLE CONFLICT.

**interrupted time-series design** a QUASI-EXPERIMENTAL DESIGN in which the effects of an intervention are evaluated by comparing outcome measures obtained at several time intervals before and several time intervals after the intervention was introduced. Unlike traditional TIME-SERIES DESIGNS, which make use of a continuous predictor variable, an interrupted time-series design uses a categorical predictor—the absence or presence of an intervention.

**interscorer reliability** see INTERRATER RELIABILITY.

**intersegmental arc reflex** a REFLEX ARC formed by fibers of sensory neurons or interneurons that travel from one spinal segment to another to communicate with motor neurons.

**intersegmental reflex** see SPINAL REFLEX.

**intersegmental tract** see GROUND BUNDLE.

**intersensory perception** the coordination of information presented through separate modalities into an integrated experience. Information from one sensory source is transmitted to the ASSOCIATION CORTEX, where it can be integrated with information from another sensory source. Intersensory perception is required in tasks that coordinate two or more sensorimotor activities, such as playing a musical instrument according to the pattern of notes on a page of sheet music. Also called **cross-modal perception**. See PERCEPTUAL SYNTHESIS; SENSORY INTERACTION.

**intersex** *n.* **1.** a modern and evolving term for HERMAPHRODITISM and PSEUDOHERMAPHRODITISM, the condition of possessing the sexual characteristics of both sexes. Sometimes called **intersexualism**; **intersexuality**. **2.** an individual who exhibits sexual characteristics of both sexes. However, using phrases such as “an intersex individual” or “a person with intersex conditions” is considered preferable. —**intersex** *adj.*

**interspecies interaction** all forms of interaction between species. Long-term interactions include PARASITISM, in which one species lives on or in another at a cost to the host; MUTUALISM, in which both species benefit from the interaction; and COMMENSALISM, in which the species coexist with neither cost nor benefit. Short-term interspecies interactions include predator–prey relationships and the mixed FLOCKING of birds to feed and give ALARM CALLS together.

**interstimulus interval (ISI)** the time between stimulus presentations, usually timed from the end of one stimulus presentation to the beginning of the next. See also INTERITEM INTERVAL.

**interstitial cell** any of the cells that fill the spaces between other tissues and structures. The interstitial cells of the TESTIS surround the seminiferous tubules and secrete testosterone when stimulated by LUTEINIZING HORMONE.

**interstitial cell-stimulating hormone (ICSH)** see LUTEINIZING HORMONE.

**interstripes** *pl. n.* regions of PRESTRIATE CORTEX that have low levels of cytochrome oxidase activity. They are connected to the INTERBLOBS in the striate cortex and have similar response properties.

**intersubjectivity** *n.* the sharing of subjective experience between two or more people. Intersubjectivity is seen as essential to language and the production of social

meaning. The term is often applied to the relationship between a therapist and a client. —**intersubjective** *adj.*

**interthalamic adhesion** a mass of GRAY MATTER that extends in most individuals across the midline of the THIRD VENTRICLE of the brain from the medial surfaces of the two halves of the thalamus. Although sometimes called the middle commissure, the interthalamic adhesion has no particular commissural (i.e., connecting) function. Also called **massa intermedia**.

**interval** *n.* a range of scores or values, such as a CLASS INTERVAL or CONFIDENCE INTERVAL.

**interval data** numerical values that indicate magnitude but lack a “natural” zero point. Interval data represent exact quantities of the variables under consideration, and when arranged consecutively they have equal differences among adjacent values (regardless of the specific values selected) that correspond to genuine differences between the physical quantities being measured. Temperature is an example of interval data: the difference between 50 °F and 49 °F is the same as the difference between 40 °F and 39 °F, but a temperature of 0 °F does not indicate that there is no temperature. Compare RATIO DATA. See also INTERVAL SCALE.

**interval estimate** an estimated range of likely values for a given population PARAMETER. For example, a researcher might use data from a sample to determine that the average score on a particular variable in the larger population falls between 20 and 25. Compare POINT ESTIMATE.

**interval of uncertainty** the interval between the upper threshold (a just noticeable stimulus) and the lower threshold (a just imperceptible stimulus) when finding a DIFFERENCE THRESHOLD.

**interval reinforcement** the REINFORCEMENT of the first response to a stimulus after a predetermined interval has elapsed. Reinforcement may be given at uniform or variable intervals; the number of responses during the interval is irrelevant. Also called **interval-reinforcement schedule**. See also FIXED-INTERVAL SCHEDULE; RANDOM-INTERVAL SCHEDULE; VARIABLE-INTERVAL SCHEDULE. Compare RATIO REINFORCEMENT.

**interval sampling** a form of RANDOM SAMPLING in which participants at uniformly separated points are selected for study and the starting point for selection is arbitrary. An example is choosing every 10th name from a list of candidates.

**interval scale** a scale marked in equal intervals so that the difference between any two consecutive values on the scale is equivalent regardless of the two values selected. Interval scales lack a true, meaningful zero point, which is what distinguishes them from RATIO SCALES. For example, Fahrenheit temperature uses an interval scale: The difference between 50 °F and 49 °F is the same as the difference between 40 °F and 39 °F, but a temperature of 0 °F does not indicate that there is no temperature. See also INTERVAL DATA.

**interval variable** a variable that is measured using an INTERVAL SCALE. Because values on such a scale are equally spaced, the differences between values of an interval variable are meaningful. Compare ORDINAL VARIABLE.

**intervening variable** see MEDIATOR.

**intervention** *n.* **1.** generally, any action intended to interfere with and stop or modify a process, as in treatment

undertaken to halt, manage, or alter the course of the pathological process of a disease or disorder. **2.** action on the part of a psychotherapist to deal with the issues and problems of a client. The selection of the intervention is guided by the nature of the problem, the orientation of the therapist, the setting, and the willingness and ability of the client to proceed with the treatment. Also called **psychological intervention**. **3.** a technique in addictions counseling in which significant individuals in a client's life meet with him or her, in the presence of a trained counselor, to express their observations and feelings about the client's addiction and related problems. The session, typically a surprise to the client, may last several hours, after which the client has a choice of seeking a recommended treatment immediately (e.g., as an inpatient) or ignoring the intervention. If the client chooses not to seek treatment, participants state the interpersonal consequences; for example, a spouse may request that the client move out, or the client's employment may be terminated. **4.** a similar confrontation between an individual and family and friends but outside of the formal structure of counseling or therapy, usually over similar issues and with the goal of urging the confronted individual to seek help with an attitudinal or behavioral problem. Also called **family intervention**. **5.** in research design, an EXPERIMENTAL MANIPULATION. —**intervene** *vb.*

**interventionist** *n.* a physician, behavioral scientist, therapist, or other professional who modifies the conditions or symptoms of a patient.

**intervention program for children** any of a number of types of program intended to provide intellectual, emotional, nutritional, or medical benefits to children believed to be at risk for inadequate development. Target children are usually preschoolers and are often from homes judged to be economically or culturally disadvantaged.

**intervention research** strategies and processes designed to measure the change in a situation or individual after a systematic modification (diet, therapeutic technique, etc.) has been imposed or to measure the effects of one type of intervention program as compared to those of another program. Experimentation is the most common type of intervention research, but CLINICAL TRIALS and qualitative studies may also be used. Also called **intervention study**.

**interventricular foramen** an opening that connects the THIRD VENTRICLE of the brain with either LATERAL VENTRICLE. It permits the flow of cerebrospinal fluid through the ventricles. Also called **foramen of Monro**.

**interview** *n.* a directed conversation in which a researcher, therapist, clinician, employer, or the like (the **interviewer**) intends to elicit specific information from an individual (the **interviewee**) for purposes of research, diagnosis, treatment, or employment. Conducted face to face, by telephone, or online, interviews may be either standardized, including set questions, or open ended, varying with material introduced in responses by the interviewee. Their RELIABILITY is of particular concern, and interviewers must be careful to minimize or eliminate personal judgment and biases in evaluating responses. See STRUCTURED INTERVIEW; UNSTRUCTURED INTERVIEW. See also CLINICAL INTERVIEW; EMPLOYMENT INTERVIEW.

**interviewer effect** the influence of the characteristics of an interviewer upon the responses provided by an interviewee. The interviewer's age, gender, and level of experi-

ence may affect the manner in which the interviewee responds, as may his or her general demeanor and nonverbal cues. For example, a person might discuss sensitive topics, such as sexual or drinking behavior, more openly and truthfully with an interviewer who is of the same gender. The term **interviewer bias** refers more specifically to an interviewer's expectations, beliefs, and prejudices as they influence the interview process and the interpretation of the data it provides.

**interviewer stereotype** in PERSONNEL PSYCHOLOGY, an interviewer's concept of the "ideal" job candidate, which becomes the standard against which actual job applicants are compared. Such a stereotype may obscure the genuine merits of applicants who deviate from it in some way. See also PROFILE MATCHING SYSTEM.

**interviewer training** instructional methods employed in training individuals to be effective interviewers. These may include group discussions, role play, and the use of recordings of real or simulated interviews, in addition to instruction in the basic principles of interviewing.

**interview group psychotherapy** a form of ANALYTIC GROUP PSYCHOTHERAPY for adolescents and adults that focuses on fixations and difficulties of the LIBIDO and relies primarily upon catharsis, insight, and reality testing to effect personality change. A balanced therapeutic group is selected on the basis of common problems and personal characteristics, and participants are encouraged to reveal their attitudes, symptoms, and feelings. [developed by Russian-born U.S. psychotherapist Samuel Richard Slavson (1890–1981)]

**interview schedule** a script containing the questions an interviewer will ask.

**intestinal lipodystrophy** see LIPODYSTROPHY.

**intimacy** *n.* an interpersonal state of extreme emotional closeness such that each party's PERSONAL SPACE can be entered by any of the other parties without causing discomfort to that person. Intimacy characterizes close, familiar, and usually affectionate or loving personal relationships and requires the parties to have a detailed knowledge or deep understanding of each other. —**intimate** *adj.*

**intimacy problem** difficulty in forming close relationships and becoming intimate with others, whether physically or psychologically. The problem might involve difficulties with sexual contact, self-disclosure, trust, or commitment to a lasting relationship. See also FEAR OF COMMITMENT.

**intimacy versus isolation** the sixth of ERIKSON'S EIGHT STAGES OF PSYCHOSOCIAL DEVELOPMENT, which extends from late adolescence through courtship and early family life to early middle age. During this period, individuals must learn to share and care without losing themselves; if they fail, they will feel alone and isolated. The development of a cohesive identity in the previous stage (see IDENTITY VERSUS IDENTITY CONFUSION) provides the opportunity to achieve true intimacy, but the development of IDENTITY DIFFUSION makes it harder for individuals to achieve a positive outcome at this stage.

**intimate partner violence** physical, psychological, or sexual abuse of one person by another in a close relationship. The couple may be heterosexual or same sex, and they may be (or have been) dating, married, or living together. Apart from violence and threats of abuse, control is a hallmark of the abusive intimate partner relationship,

with the aggressor controlling the partner's access to family and friends, taking control of shared finances, and constantly monitoring the partner's activities. If rejected, the perpetrator may also stalk the partner. Victims of intimate partner violence are at greater risk for developing depression, substance abuse, and other disorders. See also BATTERED WOMEN; DOMESTIC VIOLENCE.

**intimate zone** the small DISTANCE ZONE adopted by those in very close relationships, such as that of lovers or of mother and infant. Compare PERSONAL DISTANCE ZONE; PUBLIC DISTANCE ZONE; SOCIAL ZONE. See also PROXEMICS.

**intonation** *n.* see TONE.

**intoxicant** *n.* a substance capable of producing transient alterations in mental function. The nature of the intoxication depends on the psychoactive properties of the intoxicant. In general, mild intoxication is marked by minor perceptual changes or a sense of euphoria or well-being; more pronounced intoxication involves such changes as behavioral disinhibition, perceptual distortions, hallucinations, or delirium; and severe intoxication is marked by loss of motor control and cognitive and autonomic function, possibly progressing to coma or death.

**intoxication** *n.* see SUBSTANCE INTOXICATION.

**intoxication defense** a defense that a crime was committed by a person who was intoxicated, which has been used to challenge a charge of CRIMINAL RESPONSIBILITY. If the intoxicant was taken involuntarily, it can negate criminal responsibility altogether. If the intoxicant was taken voluntarily, it may serve as a MITIGATING FACTOR in reducing the penalty imposed, or it may be used to argue against PREMEDITATION in a first-degree murder charge. See DIMINISHED CAPACITY.

**intra-attitudinal consistency** the extent to which evaluative responses underlying a single attitude are consistent with one another. Uniformly positive responses or uniformly negative responses constitute high consistency. The existence of both positive and negative responses reflects low consistency. See also AMBIVALENCE OF AN ATTITUDE.

**intracarotid amobarbital procedure** see WADA TEST.

**intracarotid sodium Amytal test (ISA)** see WADA TEST.

**intracellular fluid** the fluid within the plasma membrane of an organism's cells. Also called **cellular fluid**.

**intracellular thirst** see OSMOMETRIC THIRST.

**intracerebral hemorrhage** see CEREBRAL HEMORRHAGE.

**intraclass correlation** the degree of homogeneity among unordered members (people, items, etc.) of a group. For example, it may reflect the level of agreement among different judges rating a specific attribute. It is indexed by the **intraclass correlation coefficient (ICC)**, which ranges from 0 to 1 in value. A larger ICC indicates more homogeneity and thus that a correspondingly smaller proportion of the total variance in a dependent variable is attributable to INDIVIDUAL DIFFERENCES within the group. Compare INTERCLASS CORRELATION.

**intracconscious personality** a phenomenon of DISSOCIATIVE IDENTITY DISORDER in which one personality functioning on an unconscious level is aware of the thoughts

and experiences of another personality functioning on a conscious level.

**intracranial** *adj.* within the skull or CRANIUM.

**intracranial hemorrhage** bleeding within the skull. Hemorrhages of this type include CEREBRAL HEMORRHAGES and SUBARACHNOID HEMORRHAGES.

**intracranial pressure (ICP)** the pressure within the skull. Excessive intracranial pressure can cause brain damage and impede blood flow within the brain, with a range of effects that may include memory loss, balance problems, dementia, coma, and death. Causes of raised ICP include hydrocephalus, hemorrhage, hematomas, brain tumors, and head injuries.

**intracranial stimulation (ICS)** stimulation of a brain region by direct application of an electric current through implanted electrodes. When this stimulation is controlled by the individual being stimulated, it is called **intracranial self-stimulation**; it also may be called **brain self-stimulation** or **electrical self-stimulation of the brain (ESSB)**. In nonhuman animal experiments, this is achieved by the animal performing an OPERANT RESPONSE, such as lever pressing. When the electrodes are placed in certain areas of the brain, animals will press the lever quite frequently, indicating that stimulation of these brain areas is rewarding. [originated in 1954 by U.S. psychologist James OLDS and Canadian psychologist Peter M. Milner]

**intradimensional discrimination** distinguishing between stimuli that are identical except for one aspect, such as size, color, or loudness. This is a form of EXPERT PERFORMANCE.

**intrafamily dynamics** the processes by which family members influence each other's thoughts, feelings, and behaviors and the changes in the family relationships that these processes bring. Also called **family dynamics**.

**intrafusal fiber** a small muscle fiber, 2 to 12 of which are located within each MUSCLE SPINDLE. Intrafusal fibers are sensitive to stretching and muscle tension and are connected to the STRETCH RECEPTORS. Compare EXTRAFUSAL FIBER.

**intragroup competition** see COMPETITION.

**intragroup conflict** disagreement or confrontation between two or more members of a single group, as when people on a work team have different opinions about how best to accomplish a specified goal. Intragroup conflict poses a significant challenge to effective team functioning and has been divided into three primary types. **Process conflict** pertains to the logistics of task accomplishment, **relationship conflict** involves interpersonal incompatibilities, and **task conflict** concerns disagreement about the content of the task itself. Compare INTERGROUP CONFLICT.

**intragroup territorial behavior** see GROUP TERRITORIAL BEHAVIOR.

**intraindividual differences** the variations between two or more traits, behaviors, or characteristics of a single person. For example, certain aptitude tests measure a testee's strengths in mathematical, verbal, and analytic abilities; differences among the three standardized scores represent intraindividual differences. See also INDIVIDUAL DIFFERENCES.

**intralaminar nucleus** any of certain NUCLEI located in the internal medullary lamina, a nearly vertical layer of

white matter in the thalamus. The largest of these nuclei is the CENTER MEDIAN.

**intralaminar system** a diffuse system of thalamic nerve cells associated with sleep and wakefulness and believed to be a part of the RETICULAR FORMATION.

**intramaze cue** a CUE that is within a maze, such as floor texture, wall color, or a scent.

**intramuscular injection (im injection)** the injection of a substance into a muscle by means of a hypodermic syringe, usually into the muscle of the upper arm, thigh, or buttock. The choice of muscle area is important in avoiding damage to a nerve or blood vessel. See ADMINISTRATION.

**intransitivity** *n.* the quality of a relationship among elements such that relationships do not transfer across the elements (i.e., that relationships do not exhibit TRANSITIVITY). For example, a transitive relationship would be the following: Given that  $a > b$  and that  $b > c$ , it must be the case that  $a > c$ . An intransitive relationship would be one in which such a conclusion did not necessarily follow. Such relationships appear to be illogical and inconsistent but are often found in matters of personal preference or other subjective judgments. For example, a person might prefer the color blue over red and red over green, but when given a choice, he or she might prefer green over blue. —**intransitive** *adj.*

**intraocular pressure (IOP)** the pressure inside the eye, as measured by TONOMETRY. Increased IOP may indicate glaucoma, a disease in which the pressure inside the eye increases to the point at which it causes impaired vision and eventually blindness if untreated. The use of drugs with anticholinergic effects (e.g., tricyclic antidepressants, antihistamines, sympathomimetics) may raise IOP in patients with acute glaucoma, potentially requiring immediate medical intervention to preserve sight.

**intrapersonal** *adj.* describing factors operating or constructs occurring within the person, such as attitudes, decisions, self-concept, self-esteem, or self-regulation.

**intrapersonal conflict** see INTRAPSYCHIC CONFLICT.

**intrapersonal intelligence** in the MULTIPLE-INTELLIGENCES THEORY, the intelligence involved in self-understanding and in reflecting upon oneself, one's skills, one's motives, and so forth. Intrapersonal intelligence is alleged to be relatively independent of other intelligences posited by the theory.

**intrapsychic** *adj.* pertaining to impulses, ideas, conflicts, or other psychological phenomena that arise or occur within the psyche or mind. Compare EXTRAPSYCHIC.

**intrapsychic ataxia** lack of coordination of feelings, thoughts, and volition (e.g., laughing when depressed). The concept was introduced in 1904 by Austrian psychiatrist Erwin Stransky (1878–1962) in association with schizophrenia, but it has subsequently been seen in other disorders as well. Also called **mental ataxia**. See also INAPPROPRIATE AFFECT.

**intrapsychic conflict** in psychoanalytic theory, the clash of opposing forces within the psyche, such as conflicting drives, wishes, or agencies. Also called **inner conflict**; **internal conflict**; **intrapersonal conflict**; **psychic conflict**.

**intrarole conflict** the form of ROLE CONFLICT caused by incompatibility among the behaviors and expectations as-

sociated with a single role. These inconsistencies may result from the inherent complexity of the role itself, the ambiguity of the role, or a lack of consensus in defining the role and its demands. Compare INTERROLE CONFLICT.

**intrauterine device (IUD)** a device made of plastic or other material (e.g., copper, rubber) that is inserted into the cervix as a contraceptive device. Usually having a coil design or the shape of a T, Y, or other configuration, it interferes with implantation of an embryo in the wall of the uterus.

**intravenous drug use** a form of drug use in which the substance is injected directly into a vein with a hypodermic needle and syringe to speed up and maximize the effect. This typically involves self-administration of a psychoactive drug, often an opioid and especially HEROIN. Sharing or reusing needles or syringes increases the risk of acquiring and transmitting serious blood-borne infections, including hepatitis and HIV. See also NEEDLE EXCHANGE PROGRAM.

**intravenous injection (iv injection)** the injection of a substance into a vein by means of a hypodermic syringe. This technique is used when rapid absorption of a drug is needed, when the substance would be irritating to the skin or to muscle tissue, or when it cannot be administered through the digestive tract. It is a dangerous route of administration because of its rapid onset of pharmacological action, which may cause a potentially fatal reaction. Slow intravenous injection, called **intravenous (iv) infusion**, is used for blood transfusions, parenteral administration of nutrients (i.e., directly into the bloodstream, bypassing the digestive tract), or continuous administration of drugs. See also ADMINISTRATION.

**intraverbal** *n.* a verbal response occasioned by a preceding verbal stimulus. It illustrates CHAINING in the domain of VERBAL BEHAVIOR.

**intrinsic activity** **1.** the magnitude of a response to a drug regardless of dosage. **2.** a measure of the efficacy of a drug-receptor complex in producing a pharmacological effect. Also called **intrinsic efficacy**. **3.** the inborn readiness of babies to be inquisitive and to make contact with their environment. According to Jean PIAGET, cognitive structures, by their very nature, seek to be active, predisposing the child to learn from experience with the environment.

**intrinsic behavior** **1.** a type of behavior expressed through a specific organ (e.g., smiling, the knee-jerk reflex). **2.** behavior that is inherently rewarding. For example, reading a book is pleasurable for some individuals and so is intrinsically rewarding.

**intrinsic eye muscles** see EYE MUSCLES.

**intrinsic motivation** an incentive to engage in a specific activity that derives from pleasure in the activity itself (e.g., a genuine interest in a subject studied) rather than because of any external benefits that might be obtained (e.g., money, course credits). Compare EXTRINSIC MOTIVATION.

**intrinsic reinforcement** the obtainment of a positively valued outcome from the performance of an action. The outcome itself is inherent to the activity and called an **intrinsic reinforcer**. For example, blowing on a harmonica naturally produces sounds. If the sounds serve to reinforce blowing on the harmonica, then the sounds provide intrinsic reinforcement. Compare EXTRINSIC REINFORCEMENT.

**intrinsic religion** a religious orientation in which reli-

gious practice is an end itself, rather than a means to other ends. Compare EXTRINSIC RELIGION. [introduced by Gordon W. ALLPORT]

**intrinsic reward** a positively valued outcome that is implicit in an activity, such as the pleasure or satisfaction gained from developing a special skill. Intrinsic rewards originate directly from the task performance and do not originate from other people. Compare EXTRINSIC REWARD.

**introception** *n.* a personality trait reflecting the extent to which a person is attentive to understanding the needs, motives, and experiences of himself or herself and others. —**introceptive** *adj.*

**introitus** *n.* an opening or entrance to a hollow organ or tube. For example, the anus is the introitus of the rectum, and the **introitus vaginae** is the entrance of the vagina.

**introjection** *n.* **1.** a process in which an individual unconsciously incorporates aspects of external reality into the self, particularly the attitudes, values, and qualities of another person or a part of another person's personality. Introjection may occur, for example, in the mourning process for a loved one. **2.** in psychoanalytic theory, the process of absorbing the qualities of an external OBJECT into the psyche in the form of an internal object or mental REPRESENTATION (i.e., an **introject**), which then has an influence on behavior. This process is posited to be a normal part of development, as when introjection of parental values and attitudes forms the SUPEREGO, but it may also be used as a DEFENSE MECHANISM in situations that arouse anxiety. Compare IDENTIFICATION; INCORPORATION. —**introject** *vb.* —**introjective** *adj.*

**introjective depression** self-critical depression: intense sadness and DYSPHORIA involving punitive, relentless feelings of self-doubt, self-criticism, and self-loathing. The individual with introjective depression becomes involved in numerous activities in an attempt to compensate for his or her excessively high standards, constant drive to perform and achieve, and feelings of guilt and shame over not having lived up to expectations. See also AUTONOMOUS DEPRESSION. Compare ANACLITIC DEPRESSION.

**introjective personality** according to some psychoanalytic theories, a line of personality development that is focused on achievement and evaluation and—if the personality fails to develop properly—may result in feelings of worthlessness, failure, and psychopathological self-criticism. Compare ANACLITIC PERSONALITY.

**intromission** *n.* the act of putting one thing into something else, especially the insertion of the penis into the vagina. See also PENETRATION. —**intromissive** *adj.*

**intron** *n.* a sequence of DNA within a gene that does not encode any part of the gene's ultimate product. Such sequences are transcribed into MESSENGER RNA (mRNA) but are then removed during formation of the mature mRNA, which instructs the cell to synthesize a protein. Compare EXON.

**intropunitive** *adj.* referring to the punishment of oneself: tending to turn anger, blame, or hostility internally, against the self, in response to frustration. Compare EXTRA-PUNITIVE. —**intropunitiveness** *n.*

**introspection** *n.* **1.** the process of attempting to directly access one's own internal psychological processes, judgments, perceptions, or states. **2.** in the literature on attitudes, the process in which a person attempts to explain the reasons for holding a particular attitude, reaching

a specific decision, or engaging in a particular behavior. —**introspective** *adj.*

**introspectionism** *n.* the doctrine that the basic method of psychological investigation is or should be INTROSPECTION. Historically, such an approach is associated with the school of psychological STRUCTURALISM. —**introspectionist** *adj.*

**introspective method** an approach to research in which participants describe their conscious experiences.

**introversion** *n.* orientation toward the internal private world of one's self and one's inner thoughts and feelings, rather than toward the outer world of people and things. Introversion is a broad personality trait and, like EXTRAVERSION, exists on a continuum of attitudes and behaviors. Introverts are relatively more withdrawn, retiring, reserved, quiet, and deliberate; they may tend to mute or guard expression of positive affect, adopt more skeptical views or positions, and prefer to work independently. [concept originated by Carl JUNG for the study of personality types] —**introversive** *adj.* —**introvert** *n.* —**introverted** *adj.*

**introversion–extraversion** *n.* the range, or continuum, of self-orientation from INTROVERSION, characterized by inward and self-directed concerns and behaviors, to EXTRAVERSION, characterized by outward and social-directed concerns and behaviors. See also EYSENCK'S DIMENSIONS; FIVE-FACTOR PERSONALITY MODEL. [concept originated by Carl JUNG for the study of personality types]

**intrusion error** in a memory test, the recall of an item that was not among the material presented for remembering. Intrusion errors can be informative about the nature of forgetting, as when the intrusion is a synonym, rhyme, or associate of a correct item.

**intrusive thoughts** mental events that interrupt the flow of task-related thoughts in spite of efforts to avoid them. Minor intrusions are normal and widespread (see MIND WANDERING). Upsetting intrusions are common after trauma and in obsessive-compulsive disorder.

**intuition** *n.* immediate insight or perception, as contrasted with conscious reasoning or reflection. Intuitions have been characterized alternatively as quasi-mystical experiences or as the products of instinct, feeling, minimal sense impressions, or unconscious forces. —**intuit** *vb.* —**intuitive** *adj.*

**intuitionism** *n.* **1.** the belief that knowledge is obtained primarily by means of INTUITION. **2.** the tendency of people to prefer to think, reason, and remember by processing inexact memory representations rather than by working logically from exact representations. See FUZZY TRACE THEORY. [proposed by U.S. psychologists Charles Brainerd (1944– ) and Valerie Reyna (1955– )]

**intuitive judgment** a decision reached on the basis of subjective feelings that cannot easily be articulated and may not be fully conscious. See INTUITION; SYSTEM 1.

**intuitive knowledge** knowledge that appears to be based on subjective judgment or gut feeling rather than on specific learning. Intuitive knowledge is probably based on nonconsciously recalled information, such as IMPLICIT MEMORY or PROCEDURAL MEMORY, both of which are forms of knowing that are not necessarily accompanied by verbal awareness of knowing.

**intuitive stage** in PIAGETIAN THEORY, the period during the PREOPERATIONAL STAGE, from about 4 to 7 years, in

which children are able to think in terms of classes and to deal with number concepts, although their thinking is dominated by perception.

**intuitive type** in Carl JUNG'S ANALYTIC PSYCHOLOGY, a FUNCTIONAL TYPE characterized by an ability to adapt "by means of unconscious indications" and "a fine and sharpened perception and interpretation of faintly conscious stimuli." The intuitive type is one of Jung's two IRRATIONAL TYPES; the other is the SENSATION TYPE. See also FEELING TYPE; THINKING TYPE.

**Intuniv** *n.* a trade name for GUANFACINE.

**in utero** in the uterus; that is, before birth.

**invalid** **1.** *n.* a person with a chronic illness or disability who is confined to the home or another environment. **2.** *adj.* lacking VALIDITY.

**invariance** *n.* **1.** in the theory of ECOLOGICAL PERCEPTION, any property of an object that remains constant despite changes in the point of observation or surrounding conditions. **2.** the property of being unchanged by a TRANSFORMATION. For example, after adding a constant value to each of a set of scores on a test, the degrees of difference among the scores will demonstrate invariance, being the same for the original and transformed set. —**invariant** *adj.*

**invariant feature** a characteristic of an object that does not change when the object is viewed under different circumstances. Because invariant features are unaffected by manipulations of the object or the observer, they are powerful cues for object recognition by humans or machines. For example, when solid objects of different orientation are compared, the volume of the objects is an invariant feature.

**invariant sequence** in stage theories of development, such as PIAGETIAN THEORY, the unchanging order in which the stages of development occur. Children must progress sequentially through these stages, none of which can be skipped.

**invasive** *adj.* **1.** denoting procedures or tests that require puncture or incision of the skin or insertion of an instrument or foreign material into the body. **2.** able to spread from one tissue to another, or having the capacity to spread, as in the case of an infection or a malignant tumor. Compare NONINVASIVE.

**invention of new means through mental combination** see MENTAL COMBINATION.

**inventory** *n.* a list of items, often in question form, used in describing and studying behavior, interests, and attitudes.

**inverse agonist** see AGONIST.

**inverse correlation** see NEGATIVE CORRELATION.

**inverse derivation** see BACK-FORMATION.

**inverse dynamics** see INVERSE KINEMATICS.

**inverse factor analysis** see Q-TECHNIQUE FACTOR ANALYSIS.

**inverse kinematics** the transformation necessary to go from movement goals, typically specified in terms of positions or TRAJECTORIES in space, to the means of achieving those goals, described in terms of joint angles. **Inverse dynamics** expresses this transformation in terms of the forces exerted by muscles. Because of the DEGREES OF FREE-

DOM PROBLEM, each of these transformations has many possible solutions for any particular movement.

**inverse relationship** see NEGATIVE RELATIONSHIP.

**inverse-square law** any law of physics stating that one variable decreases or increases in proportion to the reciprocal of the square of another variable. For example, the intensity of a sound is inversely proportional to the square of the distance from the source.

**inverse transformation** see RECIPROCAL TRANSFORMATION.

**Inversine** *n.* a trade name for MECAMYLAMINE.

**inversion** *n.* **1.** in PIAGETIAN THEORY, see NEGATION. **2.** in vision, a reversed image formed on the retina. **3.** an old name for same-sex behavior or orientation or the assumption of the role of the opposite sex.

**inversion of affect** see REVERSAL OF AFFECT.

**inverted retina** the vertebrate retina, with reference to the fact that light must pass through all the cell layers of the retina before it reaches the photosensitive region of the PHOTORECEPTORS, which is at the very back of the eye.

**inverted-U hypothesis** a proposed correlation between motivation (or AROUSAL) and performance such that performance is poorest when motivation or arousal is at very low or very high states. This function is typically referred to as the YERKES–DODSON LAW. Emotional intensity (motivation) increases from a zero point to an optimal point, increasing the quality of performance; increase in intensity after this optimal point leads to performance deterioration and disorganization, forming an inverted U-shaped curve. The optimal point is reached sooner (i.e., at lower intensities) the less well learned or more complex the performance; increases in emotional intensity supposedly affect finer skills, finer discriminations, complex reasoning tasks, and recently acquired skills more readily than routine activities. However, the correlation is considered weak; at best, the inverted U-function represents an entire family of curves in which the peak of performance takes place at different levels of arousal.

**inverted U-shaped distribution** see U-SHAPED DISTRIBUTION.

**investigatory behavior** exploration of a new object or other aspect of the environment. Among nonhuman animals, investigatory behavior can be important in locating new food resources, detecting cryptic predators, extending HOME RANGE, or finding shelter. In laboratory studies, investigatory behavior is often observed independent of any external rewards. See also CURIOSITY.

**investment** *n.* see CATHEXIS. —**invest** *vb.*

**investment model** a theory explaining commitment to a relationship in terms of one's satisfaction with, alternatives to, and investments in the relationship. According to the model, commitment is a function of not only a comparison of the relationship to the individual's expectations but also the quality of the best available alternative and the magnitude of the individual's investment in the relationship; the investment of resources serves to increase commitment by increasing the costs of leaving the relationship. Although originally developed in the context of romantic associations and friendships and used to explain why people stay in abusive relationships, the investment model has since been extended to a variety of other areas, including

employment and education. [proposed in 1980 by U.S. social psychologist Caryl E. Rusbult (1952–2010)]

**invincibility fable** see PERSONAL FABLE.

**invisible displacement** see OBJECT PERMANENCE.

**invisible playmate** see IMAGINARY COMPANION.

**invisible support** any kind of assistance given by one person to another person that the recipient does not notice and is generally unaware of receiving. Invisible support can involve any of the typical forms of SOCIAL SUPPORT, such as material assistance, advice, or love and esteem. Although controversial, studies show that under certain circumstances, invisible support may be more effective than visible support, likely because visible support implies personal inadequacy for dealing with the circumstances at hand and may also create indebtedness to the helper. [coined by psychologist Niall Bolger (1958– )]

**in vitro** referring to biological conditions or processes that occur or are made to occur outside of a living body, usually in a laboratory test tube; an example is IN VITRO FERTILIZATION. Compare EX VIVO; IN VIVO. [Latin, literally: "in glass"]

**in vitro fertilization (IVF)** a procedure in which an ovum (egg) is removed from a woman's body, fertilized externally with sperm, and then returned to the uterus. It is used to treat the most difficult cases of INFERTILITY, but success rates for the procedure are not high.

**in vivo** **1.** referring to biological conditions or processes that occur or are observed within the living organism. Compare EX VIVO; IN VITRO. **2.** denoting a condition or process that approximates a real-life environment, often created for an experiment or research study. [Latin, literally: "in life"]

**in vivo desensitization** a technique used in BEHAVIOR THERAPY, usually to reduce or eliminate phobias, in which the client is exposed to stimuli that induce anxiety. The therapist, in discussion with the client, produces a hierarchy of anxiety-invoking events or items relating to the anxiety-producing stimulus or phobia. The client is then exposed to the actual stimuli in the hierarchy, rather than asked simply to imagine them. Success depends on the client overcoming anxiety as the events or items are encountered. Compare COVERT DESENSITIZATION. See also SYSTEMATIC DESENSITIZATION. [first developed by Mary Cover JONES]

**in vivo exposure** a type of EXPOSURE THERAPY, generally used for treating individuals with phobias, obsessive-compulsive disorder, and other anxiety disorders, in which the client directly experiences anxiety-provoking situations or stimuli in real-world conditions. For example, a client who fears flying could be accompanied by a therapist to the airport to simulate boarding a plane while practicing anxiety-decreasing techniques, such as deep breathing. Compare IMAGINAL EXPOSURE.

**involuntary** *adj.* describing activity, movement, behavior, or other processes (e.g., REFLEXES) that occur without intention or volition, as opposed to those that are intentionally initiated. Compare VOLUNTARY.

**involuntary attention** attention that is captured by a prominent or salient stimulus—for example, in the peripheral visual field—rather than deliberately applied or focused by the individual. Also called **exogenous attention**.

Compare VOLUNTARY ATTENTION; POSTVOLUNTARY ATTENTION. See also PRIMARY ATTENTION.

**involuntary civil commitment** COMMITMENT of an individual to a mental facility against his or her wishes. For individuals to be committed in this way, it must be established in court that the individuals pose a threat to themselves or others.

**involuntary confession** see COERCED CONFESSION.

**involuntary hospitalization** the confinement of a person with a serious mental illness to a mental hospital by medical authorization and legal direction (as in INVOLUNTARY CIVIL COMMITMENT). Individuals so hospitalized may be considered dangerous to themselves or others, may fail to recognize the severity of their illness and the need for treatment, or may be unable to have their daily living and treatment needs otherwise met in the community or to survive without medical attention. Compare VOLUNTARY ADMISSION.

**involuntary muscle** see SMOOTH MUSCLE.

**involuntary nervous system** a less common name for the AUTONOMIC NERVOUS SYSTEM; that is, the neural circuits and pathways involved in involuntary bodily functions.

**involuntary response** a response that is not under conscious control, such as the reflex contraction of the pupils in response to bright light.

**involuntary retrieval** the spontaneous retrieval of a memory into consciousness that occurs without an intention to retrieve it, in contrast to **voluntary retrieval**, which involves a deliberate search to retrieve a specific memory. Sometimes an AUTOBIOGRAPHICAL MEMORY is involuntarily retrieved, as in the PROUST PHENOMENON.

**involuntary treatment** see FORCED TREATMENT.

**involuntary turnover** the number of employees who leave an organization or unit involuntarily during a given period. A distinction is usually made between uncontrollable involuntary turnover, as by death, retirement, or reductions in the workforce, and controllable involuntary turnover, as by work-related accidents or illness or by dismissal for poor performance or disciplinary violations. A high rate of controllable involuntary turnover is almost always a sign of serious organizational problems. Compare VOLUNTARY TURNOVER. See TURNOVER.

**involutional** *adj.* describing the decline of the body or any of its parts from an optimal level of functioning as a result of increasing age. —**involution** *n.*

**involved grandparent** the type of grandparent who has a warm, loving relationship with his or her grandchildren and takes on some of the day-to-day responsibilities for them, such as after-school care or financial assistance. Compare COMPANIONATE GRANDPARENT; REMOTE GRANDPARENT.

**iodopsin** *n.* any one of three PHOTOPIGMENTS found in the RETINAL CONES. Each consists of 11-*cis*-retinal combined with one of three different OPSINS, each of which confers a different wavelength sensitivity on the iodopsin. Also called **cone opsin**. See also RHODOPSIN.

**ion** *n.* an atom or molecule that has acquired an electrical charge by gaining or losing one or more electrons. —**ionic** *adj.*

**Ionamin** *n.* a trade name for PHENTERMINE.

**ion channel** a group of proteins forming a channel that spans a cell membrane, allowing the passage of ions between the extracellular environment and the cytoplasm of the cell. Ion channels are selective; allow passage of ions of a particular chemical nature, size, or electrostatic charge; and may be ungated (i.e., always open) or gated, opening and closing in response to chemical, electrical, or mechanical signals (see LIGAND-GATED ION CHANNEL; VOLTAGE-GATED ION CHANNEL). Ion channels are important in the transmission of neural signals between neurons at a SYNAPSE. The opening of **sodium channels** in the membrane of a postsynaptic neuron permits an influx of sodium ions (Na<sup>+</sup>) into the neuron, which produces an EXCITATORY POSTSYNAPTIC POTENTIAL. The opening of **potassium channels** or **chloride channels** allows potassium ions (K<sup>+</sup>) to leave the postsynaptic neuron or chloride ions (Cl<sup>-</sup>) to enter it, either of which produces an INHIBITORY POSTSYNAPTIC POTENTIAL. See also CALCIUM CHANNEL.

**ionotropic receptor** a RECEPTOR protein that includes an ION CHANNEL that is opened when the receptor is activated. See GLUTAMATE RECEPTOR. Compare METABOTROPIC RECEPTOR.

**ion pump** **1.** a protein molecule that carries out ACTIVE TRANSPORT of ions across a cell membrane. See also SODIUM PUMP. **2.** a type of vacuum pump that turns gases into solids to remove them from an environment.

**IOP** abbreviation for INTRAOCULAR PRESSURE.

**I/O psychology** abbreviation for INDUSTRIAL AND ORGANIZATIONAL PSYCHOLOGY.

**IOR** abbreviation for INHIBITION OF RETURN.

**Iowa Gambling Task (IGT)** a computerized measure of decision-making abilities in which participants attempt to win as much play money as possible by selecting cards from four decks. Two of the decks yield large immediate monetary gains but long-term losses, and the other two yield small immediate gains but long-term rewards. Each deck consists of 40 cards, and participants play until they have chosen 100 cards. The IGT is used in a broad range of clinical investigations (e.g., of mood disorders, pathological gambling, substance abuse) and other research activities to examine people's EXECUTIVE FUNCTIONS via their capacity to account for the long-term implications of their choices. Also called **Bechara Gambling Task**. [originally developed in 1994 by neuroscientist Antoine Bechara, Portuguese-born U.S. neuroscientists Antonio R. Damasio (1944– ) and Hanna B. C. Damasio, and U.S. neuropsychologist Steven W. Anderson to identify individuals with PREFRONTAL CORTEX damage]

**Iowa Tests of Basic Skills (ITBS)** an ACHIEVEMENT BATTERY providing tests for reading, language, mathematics, social studies, science, and sources of information for students in kindergarten through Grade 8. It is divided into 10 skill levels (numbered 5 through 14) according to grade, with norms for the beginning, middle, and end of each academic year. The numerical label of each level reflects the approximate age of the children for which it is intended (e.g., Level 9 is administered to students in Grade 3, who are typically 9 years old). The various subtests of the ITBS are designed to measure the higher level cognitive functions considered basic to succeeding in school, such as interpretation, classification, comparison, and analysis. The ITBS, originally developed at the University of Iowa in 1935 as the **Iowa Every Pupil Test of Basic Skills**, was revised most recently in 2001, 2003, and 2007.



**ip** abbreviation for intraperitoneal.

**IP** abbreviation for INFORMATION PROCESSING.

**IPA** **1.** abbreviation for INDEPENDENT PRACTICE ASSOCIATION. **2.** abbreviation for INTERACTION PROCESS ANALYSIS. **3.** abbreviation for INTERNATIONAL PHONETIC ALPHABET. **4.** abbreviation for INTERPRETIVE PHENOMENOLOGICAL ANALYSIS.

**IPD** abbreviation for interaural phase differences. See BIN-AURAL CUE.

**IPL** abbreviation for INNER PLEXIFORM LAYER.

**IPO model** abbreviation for INPUT-PROCESS-OUTPUT MODEL.

**IPPA** abbreviation for INTERNATIONAL POSITIVE PSYCHOLOGY ASSOCIATION.

**IPR** abbreviation for INTERPERSONAL PROCESS RECALL.

**iproniazid** *n.* a MONOAMINE OXIDASE INHIBITOR developed in the 1950s for the treatment of tuberculosis and later found to have therapeutic value in the treatment of mood disorders. Iproniazid was found to elevate the mood of tuberculosis patients, and clinical trials led to its widespread use as an antidepressant. However, it has now been replaced by other less toxic antidepressant drugs.

**IPS** abbreviation for IDEAL PERFORMANCE STATE.

**ipsative** *adj.* referring back to the self. For example, ipsative analyses of personal characteristics involve assessing multiple psychological attributes and conducting within-person analyses of the degree to which an individual possesses one attribute versus another.

**ipsative method** a type of research procedure in which a person's responses (e.g., scores) are compared only to other responses of that person rather than to the responses of other people. It is thus an IDIOGRAPHIC approach rather than a NORMATIVE one.

**ipsative scale** a scale in which the points distributed to the various different items must sum to a specific total. In such a scale, all participants will have the same total score but the distribution of the points among the various items will differ for each individual. For example, a supervisor using an ipsative scale to indicate an employee's strength in different areas initially might assign 20 points for communication, 30 for timeliness, and 50 for work quality but a few months later assign 30 points for communication, 30 for timeliness, and 40 for quality of work. The total number of points distributed in each case, however, is the same (100). Ipsative scales also may involve ranks: Respondents use the same numbers for ranking but may assign them differently. For example, two individuals indicating their preferences for 10 different restaurants will both use the ranks 1 through 10 but the restaurant chosen as #1 will not be the same for each person, the restaurant chosen as #2 will not be the same, and so on.

**ipsilateral** *adj.* situated on or affecting the same side of the body. Compare CONTRALATERAL. —**ipsilaterally** *adv.*

**ipsilateral deficit** a loss of normal function on the same side of the body as a brain lesion or brain damage. Usually, however, a lesion results in a **contralateral deficit**, or a loss of normal function on the opposite side of the body.

**ipsilateral eye** the eye located on the same side of the body as another structure or object. For example, Layer 5

of the left LATERAL GENICULATE NUCLEUS receives input from the RETINAL GANGLION CELL axons that originate in the left (i.e., ipsilateral) eye. Compare CONTRALATERAL EYE.

**IPSP** abbreviation for INHIBITORY POSTSYNAPTIC POTENTIAL.

**IPSS** abbreviation for INTERNATIONAL PILOT STUDY OF SCHIZOPHRENIA.

**IPT** abbreviation for INTERPERSONAL PSYCHOTHERAPY.

**IQ** intelligence quotient: a standard measure of an individual's intelligence level based on psychological tests. In the early years of intelligence testing, IQ was calculated by dividing the MENTAL AGE by the CHRONOLOGICAL AGE and multiplying by 100 to produce a **ratio IQ**. This concept has now mostly been replaced by the DEVIATION IQ, computed as a function of the discrepancy of an individual score from the mean (or average) score. The mean IQ is customarily 100, with slightly more than two thirds of all scores falling within plus or minus 15 points of the mean (usually one standard deviation). More than 95% of all scores fall between 70 (two standard deviations below the mean) and 130 (two standard deviations above the mean). Some tests yield more specific IQ scores, such as a **verbal IQ**, which measures VERBAL INTELLIGENCE, and a **performance IQ**, which measures NONVERBAL INTELLIGENCE. Discrepancies between the two can be used diagnostically to detect learning disabilities or specific cognitive deficiencies. Additional data are often derived from IQ tests, such as performance speed, freedom from distractibility, verbal comprehension, and PERCEPTUAL ORGANIZATION indices. There are critics who consider the concept of IQ (and other intelligence scales) to be flawed. They point out that the IQ test is more a measure of previously learned skills and knowledge than of underlying native ability and that many participants are simply not accustomed to sitting still and following orders (conditions that such tests require), although they function well in the real world. Critics also refer to cases of misrepresentation of facts in the history of IQ research. Nevertheless, these problems seem to apply to the interpretation of IQ scores rather than the validity of the scores themselves.

**IQR** abbreviation for INTERQUARTILE RANGE.

**IRB** abbreviation for INSTITUTIONAL REVIEW BOARD.

**iridocyclitis** *n.* inflammation of the iris and ciliary body of the eye. **Heterochromic iridocyclitis** is a form of the disorder that results in a loss of pigment in the iris.

**iridology** *n.* a highly controversial method of assessing health by examining the irises of an individual's eyes. Patterns, color variations, and other characteristics of the connective tissue of the iris are thought to be related to specific body parts and indicate health, disorder, or disease. This method lacks sufficient supporting evidence and is not widely accepted among medical professionals.

**iris** *n.* a muscular disk that surrounds the pupil of the eye and controls the amount of light entering the eye by contraction or relaxation. The stroma of the iris, which faces the cornea, contains a pigment that gives the eye its coloration; the back of the iris is lined with a dark pigment that restricts light entry to the pupil, regardless of the apparent color of the iris.

**iris coloboma** a congenital defect of the iris that shows as a cleft or fissure (coloboma) extending outward from the edge of the pupil. A coloboma usually occurs in the lower

portion of the iris. The defect may be one of several signs of a chromosomal anomaly.

**irkunii** *n.* see MYRIACHIT.

**IRM** abbreviation for INNATE RELEASING MECHANISM.

**ironic mental control** the phenomenon whereby the attempt to suppress unwanted thoughts results in an unexpectedly high level of awareness of them. Also called **ironic monitoring process**. [defined by U.S. psychologist Daniel M. Wegner (1948– )]

**irradiation** *n.* **1.** exposure of the body to RADIATION, usually ionizing radiation. See RADIATION THERAPY. **2.** any outward diffusion of energy. **3.** an outmoded concept of Ivan PAVLOV that neural processes tend to spread across the cerebral cortex from one functional region to another. —**irradiate** *vb.*

**irradiation effects** the results of exposure to ionizing radiation. Examples of conditions that may be related to irradiation effects include anencephaly, microcephaly, Down syndrome, cerebral atrophy, and intellectual disability. Irradiation effects on cells of the testes appear as abnormal cell divisions within 2 hours of exposure to radioactivity.

**irradiation theory of learning** the theory that each stimulus activates a specific set of cells in the brain, and this activation spreads (irradiates). Two stimuli become associated when their areas of activation overlap. Irradiation was hypothesized by Ivan PAVLOV to be the neural basis for classical conditioning.

**irrational** *adj.* **1.** lacking in reason or sound judgment; illogical or unreasonable. **2.** lacking in usual mental clarity.

**irrational belief** an illogical, erroneous, or distorted idea, firmly held despite objective contradictory evidence. See NONRATIONAL. See also COGNITIVE DISTORTION. [attributed to Albert ELLIS]

**irrationality** *n.* the state, condition, or quality of lacking rational thought. The term is typically used in relation to cognitive behavior (e.g., thinking, decision making) that is illogical or delusional.

**irrational type** in Carl JUNG's ANALYTIC PSYCHOLOGY, one of the two major categories of FUNCTIONAL TYPE: It comprises the INTUITIVE TYPE and the SENSATION TYPE. Compare RATIONAL TYPE.

**irregular** *adj.* in linguistics, denoting a word or a form of a word that does not follow the usual patterns of INFLECTION in a language. For example, *go* has the irregular past tense *went* (not *go-ed*) and *sheep* has the irregular plural *sheep* (not *sheeps*). Compare REGULAR.

**irrelevant language** a language composed of sounds, phrases, or words that are usually understood only by the speaker, as observed in some individuals with schizophrenia or autism.

**irresistible impulse rule** formerly, a rule commonly used in U.S. courts of law for determining INSANITY, according to which defendants were judged to be insane and therefore absolved of CRIMINAL RESPONSIBILITY if they were unable to control their conduct, even if they were aware that it was wrong. This rule is no longer used.

**irreversible coma** see BRAIN DEATH.

**irreversible MAOI** see MONOAMINE OXIDASE INHIBITOR.

**irritability** *n.* **1.** a state of excessive, easily provoked

anger, annoyance, or impatience. **2.** in physiology, the ability of a cell or tissue to respond to stimuli (e.g., NEURAL IRRITABILITY). —**irritable** *adj.*

**irritable aggression** see AGGRESSION.

**irritable bowel syndrome (IBS)** a common functional disorder of the intestines characterized by abdominal pain or discomfort (e.g., bloating) and changes in bowel habits, with some people experiencing increased diarrhea, others increased constipation, and others alternating between the two. As yet there is no known cause (psychological or physiological), though stress and emotional factors are currently thought to play a role. Also called **mucous colitis**; **spastic colitis**.

**IRT** **1.** abbreviation for INTERRESPONSE TIME. **2.** abbreviation for ITEM RESPONSE THEORY.

**ISA** abbreviation for intracarotid sodium Amytal test. See WADA TEST.

**ischemia** *n.* deficiency of blood in an organ or tissue, due to functional constriction or actual obstruction of a blood vessel. See CEREBRAL ISCHEMIA. —**ischemic** *adj.*

**ischemic penumbra** an area of moderate tissue damage surrounding a focus of primary damage due to inadequate blood supply (see ISCHEMIA). Tissues in the penumbra may be partly preserved due to collateral (alternative) blood flow from neighboring normal areas.

**Ishihara Test for Color Blindness** a COLOR-BLINDNESS TEST using a series of plates (**Ishihara plates**) in which numbers or letters are formed by dots of a given color against a background of dots of varying degrees of brightness and saturation. A modification of the earlier STILLING COLOR VISION TEST, the Ishihara test was devised in 1916 for use by the Japanese army. It first became available commercially in late 1917 and reportedly is now the most widely used color-blindness test. [Shinobu Ishihara (1879–1963), Japanese ophthalmologist]

**ISI** abbreviation for INTERSTIMULUS INTERVAL.

**island deafness** see TONAL GAP.

**island of Reil** see INSULA. [Johann Reil (1759–1813), German physician]

**islands of knowledge** separate, small domains of highly specialized knowledge. Such organization of knowledge is typically found in such fields as medicine and psychology, where there are numerous subspecialties.

**islets of Langerhans** clusters of ENDOCRINE cells within the pancreas. The A (or alpha) cells secrete GLUCAGON, the B (or beta) cells secrete INSULIN, and the D (or delta) cells secrete SOMATOSTATIN. Together these hormones play a key role in regulating blood sugar and carbohydrate metabolism. [Paul Langerhans (1847–1888), German anatomist]

**iso-** *combining form* equal or alike.

**isocarboxazid** *n.* an irreversible MONOAMINE OXIDASE INHIBITOR used as a second-line agent for treatment-resistant depression. Its use is limited by its potentially dangerous interactions with serotonergic and noradrenergic agents and with tyramine-containing foodstuffs (e.g., cheese). U.S. trade name: **Marplan**.

**isochrony** *n.* an observed regularity in which the components of continuous, complex movements (e.g., drawing, speaking, handwriting, typing) are often produced at equal

time intervals, even though the tasks being performed do not require this regularity. —**isochronal** *adj.* —**isochronous** *adj.*

**isohedonic trap** the flaw in Daniel E. BERLYNE's theory of aesthetic preference (see AROUSAL POTENTIAL) that stimuli producing equal amounts of arousal should be equally preferred. Given that equal amounts of arousal can be produced by pleasing or displeasing stimuli, this cannot be the case.

**isolate** **1.** *n.* an individual who remains apart from others, either as a result of choosing to minimize his or her contact with others or through rejection and ostracism by other individuals or groups. For example, a person who is part of a work group but has no, very few, or very superficial social and personal relations with other group members would be an isolate. **2.** *n.* in SOCIOMETRY, any individual who is infrequently or never mentioned when group members report whom they like in their group. In measures of peer acceptance among children, an isolate typically is called a *neglected child*. See SOCIOMETRIC STATUS. **3.** *vb.* see ISOLATION.

**isolated brain** see CERVEAU ISOLÉ; ENCÉPHALE ISOLÉ.

**isolated explosive disorder** an impulse-control disorder characterized by a single, discrete episode in which the individual commits a violent, catastrophic act, such as shooting strangers during a sudden fit of rage. The episode is out of all proportion to any precipitating stress, is not due to any other mental disorder or to a general medical condition, and is not substance induced. Also called **cata-thymic crisis**. Compare INTERMITTENT EXPLOSIVE DISORDER.

**isolate monkey** a monkey that is separated from its mother at birth or at a very early age and raised in complete isolation.

**isolating language** a language in which each MORPHEME is typically a separate word, as in, for example, classical (but not modern) Chinese. Compare AGGLUTINATIVE LANGUAGE; FUSIONAL LANGUAGE.

**isolating mechanism** in evolution, a mechanism that prevents two populations from interbreeding and thus enables the populations to diverge enough to allow separate species to evolve. Isolating mechanisms may also prevent interbreeding between overlapping species. Geographic separation, behavioral differences, differences in physical features, and different seasons for reproduction all serve as isolating mechanisms.

**isolation** **1.** the condition of being separated, such as in SOCIAL ISOLATION. **2.** in psychoanalytic theory, a DEFENSE MECHANISM that relies on keeping unwelcome thoughts and feelings from forming associative links with other thoughts and feelings, with the result that the unwelcome thought is rarely activated. See also COMPARTMENTALIZATION. **3.** in ERIKSON'S EIGHT STAGES OF PSYCHOSOCIAL DEVELOPMENT, see INTIMACY VERSUS ISOLATION. —**isolate** *vb.*

**isolation effect** see DISTINCTIVENESS EFFECT.

**isolation experiment** the removal of a nonhuman animal from social or other contact with other members of its species in order to observe behavioral or other effects.

**isolation of affect** in psychoanalytic theory, a DEFENSE MECHANISM in which the individual screens out painful feelings by recalling a traumatic or painful event without experiencing the emotion associated with it.

**isolation syndrome** see MIXED TRANSCORTICAL APHASIA.

**isolation tank** see FLOTATION TANK.

**isomerization** *n.* a change in the structural arrangement of a molecule without any change in its constituent atoms, which may alter the properties of the molecule. When photons are absorbed by the photopigment RHODOPSIN, for example, the 11-*cis* retinal component undergoes isomerization and triggers a biochemical cascade that ultimately results in a visual signal.

**isomers** *pl. n.* forms of molecules that are identical in chemical composition but differ in the spatial orientation of their atoms (i.e., they are **stereoisomers**). **Enantiomers** are stereoisomers that exist in pairs as mirror images. The two enantiomers of a pair rotate the plane of polarized light in opposite directions: L forms produce leftward or counterclockwise rotation (levorotation), whereas D forms produce rightward or clockwise rotation (dextrorotation). In general, L forms tend to have biological activity.

**isometric contraction** a type of muscle contraction in which tension develops but the muscle does not shorten, as when a weightlifter grasps a barbell. Compare ISOTONIC CONTRACTION.

**isometric control** in ergonomics, a control device, such as a lever or handle, that incorporates a degree of resistance, so that it can be activated only by the application of a certain level of force. Compare ISOTONIC CONTROL.

**isometric tremor** see ACTION TREMOR.

**isomorphism** **1.** a one-to-one structural correspondence between two or more different entities or their constituent parts. **2.** the concept, especially in GESTALT PSYCHOLOGY, that there is a structural correspondence between perceptual experience and neural activity in the brain. —**isomorph** *n.* —**isomorphic** *adj.*

**isoniazid** *n.* a drug of choice for the treatment of tuberculosis. Use of the drug can cause a form of neuritis by blocking the function of pyridoxine (vitamin B<sub>6</sub>) in metabolizing glutamic acid to form the neurotransmitter GAMMA-AMINOBUTYRIC ACID. Isoniazid is structurally related to a known monoamine oxidase inhibitor (MAOI), IPRONIAZID, and was reputed to have some antidepressant activity, although it is not clinically used in this role and is not an MAOI. Also called **isonicotinic acid hydrazide (INH)**.

**isophilia** *n.* feelings of affection or affectionate behavior toward members of one's own sex, but without the genital component characteristic of same-sex sexual behavior. [first described by Harry Stack SULLIVAN]

**isopropyl alcohol** an isomer of propyl alcohol used as a solvent, antiseptic, and cleaning fluid and as an ingredient in some cosmetics, disinfectants, and topical medications. If ingested, it has initial effects similar to those of ETHANOL, but it is extremely toxic.

**Isopto Carpine** a trade name for PILOCARPINE.

**Isopto Eserine** a trade name for PHYSOSTIGMINE.

**isosensitivity function** see RECEIVER-OPERATING CHARACTERISTIC CURVE.

**isotonic contraction** a type of muscle contraction in which the muscle shortens and thickens, as when a person flexes the biceps muscle. Compare ISOMETRIC CONTRACTION.

**isotonic control** in ergonomics, a control device, such

as a button or switch, that is activated by displacement of the control from a neutral point. Isotonic controls have no resistance and their activation is not dependent on the level of force applied. Compare ISOMETRIC CONTROL.

**isotretinoin** *n.* an analog of vitamin A used in the treatment of severe acne that is resistant to other therapies. It is highly teratogenic (see TERATOGEN) and therefore should not be used in pregnancy. More controversially, the use of isotretinoin has been linked with psychological disturbances, such as depression, psychosis, and suicide. The mechanism responsible for these side effects is unknown. U.S. trade name (among others): **Accutane**.

**isotropy** *n.* the state of being the same, especially with respect to direction or orientation, symmetry of form, or uniformity of responses in the different parts of something. Compare ANISOTROPY. —**isotropic** *adj.*

**ISP** abbreviation for INDIVIDUAL SERVICE PLAN.

**ISSP** abbreviation for INTERNATIONAL SOCIETY FOR SPORT PSYCHOLOGY.

**issue-relevant knowledge** see ATTITUDE-RELEVANT KNOWLEDGE.

**I statement** a communication tool in which the first person pronoun is used in talking about relationship issues. Therapists may coach clients to use “I” instead of “you” in statements, such as “I am bothered by your habit” rather than “You have a bad habit” (which is a **you statement**). I statements tend to reduce the negativity and blame directed toward the other person and put the ownership of the issue with the speaker, not the listener.

**IT 1.** abbreviation for INFORMATION TECHNOLOGY. **2.** abbreviation for INSPECTION TIME.

**ITA** abbreviation for INITIAL TEACHING ALPHABET.

**ITBS** abbreviation for IOWA TESTS OF BASIC SKILLS.

**itch** *n.* a cutaneous sensory experience related to pain. The associated nerve endings are the same as those sensitive to the prick-pain sensation (see PRICK EXPERIENCE): A rapidly repeated prick-pain sensation produces the itch reaction.

**IT cortex** abbreviation for INFEROTEMPORAL CORTEX.

**ITD** abbreviation for interaural time differences. See BIN-AURAL CUE.

**item analysis** a set of procedures used to evaluate the statistical merits of individual items comprising a psychological measure or test. These procedures may be used to select items for a test from a larger pool of initial items or to evaluate items on an established test. A variety of different statistics may be computed in item analyses, including difficulty values, INDEXES OF DISCRIMINATION, INTERITEM CORRELATIONS, and ITEM DISCRIMINABILITIES.

**item characteristic curve (ICC)** a plot of the probability that a test item is answered correctly against the examinee's underlying ability on the trait being measured. The item characteristic curve is the basic building block of ITEM RESPONSE THEORY: The curve is bounded between 0 and 1, is monotonically increasing, and is commonly assumed to take the shape of a LOGISTIC FUNCTION. Each item in a test has its own item characteristic curve.

**item discriminability** a statistical measure of how well an item on a test differentiates among subgroups of

test takers, typically those individuals who possess a high degree of some ability versus those who possess a low degree of the ability. Item discriminabilities typically are given as CORRELATION COEFFICIENTS ranging from  $-1$  to  $+1$  in value, with the latter indicating a perfect discriminator. INTERITEM CORRELATIONS also may be used in determining item discriminability. See ITEM ANALYSIS.

**item response theory (IRT)** a psychometric theory of measurement based on the concept that the probability that an item will be answered correctly is a function of an underlying trait or ability that is not directly observable; that is, a latent trait (see LATENT TRAIT THEORY). Item response theory models differ in terms of the number of parameters included in the model. For example, the RASCH MODEL is based on the single parameter of item difficulty, whereas other models additionally examine ITEM DISCRIMINABILITY and the chances of successful guessing. Compare CLASSICAL TEST THEORY. [developed in the 1950s by Frederick M. LORD]

**item scaling** the assignment of a test item to a scale position on some dimension, often that of item difficulty.

**item validity** the extent to which an individual item in a test or experiment measures what it purports to measure.

**iterated bootstrapping** a BOOTSTRAPPING procedure in which samples are randomly drawn (with replacement) from an observed data set, values for different population characteristics are estimated, and the estimates averaged across the set of samples. Then, the samples created during this initial procedure are themselves sampled and their PARAMETERS estimated and averaged. The resampling and recalculating process continues until a stable parameter estimate is obtained. Iterated bootstrapping usually is less prone to error than is the use of a single set of bootstrapping samples.

**iteration** *n.* the repetition of a certain computational step until further repetition no longer changes the outcome or until the repetition meets some other predefined criterion.

**iterative design** in ergonomics, the practice of using results from prior testing or formative evaluation to make design changes during the DEVELOPMENT CYCLE of a new or improved product. The process of iteration continuously feeds previous results into the next design of the product, which is tested or evaluated in its turn, leading to further design changes, and so on.

**I-Thou** *adj.* denoting a relationship in which a subject (“I”) treats someone or something else as another unique subject (“Thou”). German Jewish philosopher Martin Buber (1878–1965), who introduced the term, held that the I-Thou relationship allows for full empathy between subjects that can be transformative, in contrast to the I-IT relationship, which objectifies the other. Buber also held that a person's relationship with God is the ultimate I-Thou relationship, because God is quintessentially Thou. In forms of EXISTENTIAL–HUMANISTIC THERAPY especially, I-Thou moments are prized and denote a significant contact and understanding between client and therapist.

**itinerancy** *n.* see PEREGRINATION.

**itinerant teacher** a teacher who travels to several schools or classrooms, providing specialized instruction to children.

**-itis** *suffix* inflammation or diseased state (e.g., COLITIS).

- ITPA** abbreviation for ILLINOIS TEST OF PSYCHOLINGUISTIC ABILITIES.

**IUD** abbreviation for INTRAUTERINE DEVICE.

**IUPsyS** abbreviation for INTERNATIONAL UNION OF PSYCHOLOGICAL SCIENCE.
- iv** abbreviation for *intravenous*. See INTRAVENOUS INJECTION.

**IV** abbreviation for INDEPENDENT VARIABLE.

**IVF** abbreviation for IN VITRO FERTILIZATION.

**jabberwocky** *n.* meaningless but grammatically correct writing or speech. [from a nonsense poem in *Through the Looking Glass* (1871) by British writer Lewis Carroll (1832–1898)]

**jackknife** *n.* a statistical procedure used to estimate the variability of a PARAMETER associated with a set of data, such as the STANDARD ERROR or CONFIDENCE INTERVAL. It is particularly appropriate when the VARIANCE or underlying distribution is not known. A number of samples are obtained from the original data by eliminating one or more observations at a time, the parameter in question is calculated for each sample, and the individual parameters are combined to provide an estimate of the overall parameter for the entire data set. A jackknife is similar to BOOTSTRAPPING, except that bootstrapping involves replacing observations after they have been sampled, such that after each observation is chosen it is reinserted into the data for possible selection again.

**jacksonian march** in a simple PARTIAL SEIZURE involving motor symptoms, an older name for clonic motor movements in one region or side of the body that start in one muscle group and then move systematically (“march”) to adjacent motor groups. [John Hughlings JACKSON]

**Jackson's law** the principle that when cognitive deterioration results from neurological disease, the higher and more recently developed functions are lost first. [John Hughlings JACKSON]

**Jacobson relaxation method** see PROGRESSIVE RELAXATION.

**Jacobson's organ** see VOMERONASAL SYSTEM. [Ludvig Levin Jacobson (1835–1911), Danish anatomist]

**jactatio capitis nocturnis** see HEAD ROLLING.

**jactitation** *n.* extreme restlessness marked by frequent movements and tossing about. Also called **jactation**.

**Jakob-Creutzfeldt disease** see CREUTZFELDT–JAKOB DISEASE.

**James–Lange theory** the theory that different feeling states stem from the feedback from the viscera and voluntary musculature to the brain. This theory hypothesizes that there are as many physiological responses as there are different intrapsychic feelings and that each of these responses precedes rather than follows the feeling. [William JAMES; Carl Georg Lange (1834–1900), Danish physiologist]

**Janet's test** a test of tactile sensibility in which participants simply answer *yes* or *no* when asked if they feel the touch of the examiner's fingers. [Pierre JANET]

**Janis–Feyerabend hypothesis** the notion that persuasive discourse will be more effective if one first refutes positive arguments on the other side of a question before answering negative attacks on one's own side. [Irving L. JANIS; Paul Karl Feyerabend (1924–1994), Austrian-born U.S. philosopher]

**jargon** *n.* **1.** specialized words and forms of language

used within a particular profession or field of activity. Although jargon is often unavoidable when dealing with technical or specialist subjects, inappropriate or unnecessary use can alienate outsiders, who find it unintelligible. **2.** in prelinguistic children, BABBLING that sounds like plausible speech but is incomprehensible.

**jargon aphasia** **1.** a form of fluent APHASIA in which speech is completely meaningless to the listener, whether by violating the rules of syntax and grammar, using the wrong CONTENT WORDS (e.g., nouns and verbs), using distorted or invented words (NEOLOGISTIC JARGON), or overusing imprecise words (e.g., *it*, *thing*) or grammatical words such as articles and prepositions. **2.** see WORD SALAD.

**JAS** abbreviation for JENKINS ACTIVITY SURVEY.

**jaundice** *n.* a condition associated with a variety of disorders of the liver, gallbladder, and blood and marked by the deposition of bile pigments in the skin, eye surfaces, and excrement. The pigment, which is usually first observed in discoloration of the normally white areas of the eyes, is produced as BILIRUBIN, a breakdown product of the hemoglobin of red blood cells. Jaundice is associated with liver infections but may also occur as an adverse reaction to certain drugs. It is also a causative factor in neurological birth defects (see KERNICTERUS). Also called **icterus**.

**jaw jerk** a reflex test used in the diagnosis of lesions of the corticospinal tract: The examiner taps downward on a person's lower jaw while it hangs open; if the lesion is present, the jaw closes reflexively. Also called **chin reflex**; **jaw reflex**; **mandibular reflex**; **masseter reflex**.

**JCAHO** abbreviation for Joint Commission on Accreditation of Healthcare Organizations. See JOINT COMMISSION.

**J curve** a pattern on a graph that resembles the letter *J*: There is an initial drop in value for a short period of time followed by a continuous increase. For example, a high achieving person training for a difficult job might show a *J* curve for performance—his or her performance initially might drop below that of other employees, while he or she learns difficult skills, but rapidly increase to excellence after the required job skills are fully attained. Also called **J-shaped distribution**.

**J-curve hypothesis** the predicted shape of the distribution of responses in conformity settings, which reflects the fact that most individuals conform to the prescribed norm or act in ways that only slightly deviate from the norm, and few individuals exhibit substantial deviation from the norm. A classic illustration is that of drivers at a stoplight: Most respond by stopping fully, some sharply or moderately reduce speed, and a few do not change speed at all. When graphed, the number of people displaying these different reactions approximates the shape of a letter *J*. [first proposed in 1934 by Floyd H. ALLPORT]

**JDI** abbreviation for JOB DESCRIPTIVE INDEX.

**JDS** abbreviation for JOB DIAGNOSTIC SURVEY.

**jealousy** *n.* a NEGATIVE EMOTION in which an individual resents a third party for appearing to take away (or being

likely to take away) the affections of a loved one. Jealousy requires a triangle of social relationships between three individuals: the one who is jealous, the partner with whom the jealous individual has or desires a relationship, and the rival who represents a preemptive threat to that relationship. Romantic relationships are the prototypic source of jealousy, but any significant relationship (with parents, friends, etc.) is capable of producing it. It differs from ENVY in that three people are always involved. See also DELUSIONAL JEALOUSY. —**jealous** *adj.*

**Jehovah complex** a form of MEGALOMANIA in which the individual experiences delusions of grandeur and identifies with qualities associated with God.

**Jellinek's alcoholism species** a categorization of types (or "species") of alcoholism defined in 1960 by U.S. physiologist Elvin M. Jellinek (1890–1963). **Alpha alcoholism** is characterized by undisciplined drinking that disturbs the person's interpersonal and family relationships and work life, with a reliance on the effects of alcohol to relieve physical or emotional pain, but without a loss of control or an inability to abstain. **Beta alcoholism** is characterized by serious medical complications (e.g., liver damage, gastritis, nutritional deficiency) associated with undisciplined drinking but does not involve physical or psychological dependence. **Gamma alcoholism** is characterized by physical and psychological dependence, tolerance, complete loss of control over drinking, and withdrawal symptoms if use is suspended. Jellinek considered this type to be the predominant form of alcoholism in the United States. **Delta alcoholism** is similar to gamma alcoholism but is distinguished by the person's inability to abstain, as opposed to complete loss of control over drinking. **Epsilon alcoholism** is characterized by periodic drinking episodes or binges interspersed with dry periods lasting weeks or months.

**Jenkins Activity Survey (JAS)** a self-administered, multiple-choice survey that attempts to duplicate the clinical assessment of the Type A behavior pattern (see TYPE A PERSONALITY) by means of an objective psychometric procedure. It measures characteristics of this behavior pattern, such as extreme competitiveness, striving for achievement and personal recognition, aggressiveness, haste, impatience, and explosiveness. [Carlyle David **Jenkins** (1928– ), U.S. psychologist]

**Jensenism** *n.* the controversial theory that racial differences in IQ are at least partly heritable and that attempts to raise IQ through environmental interventions have been largely unsuccessful. [Arthur R. **JENSEN**]

**jet lag** a maladjustment of CIRCADIAN RHYTHMS that results from traveling through several time zones in a short span of time. Rest, work, eating, body temperature, and adrenocortical-secretion cycles may require several days to adjust to local time. See also CIRCADIAN RHYTHM SLEEP DISORDER.

**jiggle cage** in experimental research, a box mounted on springs that records small oscillations caused by the enclosed animal.

**jigsaw method** a team-learning technique initially designed to foster a cooperative learning environment that reduces prejudice and social isolation and improves academic achievement. Students work in groups on a content unit. The teacher assigns specific topics in the unit to each group member and allows students with the same topics to leave their group to study the topic with others who have that same assignment. The students then return to their

original groups and teach their topics to the other members. Also called **jigsaw classroom**. [developed in the 1970s by U.S. experimental social psychologist Elliot Aronson (1932– ) and his colleagues]

**jimsonweed** *n.* a poisonous annual weed, *Datura stramonium*, of the nightshade family that grows wild in temperate and subtropical areas of the world and contains several potent anticholinergic agents, including the alkaloids SCOPOLAMINE and ATROPINE. It has been taken in small doses to treat asthma, whooping cough, muscle spasms, and other conditions and has also been applied externally for pain relief. Poisoning results in symptoms such as hyperthermia, flushing, dry mucous membranes, nausea and vomiting, rapid heartbeat, visual disturbances, hallucinations, delirium, coma, and potentially death; there is often amnesia for the period of intoxication. The name is a corruption of "Jamestown weed," the name given to the plant by early settlers of Virginia. Also called **devil's trumpet**.

**jinjinia bemar** see KORO.

**jiryan** *n.* a CULTURE-BOUND SYNDROME found in India, with symptoms similar to those of SHEN-K'UEI.

**jittering** *n.* deliberately adding a small amount of random noise to each observation in a SCATTERPLOT when the variables take on relatively few values, resulting in data points that stack on top of each other and thus are hard to interpret. Primarily a data visualization technique, jittering helps separate the points and make it easier to discern a pattern or relationship.

**JLO** abbreviation for JUDGMENT OF LINE ORIENTATION.

**JND (jnd)** abbreviation for just noticeable difference. See DIFFERENCE THRESHOLD.

**job analysis** the collection and analysis of information about a specific job. Data are obtained through interviews with or written questionnaires from those doing or supervising the job, or through observation or audiovisual recordings of the job in action. Important classes of information include the behaviors, tools, working conditions, and skills involved in the job. Job analysis is the first step in developing effective PERSONNEL SELECTION, EMPLOYEE EVALUATION, JOB EVALUATION, and PERSONNEL TRAINING programs. Once data have been collected, the role of the **job analyst** is to use statistical techniques and subjective judgment to determine the primary dimensions of a job and to identify those positions that are sufficiently similar to be classified as the same job.

**job-characteristics model** a model that attempts to characterize the basic parameters of a job as they affect the psychological state of the employee, especially with regard to motivation. The five core **job dimensions** are identified as skill variety, TASK IDENTITY, TASK SIGNIFICANCE, autonomy, and feedback. The model holds that WORK MOTIVATION, job performance, and job satisfaction will all be improved if jobs are designed or redesigned to maximize these dimensions. See JOB DIAGNOSTIC SURVEY. See also JOB ENLARGEMENT; JOB ENRICHMENT. [proposed by J. Richard HACKMAN and U.S. organizational behaviorist Greg R. Oldham (1947– )]

**job-component method** a JOB-EVALUATION technique based on the assumption that similarities in job content impose similar demands on the employees and therefore warrant corresponding pay scales. The job-component method is often applied through a statistical analysis of data obtained from a POSITION ANALYSIS QUESTIONNAIRE.

Compare CLASSIFICATION METHOD; FACTOR-COMPARISON METHOD; POINT METHOD; RANKING METHOD.

**job-component validity** a SYNTHETIC VALIDITY method of estimating the ability of a test battery to predict suitability for a particular job that involves use of the POSITION ANALYSIS QUESTIONNAIRE.

**job criterion** the standard used to evaluate employees on a specific dimension of performance in a job. The criterion usually consists of a supervisor's rating of employee performance, but objective measures, such as quantity of productivity or absence rate, may also be used. See CUTOFF SCORE; CRITERION DATA; CRITERION DIMENSIONS. See also EMPLOYEE EVALUATION; JOB PERFORMANCE.

**job description** a formal description of a specific job, as supplied by an organization's HUMAN RESOURCES department to those holding or applying for the position. Although formats vary, a job description usually comprises three main elements: (a) identification information, including job title, location, and reporting structure (i.e., relations to superiors and subordinates); (b) a brief statement summarizing the purpose of the job; and (c) a more detailed description of JOB DIMENSIONS or of specific duties and responsibilities. The job description is usually compiled through a systematic process of JOB ANALYSIS and can be used in turn as the basis for a PERSONNEL SPECIFICATION describing the attributes required to perform the job effectively. Also called **job profile**.

**Job Descriptive Index (JDI)** a 72-item JOB SATISFACTION scale used to measure the attitudes of employees in areas such as work, supervision, pay, promotions, and co-workers. Each item is an adjective or short phrase (e.g., "boring," "good opportunities for promotion"), and the participant writes Y (yes), N (no), or ? (cannot decide) to indicate whether the item applies to his or her job. Originally published in 1969, the JDI has undergone three major revisions, most recently in 2009. [developed by Patricia Cain SMITH, Canadian psychologist Lorne M. Kendall (1933–1977), and U.S. organizational psychologist Charles L. Hulin (1936– )]

**job design** specification of the content (responsibilities and duties) of a given job with the goal of maximizing both JOB SATISFACTION and ORGANIZATIONAL EFFECTIVENESS. See also JOB REDESIGN.

**Job Diagnostic Survey (JDS)** a measure of the motivational components of a job, as identified by the JOB-CHARACTERISTICS MODEL of J. Richard HACKMAN and U.S. organizational behaviorist Greg R. Oldham (1947– ). The JDS is a self-report instrument in which employees' answers are used to score a job in terms of five core dimensions that are held to determine employee motivation (skill variety, TASK IDENTITY, TASK SIGNIFICANCE, autonomy, and FEEDBACK). If scores are low, a program of JOB ENLARGEMENT or JOB ENRICHMENT may be recommended.

**job dimensions** 1. the general categories of tasks or duties that define the nature of a particular job, such as clerical duties, receptionist duties, or decision-making responsibilities. In compiling job descriptions, it is customary to define the key dimensions of a job instead of providing an exhaustive list of all the tasks that will be required. 2. general areas of competence, personality traits, or attitudes that are thought to be essential to the performance of a job, such as ambition, attention to detail, or interpersonal skills. These attributes may be included in PERSONNEL SPECIFICATIONS in addition to more specific skills and quali-

fications, such as directly related work experience or fluency in a particular language. 3. see JOB-CHARACTERISTICS MODEL.

**job enlargement** the expansion of the responsibilities associated with a particular job. In **horizontal job enlargement** (or **horizontal loading**), the employee is required to perform a greater number and variety of subtasks of the same level of complexity as his or her existing duties; in **vertical job enlargement** (or **vertical loading**), he or she is required to perform more complex tasks and to assume increased responsibility and autonomy.

**job enrichment** the enhancement of employees' interest in and attitude toward work tasks by improving their quality of life on the job (see QUALITY OF WORKLIFE). Job enrichment methods include (a) reducing boredom by giving employees a variety of different tasks and (b) allowing employees to plan their own work activities.

**job evaluation** analysis and comparison of jobs for the purpose of determining the pay structure within an organization. Methods used in job evaluation include (a) ranking jobs on the basis of a subjective estimation of their relative overall value to the company (see RANKING METHOD); (b) assigning jobs to certain predefined classifications on the basis of job description (see CLASSIFICATION METHOD); (c) comparing jobs to certain identified BENCHMARK JOBS in terms of the COMPENSABLE JOB FACTORS entailed; (d) assigning point values to jobs according to a series of defined criteria such as education, experience, and the initiative or effort needed (see POINT METHOD); and (e) ranking jobs according to a statistical analysis of job content, as revealed by employees' answers to a standard questionnaire (see JOB-COMPONENT METHOD).

**job interview** see EMPLOYMENT INTERVIEW.

**job involvement** the degree to which a person psychologically identifies with his or her job. A person who has a high level of job involvement usually obtains major LIFE SATISFACTION from the job. Job accomplishments lead to a strong sense of pride and self-esteem, whereas failures in the job lead to discontent and depression. See also JOB SATISFACTION.

**job performance** effectiveness of job-related behavior as measured against a specific criterion of success, such as quantity or quality of output, or against multiple CRITERION DIMENSIONS. See EMPLOYEE EVALUATION; JOB CRITERION; PERFORMANCE REVIEW.

**job placement** in organizations, the assignment of existing or newly hired employees to the particular jobs for which they are best qualified. Also called **personnel placement**; **selective placement**.

**job-placement stage** a level of rehabilitation and work-preparedness training at which a person with a disability is presumed to be ready to move into the competitive job market. Rehabilitation personnel may assist individuals with tasks such as filling out job applications and preparing for job interviews (see PLACEMENT COUNSELING).

**job preview** information provided to people applying for a position about what they can expect if they are hired to perform the job. A **realistic job preview (RJP)** will provide both positive and negative information in an attempt to avoid disillusionment and increase the JOB TENURE of those hired.

**job redesign** systematic efforts to improve work methods, equipment, and the working environment. Major ap-



proaches to job redesign include METHODS ANALYSIS, which focuses on the development of efficient work methods; HUMAN FACTORS ENGINEERING, which is primarily concerned with the design of equipment, facilities, and environments; and job enlargement or job enrichment, which aim to expand the variety, complexity, and responsibility of jobs.

**job requirements** the personal qualities or skills that are necessary for performing work tasks safely and effectively. Job requirements may include, for example, good verbal communication skills, the ability to drive a truck, or the ability to perform complex mathematical calculations. They are normally identified in the PERSONNEL SPECIFICATION for a job.

**job rotation** an employment practice in which workers are required to perform different duties on a regularly scheduled basis, usually as a means of increasing their motivation and developing their skills.

**job-safety analysis** a specialized form of TASK ANALYSIS used to identify and control operating hazards in the workplace. It involves defining the job, identifying required tasks, identifying hazards, and making recommendations to eliminate or control the hazards. Also called **job-hazard analysis**. See also ACCIDENT ANALYSIS; ACCIDENT-PATH MODEL; FAILURE MODES AND EFFECTS ANALYSIS; FAULT TREE ANALYSIS.

**job satisfaction** the attitude of a worker toward his or her job, often expressed as a hedonic response of liking or disliking the work itself, the rewards (pay, promotions, recognition), or the context (working conditions, colleagues). See also JOB INVOLVEMENT.

**job sharing** a flexible work option in which two people voluntarily share a single full-time position and are compensated according to the proportion of work each performs. Job sharing schedules can take the form of half-days, alternate days, or alternate weeks but generally have minimal overlap of individual work schedules.

**job specification** see PERSONNEL SPECIFICATION.

**job tenure** **1.** the length of time an employee spends in a position. See TURNOVER. **2.** in certain professions, such as academia, a guarantee of lifelong employment. Also called **tenure**.

**Jocasta complex** in psychoanalytic theory, an abnormally close or incestuous attachment of a mother to her son. It is named for Jocasta, the mother and wife of Oedipus in Greek mythology. Compare OEDIPUS COMPLEX.

**Johari window** a model used to evaluate the extent of open and authentic communication between individuals. It is an imaginary window with four panes that each represent a dimension of knowledge about a person: (a) The **open** pane contains information about the person that is known both to the person and to others, (b) the **blind** pane contains information about the person that is known only to others, (c) the **hidden** pane contains information about the person that is known only to the person, and (d) the **unknown** pane contains information about the person that is known neither to the person nor to others. The goal is to increase the amount of information about the self that is known both to the self and to others. [devised in the 1950s by U.S. psychologist Joseph Luft and U.S. psychiatrist Harrington V. Ingham]

**John Henry effect** an effect in which rivalry between a control group and an experimental group leads to competi-

tive efforts that disturb the whole basis of the experiment. It is a particular danger in industrial psychology experiments that attempt to compare the outputs of groups working under different task conditions. The term derives from the legend of John Henry, a railroad steel driver who worked himself to death with a steam drill.

**Johnson v. Louisiana** a case resulting in an influential 1972 U.S. Supreme Court decision establishing that there is no constitutional requirement that juries be unanimous in their verdict for crimes that are not punishable by death. The court concluded that permitting a majority verdict does not violate DUE PROCESS rights.

**joint attention** attention overtly focused by two or more people on the same object, person, or action at the same time, with each being aware of the other's interest. Joint attention is an important developmental tool. Around 9 months of age infants can follow their parents' gaze and begin to imitate what their parents do. By thus focusing attention on an object as well as on the adult's reaction to it, children can learn about the world. This technique is also used in primate studies (see ENCULTURATION). Also called **shared attention**.

**Joint Commission** a national, private, nonprofit organization, founded in 1951, whose purpose is to encourage the attainment of uniformly high standards of institutional medical care. Formerly known as the Joint Commission on Accreditation of Healthcare Organizations (JCAHO), it changed to its present name in 2007. The Joint Commission evaluates and accredits hospitals and health care organizations that provide MANAGED CARE (including HMOs, PPOs, and INTEGRATED DELIVERY SYSTEMS), HOME CARE, long-term care, behavioral health care, laboratory services, and ambulatory care services.

**joint distribution** the pattern of values obtained when estimating the probability of occurrence of two or more RANDOM VARIABLES. For example, the probability values for drawing a heart and a jack in a deck of cards would form the following joint distribution:  $(13/52) \times (48/52)$  to obtain a heart but not a jack;  $(39/52) \times (48/52)$  to obtain a nonheart and a nonjack;  $(39/52) \times (4/52)$  to obtain a nonheart and a jack; and  $(13/52) \times (4/52)$  to obtain a heart that is also a jack. A joint distribution for two variables is referred to more specifically as a BIVARIATE DISTRIBUTION, whereas a joint distribution for more than two variables is called a MULTIVARIATE DISTRIBUTION.

**joint probability** the chance that two events will occur simultaneously. For example, the joint probability of drawing a heart that is a jack from a deck of 52 cards is equal to  $(13/52) \times (4/52)$ , or  $1/52$ . See also JOINT DISTRIBUTION.

**joke** *n.* a story or remark that is intended to provoke laughter. See HUMOR; INCONGRUITY THEORY OF HUMOR.

**joking mania** see WITZELSUCHT.

**JOL** abbreviation for JUDGMENT OF LEARNING.

**Jonah complex** in the humanistic psychology of Abraham MASLOW, inhibition of becoming fully self-actualized—that is, of fulfilling one's potential—for fear of facing new challenges and situations. It is named for the biblical prophet Jonah, who attempted to evade the mission imposed on him by God. See also FEAR OF SUCCESS.

**Just's law** the principle that the newer of two ASSOCIATIONS of equal strength will show more loss over time than will the older association. [Adolph Just (1874–1920), German psychologist]

**jouissance** *n.* in the theory of French psychoanalyst Jacques Lacan (1901–1981), enjoyment or pleasure that goes beyond mere satisfaction of an INSTINCT. Such pleasure is seen as a subversive and destabilizing force. The term was later adopted by literary and philosophical critics in the traditions of DECONSTRUCTION and POSTSTRUCTURALISM. [French, literally: “enjoyment,” “pleasure”]

**joy** *n.* a feeling of extreme gladness, delight, or exultation of the spirit arising from a sense of well-being or satisfaction. The feeling of joy may take two forms: passive and active. **Passive joy** involves tranquility and a feeling of contentment with things as they are. **Active joy** involves a desire to share one’s feelings with others. It is associated with more engagement of the environment than is passive joy. The distinction between passive and active joy may be related to the intensity of the emotion, with active joy representing the more intense form. Both forms of joy are associated with an increase in energy and feelings of confidence and self-esteem.

**J-shaped distribution** see J CURVE.

**judge-made law** see COMMON LAW.

**judgment** *n.* **1.** the capacity to recognize relationships, draw conclusions from evidence, and make critical evaluations of events and people. **2.** in psychophysics, the ability to determine the presence or relative magnitude of stimuli.

**judgment of learning (JOL)** a METAMEMORY assessment of the extent to which to-be-learned information has been acquired. JOLs can be based on several different sources of information, including intrinsic cues (i.e., information from the to-be-learned material) and mnemonic cues (i.e., information based on performance during a learning task). See also EASE-OF-LEARNING JUDGMENT; RETROSPECTIVE CONFIDENCE JUDGMENT; UNDERCONFIDENCE-WITH-PRACTICE EFFECT.

**Judgment of Line Orientation (JLO)** a neuropsychological test that assesses visual perception of angular relationships and is sensitive to dysfunction of the right hemisphere of the brain. The task is to visually match two angled lines, which appear on top of each page of a spiral-bound book, to 11 numbered and angled lines forming a semicircle on the bottom of each page. The test has two versions, consisting of the same 30 items presented in different order. The score is the number of items with correct judgments for both lines and can range from 0 to 30. [developed in the 1970s by Arthur L. BENTON]

**judgment sampling** selecting a group from which to gather data on the basis of personal opinion as to what is representative of the population under study. For example, judgment sampling could involve choosing a number of well-informed people from different social groups and asking them who they believe will be the next U.S. president. The outcome from such a study may well not be consistent with the result of asking a random sample from the population. This means that although judgment sampling may be useful in a PILOT STUDY, it generally does not result in warranted inference to any population of interest. See DE-LIBERATE SAMPLING.

**Juke** *n.* pseudonym of a family in New York, seven generations of which were studied by U.S. social scientist Richard Lewis Dugdale (1841–1883), with findings reported in 1877. He claimed that the study showed relationships between prostitution and illegitimacy, resulting in neglected offspring, and between exhaustion and alcohol consump-

tion, resulting in criminality and inability to make sound judgments. This study, which drew from and contributed to SOCIAL DARWINISM, stimulated many further studies throughout the early 20th century. These later studies erroneously claimed to identify linkages between immorality and intellectual deficits and ignored conclusions by Dugdale that environmental factors were significant.

**jumping Frenchmen of Maine syndrome** a CULTURE-BOUND SYNDROME resembling LATAH, observed in lumberjacks of French Canadian descent living in Quebec and Maine. It is characterized by an extreme STARTLE RESPONSE involving yelling, imitative speech and behavior, involuntary jumping, flinging of the arms, and command obedience. Also called **jumper disease of Maine; jumper disease**. See also IMU; MYRIACHIT.

**jumping stand** a type of apparatus formerly used to study DISCRIMINATIONS. Rats were placed on a stand and had to obtain food by jumping through doors on a platform some distance away. Usually two doors were present, each displaying a distinctive stimulus. Jumping through one door (designated as correct) led to food. Jumping toward the other door, which was locked, led to a fall into a net. The apparatus has been abandoned because too many variables were left uncontrolled.

**juncture** *n.* a set of phonological features (usually a combination of PAUSE and STRESS) that signals the boundary between words or word elements, so that, for example, *a nice cream van* can be distinguished from *an ice cream van*.

**Jungian psychology** the psychoanalytical theory and approach to psychotherapy of Carl JUNG. See ANALYTIC PSYCHOLOGY.

**Jungian typology** a theory of personality that classifies individuals into types according to (a) attitudes of INTROVERSION and EXTRAVERSION (see ATTITUDINAL TYPES) and (b) the dominant functions of the psyche (see FUNCTIONAL TYPES). [Carl JUNG]

**junkie** *n.* slang for a drug addict, especially a heroin addict.

**junk science** invalid or fraudulent research findings, especially when admitted into court. Junk science is a cause of concern because judges, attorneys, and juries often lack the scientific training to identify unsound research.

**jurisprudential teaching model** a teaching model that emphasizes the role of social interaction and uses case studies as a paradigm for information processing and evaluating social issues.

**jury consultant** see TRIAL CONSULTANT.

**jury nullification** a jury’s decision to exonerate a defendant who has clearly committed a criminal act. This can occur when the members of the jury believe that to find the defendant guilty would be unfair or unjust or would demand a sentence (e.g., death penalty) with which the jurors do not wish to be associated.

**jury pool** see VENIRE.

**justice** *n.* the impartial and fair settlement of conflict and differences, typically by legal process and the imposition of proportionate punishment. See also COMMONSENSE JUSTICE; PROCEDURAL JUSTICE; RESTORATIVE JUSTICE.

**justification** *n.* **1.** in ethics, the process of determining right actions and appropriate beliefs. **2.** in clinical psychology, defensive intellectualization, as in making an excuse

for an action, cognition, or affect that one knows to be or is considered to be wrong or indefensible. **3.** in epistemology, a concept of intellectual responsibility regarding the norms of belief about ideas, actions, emotions, claims, theories, and so forth.

**just noticeable difference (JND; jnd)** see DIFFERENCE THRESHOLD.

**just-noticeable-differences method** see METHOD OF JUST NOTICEABLE DIFFERENCES.

**just noticeable duration** the duration for a comparison stimulus that is just perceptibly shorter or longer than the duration of a standard stimulus. Also called **least perceptible duration**.

**just-world hypothesis** the idea that the world is a fair and orderly place where what happens to people generally is what they deserve. In other words, bad things happen to bad people, and good things happen to good people. This view enables an individual to confront his or her physical and social environments as though they were stable and predictable but may, for example, result in the belief that the innocent victim of an accident or attack must somehow be responsible for or deserve it. Also called **belief in a just world; just-world bias; just-world phenomenon**. [postulated by Canadian psychologist Melvin J. Lerner (1929– )]

**juvenile delinquency** illegal behavior by a minor (usu-

ally identified as a person younger than 18 years) that would be considered criminal in an adult. Examples are vandalism, theft, rape, arson, and aggravated assault.

**juvenile justice system** the courts and other government entities involved in the ADJUDICATION of cases involving minors (usually identified as individuals younger than 18 years). Fundamentally, it differs from the criminal justice system for adults in its belief that young people are more amenable to treatment than adults. Consequently, there is greater emphasis on rehabilitation, and greater efforts are made than in the adult system to reduce the stigmatization associated with being labeled a criminal.

**juvenile-onset diabetes (juvenile diabetes)** see DIABETES MELLITUS.

**juvenile period** the period when an animal is no longer dependent on its parents for survival but is not yet sexually active. In nonhuman mammals, this constitutes the time between the cessation of weaning (the end of infancy) and the onset of sexual activity.

**juvenile transfer hearing** a formal presentation and assessment of facts during which the court decides whether a minor should be transferred to an adult court for ADJUDICATION.

**juvenilism** *n.* a sexual attraction to children or adolescents. See EPHEBOPHILIA; PEDOPHILIA.

# Kk

**k 1.** symbol for COEFFICIENT OF ALIENATION. **2.** symbol for the number of individuals, groups, or other units in a statistical analysis.

**K2** *n.* see SPICE.

**KABC** abbreviation for KAUFMAN ASSESSMENT BATTERY FOR CHILDREN.

**KAE** abbreviation for KINESTHETIC AFTEREFFECT.

**KAI** abbreviation for KIRTON ADAPTION-INNOVATION INVENTORY.

**kainate receptor** see GLUTAMATE RECEPTOR.

**kainic acid** a neuroexcitatory compound derived from the red seaweed *Digena simplex*. It is commonly used in research to destroy brain tissue in experimental animals.

**kairos** *n.* in EXISTENTIAL PSYCHOLOGY, the moment of heightened awareness at which a person gains INSIGHT into the meaning of an important event. See also AHA EXPERIENCE; EPIPHANY. [from Greek, "fitness, opportunity, time"]

**KAIT** abbreviation for KAUFMAN ADOLESCENT AND ADULT INTELLIGENCE TEST.

**Kalischer syndrome** see STURGE-WEBER SYNDROME.

**Kallikak** *n.* pseudonym of a family, studied by Henry Herbert GODDARD in the early 1900s, that was purported to have one branch characterized as moral, upstanding, and productive and another as immoral, degenerate, and "feeble-minded." The study was claimed at the time to provide evidence of inheritance of moral traits and risk of moral degeneracy due to mental illness or disability. Goddard used these findings to support EUGENICS practices but later disavowed the argument that there was a linkage between morality and intellectual disability. Moreover, subsequent reviews of the study have called into question the findings it put forth; the most recent of these suggests that dietary deficiencies and fetal alcohol syndrome were likely sources of the intellectual disabilities and physical anomalies identified in the study.

**Kallmann's syndrome** a hereditary disorder characterized by HYPOGONADISM (sometimes in the form of underdeveloped male sexual organs), intellectual disability, color blindness, complete ANOSMIA (absence of the sense of smell), and MOTOR OVERFLOW. Kallmann's syndrome is transmitted as an X-linked dominant trait. [Franz Josef Kallmann (1897–1965), German-born U.S. psychiatrist and geneticist]

**Kamin effect** a phenomenon of STIMULUS CONTROL in which previous learning restricts or prevents conditioning of a response to a new stimulus. For example, a light paired with an unconditioned stimulus for several trials results in some conditioning for the light. Adding a tone at this point, to form a COMPOUND STIMULUS, would result in the tone being less effective as an elicitor than it would if it had been present from the beginning. Also called **Kamin blocking effect**. [Leon J. Kamin (1927– ), U.S. psychologist]

**kangaroo care** an alternative to incubator care in which premature infants in stable medical condition are

placed naked between their mother's breasts for extended periods of time, allowing their body temperature to be regulated by their mother's body heat.

**Kanizsa figure** any one of several figures that induce the perception of illusory contours defining a shape that appears to be brighter than the background. The most common example is the **Kanizsa triangle**, which is induced by three black circles placed as the apexes of a triangle. Each circle has a 60° wedge removed so that these wedges become the angles of the illusory triangle. Even though nothing connects the circles, a strong impression of a triangle that is brighter than the background is perceived. [Gaetano Kanizsa (1913–1993), Italian psychologist]

**Kanner's syndrome** see AUTISM. [Leo Kanner (1894–1981), Austrian-born U.S. child psychiatrist]

**Kansas v. Hendricks** a case resulting in a controversial 1997 U.S. Supreme Court decision that upheld the INVOLUNTARY CIVIL COMMITMENT of an offender after he had already completed his sentence for a sex crime. The court ruled that laws permitting the confinement of sex offenders in mental hospitals after they have served their criminal sentences are not unconstitutional if the offender remains a threat.

**kansei engineering** an engineering and design practice that elicits and analyzes users' subjective feelings about aspects of a product or range of products and incorporates these findings into subsequent designs. Also called **affective engineering**; **emotional engineering**; **sensory engineering**. [Japanese: "psychological feeling"]

**Kantianism** *n.* the philosophical position of Immanuel KANT, most notably that consciously experienced phenomena (see PHENOMENON) represent all that humans can know about essentially unknowable realities (see NOUMENON) and that these phenomena result from the application of certain intrinsic CATEGORIES OF THOUGHT to the material of sense experience. —**Kantian** *adj.*, *n.*

**kappa** *n.* see COHEN'S KAPPA.

**kappa effect** the interaction between the perceived duration of a stimulus and the spatial extent of the stimulus. When a small visual stimulus and a large visual stimulus are both flashed for the same length of time, the duration of the large stimulus is perceived as longer than that of the small stimulus. An analogous effect has been described for tactile sensations.

**kappa opioid receptor** see OPIOID RECEPTOR.

**kappa wave** a type of BRAIN WAVE with a frequency similar to that of an ALPHA WAVE (8–12 Hz) but with a much weaker amplitude. Kappa waves are associated with thinking, particularly such activities as problem solving or recall of a partly learned task.

**karezza** *n.* see CAREZZA.

**karma** *n.* **1.** in HINDUISM, a concept signifying (a) a mental or physical action, (b) the consequence of a mental or physical action, (c) the sum of all consequences of the actions of a person in this or some previous life, and (d) the

chain of cause and effect in the world of morality. **2.** in BUDDHISM, the universal law of cause and effect. The effect of an action, which can be of the body, speech, or mind, is not primarily determined by the act itself but by the intention of the actor. When a deed cannot be done but the intention to do it exists, this still produces an effect. [Sanskrit, literally: “deed”] —**karmic** *adj.*

**karyotype** *n.* **1.** the chromosomal constitution of a cell, including the number of chromosomes, their structural features, and any abnormalities. **2.** a photograph of an individual’s chromosomes that shows them in an ordered, numbered array. **Karyotype testing** is used clinically to look for chromosome alterations and mutations. It is also used for forensic comparison of genetic material from different sources. See also CHROMOSOMAL MAP.

**kat** *n.* see KHAT.

**kata-** *combining form* see CATA-.

**Katz Index of Activities of Daily Living** an observer-based measure of the FUNCTIONAL STATUS of older adults and individuals with chronic disorders. An individual is rated on the degree of assistance required to perform six basic functions: bathing, dressing, feeding, toileting, transferring, and continence. Baseline measurements provide useful feedback when compared to periodic or subsequent measurements. Also called **Katz Index of Independence in Activities of Daily Living**. [originally developed in 1963 by Sidney **Katz** (d. 2012), U.S. physician and geriatrician]

**Kaufman Adolescent and Adult Intelligence Test (KAIT)** a test of intelligence based upon the theory of fluid and crystallized abilities, yielding scores that reflect these two kinds of abilities. Designed for use with individuals ages 11 and older, the KAIT may be administered in two forms: a standard battery of six core subtests or an expanded battery that includes four additional subtests. See CATTELL–HORN THEORY OF INTELLIGENCE. [Alan S. **Kaufman** (1944– ) and Nadeen L. **Kaufman** (1945– ), U.S. psychologists]

**Kaufman Assessment Battery for Children (KABC)** an intelligence test developed in 1983 and based on the theory of Alexander LURIA, which posits that intelligence comprises separate abilities for simultaneous and for successive processing. An example of a simultaneous ability test would be a test requiring the solution of geometric matrix problems, in which one element of a geometric matrix is missing. An example of a successive ability test would be a test requiring the solution of serial-recall problems, in which series of symbols are presented and individuals have to recall them in the order they were presented. Now in its second edition (published in 2004), the **KABC-II** has been expanded to allow for testing and interpretation of results in terms of the CATTELL–HORN THEORY OF INTELLIGENCE as well. It comprises 18 core and supplementary subtests and is designed for use with individuals 3 to 18 years of age. [Alan and Nadeen **Kaufman**]

**kava** *n.* an extract of the root of *Piper methysticum*, a shrub indigenous to certain southern Pacific islands, where it is used for ritual, social, and recreational purposes. It is a mild intoxicant, sedative, and analgesic agent. The primary active ingredients of the plant are kavain, dihydrokavain, methysticin, and dihydromethysticin—alkaloids that have anticonvulsant and muscle relaxant properties and also produce sedation without clouding of consciousness. Kava is now widely available in Western

countries as an herbal supplement promoted for relaxation (e.g., to relieve stress, anxiety, and tension) and as a remedy for sleeplessness and menopausal symptoms, among other uses. These benefits have largely not been definitively determined, and in fact kava-containing supplements have been shown to be ineffective for treating menopausal symptoms. In 2002, the U.S. Food and Drug Administration issued a consumer advisory warning of the potential risk of rare but serious reactions—including hepatitis, cirrhosis, and liver failure—associated with use of these supplements. Kava has also been associated with depression of the central nervous system or coma (particularly in combination with prescribed anxiolytics), and other less serious adverse reactions (e.g., skin rash) have been reported as well. There are several known and potential interactions of kava with other agents (see DRUG INTERACTIONS), including anticoagulants, MONOAMINE OXIDASE INHIBITORS, and drugs metabolized by the CYTOCHROME P450 3A4 enzyme (e.g., clonidine, nefazodone, St. John’s wort). Also called **ava**; **kava kava**.

**KBS** abbreviation for knowledge-based system. See EXPERT SYSTEM.

**K complex** a brief, high-amplitude spike-and-rebound waveform recorded in the scalp electroencephalograph during sleep onset. K complexes and SLEEP SPINDLES occur normally during Stage 2 NREM sleep (see SLEEP STAGES). It is postulated that they may suppress sleep disruptions and coordinate memory consolidation. K complexes can also be involved in nocturnal seizures.

**keep-awake pill** see WAKE-PROMOTING AGENT.

**Kegel exercises** exercises designed to build strength and gain control of the pelvic-floor muscles. These exercises are used in the treatment of VAGINISMUS in women and play a role in increasing sexual pleasure in both women and men. The exercises are also used in the treatment of INCONTINENCE. [developed in 1948 by A. H. **Kegel** (1894–1981), U.S. gynecologist]

**Keller plan** a personalized system of education in which material to be learned is divided into units and students work at their own pace, using textbooks and other written materials as primary resources. Fundamental understanding of each unit’s content must be demonstrated before a student can advance to the next one. [Fred S. **KELLER**]

**Kemadrin** *n.* a trade name for PROCYCLIDINE.

**Kempf’s disease** see HOMOSEXUAL PANIC. [Edward J. **Kempf** (1885–1971), U.S. psychiatrist]

**Kendall’s coefficient of concordance** see COEFFICIENT OF CONCORDANCE. [Maurice George **Kendall** (1907–1983), British statistician]

**Kendall’s tau** (symbol:  $\tau$ ) a nonparametric measure of the degree of association between two ordinal variables (i.e., rank-ordered data). For example, a researcher could calculate Kendall’s tau to assess how much of a relationship there is between the rankings of students’ performance provided by two observers (e.g., a teacher and a teaching assistant). Also called **Kendall’s rank correlation coefficient**. [Maurice **Kendall**]

**Kendall’s W** see COEFFICIENT OF CONCORDANCE. [Maurice **Kendall**]

**Kennard principle** the idea that brain damage sustained early in life is less debilitating than brain damage sustained later in life, presumably because of the enhanced

ability of the younger brain to reorganize. This principle is not always confirmed. [Margaret **Kennard** (1899–1976), U.S. psychologist]

**keratitis** *n.* inflammation of the cornea. Keratitis may be deep, as when the infection causing it is carried in the blood or spreads to the cornea from other parts of the eye; or superficial, as when caused by bacterial or viral infection or by an allergic reaction. See also COGAN'S SYNDROME.

**keratoconus** *n.* the most common of a group of noninflammatory disorders that affect the central cornea of both eyes. The earliest symptom is loss of vision due to irregular corneal astigmatism.

**keratometer** *n.* an instrument used to measure the curvature of the cornea of the eye, applied in the diagnosis of ASTIGMATISM. Also called **ophthalmometer**.

**kernel-of-truth hypothesis** the idea that STEREOTYPES, despite being exaggerated generalizations about a group of diverse individuals, sometimes contain elements that accurately describe the qualities of the stereotyped group.

**kernel sentence** in early versions of GENERATIVE GRAMMAR, a base version of a sentence upon which such operations as negation and interrogation are performed to produce variations of that base. For example, the kernel sentence *Jack kissed Jill* can be transformed into the sentences *Did Jack kiss Jill?*, *Jack did not kiss Jill*, *Jill was kissed by Jack*, and so forth. Psychological interest in this idea stems from its implications for the cognitive processes by which we form and interpret sentences. In later models of TRANSFORMATIONAL GENERATIVE GRAMMAR, the transformational rules are seen as operating upon the DEEP STRUCTURES underlying sentences, rather than on any actual sentence.

**kernicterus** *n.* a congenital disorder associated with excessive levels of BILIRUBIN in the newborn infant. It is characterized by severe JAUNDICE and has the potential to cause severe damage to the central nervous system. Kernicterus is often a complication of RH BLOOD-GROUP INCOMPATIBILITY. See also BILIRUBIN ENCEPHALOPATHY.

**Kernig's sign** a reflex action that is a diagnostic sign for MENINGITIS. The test is positive if flexing the thigh at the hip while extending the leg at the knee results in resistance and pain. [Vladimir Michailovich **Kernig** (1840–1917), Russian physician]

**ketamine** *n.* a drug that is closely related to PCP (phencyclidine). It acts as an antagonist at NMDA RECEPTORS and was formerly used as a DISSOCIATIVE ANESTHETIC. Disorientation and perceptual distortions may result from its use, which have limited its utility in surgical anesthesia and made it a sought-after drug of abuse. It is ingested in the form of tablets, capsules, or powder by drug users for its hallucinogenic effects. Low-dose intravenous infusions have been reported to improve symptoms in patients with treatment-resistant unipolar and bipolar depression. U.S. trade name: **Ketalar**.

**ketoconazole** *n.* an antifungal agent that has been suggested as a treatment for depression resistant to conventional drugs, due to its ability to inhibit the biosynthesis of steroids. No large-scale clinical data support this. Ketoconazole is a potent inhibitor of numerous CYTOCHROME P450 enzymes (particularly CYP3A4) and has significant interactions with psychotropic drugs that utilize this metabolic path. Its numerous interactions and propensity to cause liver damage limit its use. U.S. trade name: **Nizoral**.

**keyboard** *n.* a device that allows a user to input information to a computer by pressing specific alphanumeric, symbol, or function keys or key combinations. Many forms of specialized keyboards (e.g., enlarged, ergonomic, reduced in size) are available and can be particularly useful to individuals with disabilities.

**key-word method** a MNEMONIC technique sometimes used in learning foreign-language vocabulary. If the native language is English, the key word would consist of an English word associated with the sound of a foreign word and linked to the foreign word's meaning in a mental image. For example, the French word *livre* ("book") may remind an English speaker of the sound of *leaf*; the key word *leaf* can then be connected to *book* in a mental image, such as visualizing a leaf in a book as a bookmark.

**khat** (**chat**; **kat**; **qat**) *n.* an herbal CNS STIMULANT obtained from the leaves and other parts of an evergreen shrub, *Catha edulis*, indigenous to northeast Africa and the Arabian peninsula. The leaves are traditionally chewed to produce mild stimulant effects (e.g., mental alertness, suppression of appetite and the need for sleep, general sense of well-being); they can also be used to make a tea. The substance responsible for khat's psychoactive properties is **cathinone**, a compound that is structurally similar to amphetamine. As with amphetamines, physiological tolerance and dependence and a variety of adverse reactions (e.g., behavioral disorganization and psychosis) may occur with continued or high-dose use. The use of khat has spread beyond its traditional boundaries to the United States and other Western countries. In many of those places, however, khat is illegal; it is classified by the U.S. Drug Enforcement Administration as a Schedule I controlled substance (see SCHEDULED DRUG).

**KHOS** abbreviation for KRANTZ HEALTH OPINION SURVEY.

**kibbutz** *n.* in Israel, a communal living arrangement, typically centered on agriculture, manufacturing, or tourism, with collective economic, social, and child-rearing practices. See also COMMUNE.

**Kiddie Schedule for Affective Disorders and Schizophrenia (KSADS)** see SCHEDULE FOR AFFECTIVE DISORDERS AND SCHIZOPHRENIA.

**kids' culture** the environments (e.g., playgrounds) and activities (e.g., games, rituals) that are unique to children and in which they create their own social structures separate from the adult world.

**Kilner screen** a special viewing apparatus that allegedly reveals the invisible AURAS emitted by human beings. It is essentially a light filter, originally consisting of two pieces of glass separated by a layer of dicyanine A (a blue dye used in photographic emulsions); more recently manufactured Kilner screens are usually made with less toxic chemicals. Adherents claim that the inspection of human auras through such a screen can play a vital role in the early diagnosis of disease. Also called **Kilner goggles**. See also KIRLIAN PHOTOGRAPHY. [Walter J. **Kilner** (1847–1920), British physician]

**kilocalorie** *n.* see CALORIE.

**kinase** *n.* any of a class of enzymes that catalyze the addition of a phosphate group to a molecule (e.g., a protein).

**kindling** *n.* an alteration in brain functioning that results from repeated minor electrical or chemical stimulation, culminating in the appearance of electrographic abnor-

malities and often generalized seizures. It is often used as an experimental model for epilepsy.

**kindness** *n.* benevolent and helpful action intentionally directed toward another person. Kindness is often considered to be motivated by the desire to help another, not to gain explicit reward or to avoid explicit punishment. See ALTRUISM. —**kind** *adj.*

**kindred** *n.* an extended family. The study in large kindreds of mutations that predispose to disease helps to identify the position and PENETRANCE of a particular gene mutation.

**kinematics** *n.* **1.** the study of motion of the body or parts of the body in terms of limb and joint position, velocity, and acceleration. In ergonomics, these are studied in the course of work activity. **2.** the patterns of movement of the limbs in motion. See also DYNAMICS. —**kinematic** *adj.*

**kinesalgia (kinesialgia)** *n.* pain on muscular exertion.

**kinesia** *n.* see MOTION SICKNESS.

**kinesics** *n.* the study of the part played by body movements, such as hand gestures, eye movements, and so on, in communicating meaning. See BODY LANGUAGE.

**kinesics technique** the analysis of the BODY LANGUAGE of a person. The technique is used particularly during the interviewing of a criminal suspect.

**kinesimeter** *n.* **1.** an instrument for measuring the extent of a movement. **2.** a 19th-century instrument for measuring the cutaneous sensation of the body.

**kinesiology** *n.* **1.** the study of the mechanics of body movement, especially their relationship to anatomical characteristics and physiological functions. **2.** a discipline that encompasses all of the SPORT SCIENCES as well as the professional skills necessary for the application of sport and exercise knowledge. —**kinesiological** *adj.* —**kinesiologist** *n.*

**kinesiotherapy** *n.* the application of progressive physical exercise and activities to treat individuals with FUNCTIONAL LIMITATION or to aid those interested in improving or maintaining general physical and emotional health. A **kinesiotherapist** is a certified professional who develops a specific treatment plan for each individual, determining appropriate therapeutic exercises and physical-education activities and directing their implementation. Formerly called **corrective therapy**.

**kinesis** *n.* a type of movement in which an organism's response is related to the intensity of the stimulation but is not oriented in any spatial direction. An organism might be more or less active according to the amount of light, temperature, or humidity. Compare TAXIS; TROPISM.

**kinesthesia** *n.* the sense that provides information through receptors in the muscles, tendons, and joints, enabling humans and other animals to control and coordinate their movements, including walking, talking, facial expressions, gestures, and posture. Also called **kinesthesia**; **kinesthetic sense**; **movement sense**. See PROPRIOCEPTION. —**kinesthetic** *adj.*

**kinesthetic aftereffect (KAE)** any perceptual distortion of movement. This illusion may be the basis for the myth that performance in sport is improved by first practicing with a heavier than normal weight (e.g., in a baseball game, swinging two bats during warm-up may create the

perception that one then swings a single bat faster at the plate).

**kinesthetic feedback** information about the position, movement, tension, and so forth of body parts provided by stretch receptors in the muscle spindles and tendons and by receptors in the joints. See COROLLARY DISCHARGE; MUSCLE SENSATION.

**kinesthetic hallucination** a false perception of body movement.

**kinesthetic imagery** the cognitive re-creation of the feeling of movements; that is, of the sensations from the PROPRIORECEPTORS. **Dynamic kinesthetic imagery** is the cognitive creation of the feeling of movements while physically moving. For example, a figure skater may imagine the feeling of routine elements while walking through the pattern, or a skier may imagine the feel of the course while standing, shifting weight, and moving the shoulders.

**kinesthetic receptor** any of the sensory receptors that monitor the position and movement of muscles. These are found in muscles, tendons, and joints.

**kinesthetics** *n.* awareness of the position and movement of body parts.

**kinesthetic sense** see KINESTHESIS.

**kinetic anamorphosis** distortion in the appearance of a moving stimulus that occurs when the view of the stimulus is periodically interrupted. For example, the rotating spokes of a wagon wheel appear curved when viewed through the pickets of a fence.

**kinetic depth effect** the impression that a visual figure has three dimensions when in motion. For example, a stationary pattern of apparently random elements will organize into a coherent three-dimensional structure when set in motion. See DEPTH FROM MOTION.

**kinetic information** **1.** the set of qualities perceived in objects that are in motion. **2.** gestures, postures, and other body language that may be observed, for example, in a clinical evaluation of a patient.

**kinetic tremor** see ACTION TREMOR.

**kingdom** *n.* traditionally, the highest category used in BIOLOGICAL TAXONOMY, which contains related PHYLA. Modern classifications recognize five kingdoms—Bacteria, Protista (or Protoctista), Animalia, Fungi, and Plantae—which in some systems are grouped into DOMAINS.

**kinkeeper** *n.* the social role, usually assumed by women, of promoting and protecting relationships between family members.

**kin recognition** the ability to detect that another individual is closely related. A variety of cues—visual, auditory, and chemical—have been demonstrated to be effective. In many studies, kin recognition appears to be based on early social experience. That is, individuals recognize those they have interacted with during development but fail to recognize related individuals with whom they have never interacted. However, chimpanzees are able to recognize relationships, such as those between females and their male offspring, simply by observing similarities in photographs, even of chimpanzees they have never seen before. Kin recognition is important for directing support toward kin in KIN SELECTION.

**kin selection** a variation of NATURAL SELECTION that favors behavior by individuals that will increase the chances

of their relatives surviving and reproducing successfully (see ALTRUISM). Individuals share 50% of their genes with a parent or sibling, so if they risk their own ability to reproduce or survive but help their parents or more than two siblings to reproduce or survive, they will benefit indirectly by gaining INCLUSIVE FITNESS. Compare DIRECT SELECTION; INDIVIDUAL SELECTION.

**Kinsey Institute for Research in Sex, Gender, and Reproduction** a private nonprofit corporation affiliated with Indiana University, whose mission is to promote interdisciplinary research and scholarship in the fields of human sexuality, gender, and reproduction. It was founded in 1947 by Alfred KINSEY, who served as its first director and carried out much of his pioneering research into human sexual behavior there.

**Kinsey Scale** an index of an individual's relative position on a 7-point continuum of sexual orientation, ranging from 0 (exclusively heterosexual, with no same-sex interest) to 6 (exclusively homosexual, with no heterosexual interest). Points 1 through 5 represent gradations of predominant versus incidental heterosexual-homosexual behaviors and thoughts. Known formally as the **Heterosexual-Homosexual Rating Scale**, it is also sometimes called the **Kinsey (Six) Scale**, a misnomer given that 0 is one of the scale's 7 points. See also SEXUAL ORIENTATION GRID. [developed in 1948 by Alfred KINSEY and colleagues]

**kinship** *n.* the state of being related by birth, common ancestry, marriage, or adoption. Notions of who is and who is not kin may vary considerably from one culture to another. For example, in strongly patriarchal societies (see PATRIARCHY), some of one's mother's closest blood relatives may not be considered one's kin.

**kinship migration** **1.** a type of residence change among older adults, especially widows, that involves moving closer to family members. **2.** the movement of families, either all at once as a group or in phases as individual members or subgroups, from one geographic location to another.

**kinship network** the system of formal and informal relationships that make up an EXTENDED FAMILY in a given culture or society, typically based on blood ties, marriage, or adoption. The analysis of kinship networks and DESCENT GROUPS in preindustrial societies has been a major concern of cultural anthropology. See also RELATIONSHIP SYSTEM. Also called **kinship system**.

**Kirlian photography** a technique that records on photographic film a corona discharge, sometimes characterized as the AURA or "life force" emanating from a person, animal, plant, or object. It involves photographing subjects in a high-voltage electric field and produces images in which a colored halo or corona appears around the subjects. Some claim that changes in the quality of the aura in the images of photographed persons can reflect changes in their health and emotional condition, making Kirlian photography of potential benefit in medical diagnosis. Skeptics maintain that there is scant evidence for this. See also KILNER SCREEN; REICHENBACH PHENOMENON. [Semyon Kirlian (1900–1980), Armenian-born Russian inventor and electrician, and his wife Valentina Kirlian, Russian biologist]

**Kirton Adaption-Innovation Inventory (KAI)** a questionnaire, used chiefly in organizational settings, that is designed to measure creativity, cognitive style, and the degree to which individuals are adaptive, innovative, or a degree of both in their approach to problem solving. It com-

prises 33 items (32 scored, 1 unscored) requiring participants to rate how difficult it is for them to be the person described (e.g., a person who is thorough) using a 17-point LIKERT SCALE format, ranging from *very hard* to *very easy*. [originally developed in 1976 by Michael J. Kirton, British psychologist]

**kissing** *n.* the activity of making contact with the lips, usually with another individual as a sign of friendship or affection. The kiss may involve lip contact with any part of the body and with varying degrees of pressure. Mouth-to-mouth kissing may include extension of the tongues (see FRENCH KISS). Kissing is possibly related to the licking behavior manifested by nonhuman animals. It is not observed in all cultures.

**klazomania** *n.* a mental state that produces compulsive or repetitive shouting (**klazoclonia**), which can be a symptom of severe psychosis, Tourette's disorder, or autism.

**Kleeblattschädel syndrome** a congenital disorder characterized by a three-lobed skull caused by upward and lateral bulging of the brain through skull sutures. Affected individuals also have HYDROCEPHALUS, severe intellectual disabilities, and abnormally short limbs. Also called **cloverleaf skull**. [from German *Kleeblatt*, "cloverleaf," and *Schädel*, "skull"]

**Kleine-Levin syndrome** a rare disorder, primarily occurring in adolescent males, that is characterized by recurring episodes of excessive drowsiness and sleep (up to 20 hours per day). Symptoms, which may last for days to weeks, include excessive food intake, irritability, disorientation, lack of energy, and hypersensitivity to noise. It is possibly due to a malfunction of the hypothalamus, the part of the brain that governs appetite and sleep. [Willi Kleine, 20th-century German neuropsychiatrist; Max Levin (1901–1974), Russian-born U.S. neurologist]

**Kleinian** *adj.* denoting or in accordance with the theories and methods of the school of psychoanalysis founded by Melanie KLEIN, including concepts such as INTERNALIZATION, OBJECT RELATIONS, the DEPRESSIVE POSITION, IDEALIZATION, and the PARANOID-SCHIZOID POSITION.

**kleptolagnia** *n.* a morbid urge to steal, considered by some theorists to be associated with sexual excitement. However, this association is controversial, and many consider the urge to be unrelated to sexual issues.

**kleptomania** *n.* an impulse-control disorder characterized by a repeated failure to resist impulses to steal objects that have no immediate use or intrinsic value to the individual, accompanied by feelings of increased tension before committing the theft and either pleasure or relief during the act. The stealing is not done out of anger or in response to a delusion or hallucination and is not better accounted for by another disorder, such as conduct disorder or a manic episode. Also called **compulsive stealing**. —**kleptomaniac** *n.*

**Klinefelter's syndrome** a disorder in which males are born with an extra X chromosome, resulting in small testes, absence of sperm, enlarged breasts, intellectual disability, and abnormal behavior. Also called **XXY syndrome**. [Harry F. Klinefelter Jr. (1912–1990), U.S. physician]

**klinotaxis** *n.* see TAXIS.

**Klippel-Feil syndrome** a congenital condition characterized by a short neck, low hairline, and a reduced number of vertebrae, some of which may be fused into a single mass. Also called **Klippel-Feil anomaly**. [Maurice Klippel



(1858–1942), French neurologist; André **Feil** (b. 1884), French neurologist]

**klismaphilia** *n.* interest in, and arousal from, the use of enemas in sexual activity.

**Klonopin** *n.* a trade name for CLONAZEPAM.

**Klüver–Bucy syndrome** a condition resulting from damage to both medial temporal lobes and marked by hypersexuality and a tendency to examine all objects by touch or by placing them in the mouth. Other symptoms may include visual agnosia (inability to visually recognize objects), decreased emotional responsivity (including loss of normal fear and anger responses), distractibility, and memory loss. The syndrome is observed in laboratory animals following temporal lobe ablation and, rarely, in humans following extensive bilateral temporal damage caused by HERPES-SIMPLEX ENCEPHALITIS or trauma. [Heinrich **Klüver** (1897–1975), German-born U.S. neurologist; Paul **Bucy** (1904–1992), U.S. neurosurgeon]

**knee-jerk reflex** see PATELLAR REFLEX.

**knockdown** *n.* the alteration of a particular gene in an individual organism or in a line of organisms by an experimenter so that the gene is present but its effects are not manifested. Also called **gene knockdown**.

**knockout** *n.* the elimination or inactivation of a particular gene in an individual organism or in a line of organisms by an experimenter in order to better understand the function of that gene. Using GENETIC ENGINEERING, scientists replace a normal gene in an organism (such as a mouse) with a defective gene and assess the impact of the defect on the organism. Also called **gene knockout**.

**knockout drops** a popular name for a combination of CHLORAL HYDRATE (formerly in common use as a sedative but now rarely employed clinically) and alcohol, used surreptitiously to produce a sudden loss of consciousness. This combination was called a **Mickey Finn** and might be considered an early example of a DATE-RAPE DRUG.

**knowing** *n.* see REMEMBER–KNOW PROCEDURE.

**knowledge** *n.* **1.** the state of being familiar with something or aware of its existence, usually resulting from experience or study. **2.** the range of one's understanding or information. In some contexts, the words *knowledge* and *memory* are used synonymously.

**knowledge base** **1.** an individual's general background knowledge, which influences his or her performance on most cognitive tasks. **2.** a repository of factual and heuristic information, usually in machine-processable form. **3.** the body of accumulated information (research, best practices, and so on) that guides an organization's approach to specific problems or challenges.

**knowledge-based system (KBS)** see EXPERT SYSTEM.

**knowledge elicitation** in ergonomics, a variety of methods used to elude the content and structure of users' knowledge or reasoning regarding a product or system. Techniques used include CASE-BASED REASONING, CONVERSATION ANALYSIS, and TASK ANALYSIS. Knowledge elicitation should take account of EXPERT–NOVICE DIFFERENCES.

**knowledge function of an attitude** the role an attitude can play in helping to interpret ambiguous information or to organize information. For example, a positive attitude toward a friend may assist in attributing that person's negative behavior to situational factors rather than to

personal characteristics. See also FUNCTIONAL APPROACH TO ATTITUDES.

**knowledge of performance (KP)** verbalized (or verbalizable) information about the nature of the movement pattern that has been used to achieve a goal.

**knowledge of results (KR; KOR)** verbalized (or verbalizable) information about the outcome of a response in relation to the goal. Learning theory suggests that a learner profits most from immediate availability of this information (e.g., about the accuracy of responses on a test or the speed and accuracy of a movement or an action sequence). Although knowledge of results is essential for guiding ACQUISITION, too much feedback can prevent the individual from forming an internal model of what is correct behavior.

**knowledge representation** the method used for encoding knowledge or semantic information in an ARTIFICIAL INTELLIGENCE program. This is usually not the computer language employed but rather systematically developed structures encoded in that language. Examples of knowledge representation include the predicate calculus, CONCEPTUAL DEPENDENCIES, and FRAME.

**knowledge, skills, abilities, and other characteristics (KSAOs)** attributes of an employee or applicant for a position that are measured for such purposes as PERSONNEL SELECTION, JOB PLACEMENT, PERFORMANCE REVIEW, and PERSONNEL TRAINING. The KSAOs required of an employee performing a job should be identified on the basis of a thorough analysis of the tasks involved in the job. See JOB REQUIREMENTS; PERSONNEL SPECIFICATION. See also BONA FIDE OCCUPATIONAL QUALIFICATION.

**know thyself** see GNOTHI SE AUTON.

**Kocher–Debré–Sémélaigne syndrome** a disorder of infants and children marked by weakness and overgrowth of muscles. It is associated with CONGENITAL HYPOTHYROIDISM and intellectual disability in some cases. Also called **Debré–Sémélaigne syndrome**. [reported in 1892 by Swiss surgeon Emil Theodor **Kocher** (1841–1917) and in the 1930s by French pediatricians Robert **Debré** (1882–1978) and Georges **Sémélaigne**]

**Kohlberg's theory of moral development** the concept that the cognitive processes associated with moral judgment develop through a number of universal variant stages. According to the theory, there are three main levels: the PRECONVENTIONAL LEVEL, the CONVENTIONAL LEVEL, and the POSTCONVENTIONAL LEVEL. Broadly speaking, the morally developed individual moves from a selfish concern with rewards and punishments, through a reliance on fixed rules and conventional attitudes, to a position of independent principled judgment. See also HEINZ DILEMMA. [Lawrence KOHLBERG]

**Köhler effect** an increase in motivation that sometimes occurs among individuals working in groups on CONJUNCTIVE TASKS that require persistence but little coordination of effort. The effect is likely due to the increased effort expended by the less capable group members. Compare COMPENSATION EFFECT. [first observed in 1926 by German researcher Otto **Köhler**]

**Kohnstamm test** a demonstration frequently used to prepare an individual for hypnosis. The participant is asked to press an arm backward against a wall for a minute or two and then to step away, allowing the arm to relax. What follows is a natural reflexive tendency for the arm to rise,

known as **Kohnstamm's phenomenon**. Believing that the reflex has occurred because of the hypnotist's instructions for the task, the participant becomes more inclined to be susceptible to further suggestions during subsequent hypnosis. Also called **Kohnstamm maneuver**. [Oskar **Kohnstamm** (1871–1917), German physician]

**Kohs Block Design Test** a performance test of intelligence consisting of a set of 16 colored cubes that the participant must arrange into designs presented on 17 test cards. Although still available as a separate stand-alone instrument, the Kohs Block Design Test has been adapted for use as a component of various other assessment measures, most notably the intelligence scales devised by David WECHSLER. [developed in 1919 by Samuel C. **Kohs** (1890–1984), U.S. psychologist]

**kola nut (cola nut)** the seed of a tree, *Cola acuminata* or *Cola nitida*, that is native to tropical Africa and is cultivated in South America and the West Indies. The active ingredient is CAFFEINE, which comprises about 1.5% of the dry weight of the nut. Kola was discovered for the Western world in 1667 by a Congo missionary, Father Carli, who observed that local tribesmen chewed the nut before meals.

**Kolmogorov–Smirnov goodness-of-fit test** a NONPARAMETRIC method for comparing the distribution from a sample data set to an expected distribution or the known distribution of a given population. If the test yields a discrepancy (*D*) larger than the CRITICAL VALUE, then the sample data are considered to be significantly different from the reference distribution. Also called **Kolmogorov–Smirnov *D* test**; **Kolmogorov–Smirnov one-sample test**. Compare KOLMOGOROV–SMIRNOV TWO-SAMPLE TEST. [Andrei Nikolaevich **Kolmogorov** (1903–1987) and Nikolai Vasilovich **Smirnov** (1900–1966), Soviet mathematicians]

**Kolmogorov–Smirnov two-sample test** a NONPARAMETRIC method for comparing the distributions from two samples to see if they are similar. A significant result from a Kolmogorov–Smirnov two-sample test indicates that the two samples are derived from different distributions. In contrast, the KOLMOGOROV–SMIRNOV GOODNESS-OF-FIT TEST is used when only one sample is available but the larger population distribution is known. [Andrei **Kolmogorov** and Nikolai **Smirnov**]

**König bars** a grating pattern of black and white bars used to assess visual acuity. [Karl Rudolf **König** (1832–1901), German-born French physicist]

**Kopfermann cubes** line drawings of cubes that are perceived as two-dimensional figures rather than as three-dimensional cubes. A hexagon equally divided into six triangles is one example. In this case, gestalt principles of perception have been invoked to explain the compelling perception of two-dimensional triangles, rather than sides of a three-dimensional figure. [Hans **Kopfermann**, 20th-century German physicist and experimental psychologist]

**kopro-** combining form see COPRO-.

**koprolagnia** *n.* see COPROLAGNIA.

**koprophemia** *n.* see COPROPHEMIA.

**KOR** abbreviation for KNOWLEDGE OF RESULTS.

**koro** *n.* a CULTURE-BOUND SYNDROME observed primarily in males in China and southeast Asia. It is an acute anxiety reaction in which the male suddenly fears that his penis is shrinking and will disappear into his abdomen, bringing death. (In females, the fear is focused on the vulva and nip-

ples.) Individuals may also experience shame if they associate the fear with immoral sexual behavior. Also called **jinyinia bemar**; **rok-joo**; **shook yong**; **shuk yang**; **suk-yeong**; **suo yang**.

**Korsakoff's syndrome** a syndrome occurring primarily in cases of severe, chronic alcoholism. It is caused by thiamine (vitamin B<sub>1</sub>) deficiency and damage to the MAMMILLARY BODIES. Patients with Korsakoff's syndrome demonstrate dense anterograde and retrograde AMNESIA, which is thought to be due to lesions in the anterior or DORSOMEDIAL NUCLEI (or both) of the thalamus. Other symptoms include CONFABULATION, lack of insight, apathy, and impoverished conversation. The selective and acute nature of the memory disorder in Korsakoff's syndrome sets it apart from alcoholic dementia (see ALCOHOL-INDUCED PERSISTING DEMENTIA), a syndrome characterized by more global impairments in intellectual functioning that evolve gradually over time. Korsakoff's syndrome often follows an episode of WERNICKE'S ENCEPHALOPATHY (see WERNICKE–KORSAKOFF SYNDROME). Also called **Korsakoff's disease**; **Korsakoff's psychosis**. [first described in 1887 by Sergei **Korsakoff** (1853–1900), Russian neurologist]

**Korte's laws** the laws describing the optimal conditions for the production of apparent motion that occurs when two or more stationary targets are presented in succession. The significant variables include the intensity of the stimuli, as well as their spatial separation, duration, and the interval between presentations. See also APPARENT MOVEMENT. [Adolf **Korte**, German psychologist]

**KP** abbreviation for KNOWLEDGE OF PERFORMANCE.

**KR** abbreviation for KNOWLEDGE OF RESULTS.

**K-R 20** abbreviation for Kuder–Richardson formula 20. See KUDER–RICHARDSON FORMULAS.

**K-R 21** abbreviation for Kuder–Richardson formula 21. See KUDER–RICHARDSON FORMULAS.

**Kraepelin's theory** the concept of DEMENTIA PRAECOX, the disorder now known as SCHIZOPHRENIA, that emphasized the progressive intellectual deterioration (dementia) and the early onset (praecox) of the disorder. [first presented in 1898 by Emil KRAEPELIN]

**Krantz Health Opinion Survey (KHOS)** a questionnaire to measure patient attitudes toward treatment and preferences for different approaches in health care. Participants indicate whether they agree or disagree with each of 16 statements (e.g., “I usually ask the doctor or nurse lots of questions about the procedures during a medical exam”), which are keyed so that high scores represent favorable attitudes toward self-directed care. [developed in 1980 by David S. **Krantz** (1949– ), U.S. medical psychologist, and colleagues at the Uniformed Services University of the Health Sciences, Bethesda, Maryland]

**Krause end bulb** a specialized sensory nerve ending enclosed in a capsule in the skin. It is associated with temperature sensations. [Wilhelm **Krause** (1833–1910), German anatomist]

**Kretschmer typology** a controversial classification of individuals based on a “clear biological affinity” between specific physiques and specific personality tendencies. According to this classification, the short, stocky PYKNIC TYPE tends to be jovial and subject to mood swings; the frail ASTHENIC TYPE is likely to be introversive and sensitive; the muscular ATHLETIC TYPE is usually energetic and aggressive; and the disproportioned DYSPLASTIC TYPE presents

a combination of traits but tends toward the asthenic. These tendencies were attributed to endocrine secretions. [formulated in the 1920s by German psychiatrist Ernst **Kretschmer** (1888–1964)]

**kriging** *n.* a statistical method that uses INTERPOLATION to estimate an unknown value between two known values while minimizing prediction error. For example, a simple form of kriging could estimate that the unknown point halfway between two known points of 1 and 9 would be a value of 5. [Daniel Gerhardus **Krige** (1919–2003), South African geostatistician]

**Kruskal–Shepard scaling** a type of MULTIDIMENSIONAL SCALING applied to judgments of similarity or dissimilarity for pairs of items (e.g., cities). The dissimilarities are represented by distances between items in a highly dimensional space: Larger distances indicate greater dissimilarity. [William Henry **Kruskal** (1919–2005), U.S. statistician; Roger N. **Shepard** (1929– ), U.S. experimental and cognitive psychologist]

**Kruskal–Wallis one-way analysis of variance** a NONPARAMETRIC TEST for assessing whether the MEDIANS of multiple samples of ranked data are equal. It is an extension of the MANN–WHITNEY U TEST, which is conducted when there are only two independent samples. Also called **Kruskal–Wallis test**. [William Henry **Kruskal** (1919–2005) and Wilson Allen **Wallis** (1912–1998), U.S. statisticians]

**KSADS** abbreviation for Kiddie SCHEDULE FOR AFFECTIVE DISORDERS AND SCHIZOPHRENIA.

**KSAOs** abbreviation for KNOWLEDGE, SKILLS, ABILITIES, AND OTHER CHARACTERISTICS.

**K-strategy** *n.* a reproductive strategy that involves a high degree of PARENTAL INVESTMENT in a relatively small number of offspring over an individual's reproductive life, as in human beings and other primates. Populations of K-strategists expand to the maximum size that the habitat can support (its carrying capacity, or **K**). K-strategy implies that a constant, relatively small number of high-quality offspring is more likely to lead to REPRODUCTIVE SUCCESS than producing offspring at the maximum rate possible (see R-STRATEGY).

**Kuder Preference Record** a test used to assess participants' suitability for various fields of employment. For each of 168 items, individuals select their preferred activity from a series of three choices. The test yields percentile scores in 10 vocational areas: clerical, computational, art, music, social service, outdoor, science, persuasive, literary, and mechanical. The **Kuder Career Search** and **Kuder Occupational Interest Survey** are updated versions. [Frederic **Kuder** (1903–2000), U.S. psychologist]

**Kuder–Richardson formulas** two methods, **Kuder–Richardson formula 20 (K-R 20)** and **Kuder–Richardson formula 21 (K-R 21)**, for assessing the INTERNAL CONSISTENCY reliability of a test or subtest made up of DICHOTOMOUS VARIABLES. The K-R 21 requires that all of the dichotomous variables be equally difficult, whereas the K-R 20 does not. For example, a teacher could use the K-R 21 formula to calculate internal consistency reliability for a test of 20

equally difficult items but would use the K-R 20 formula for test items differing in difficulty level. [Frederic **Kuder** (1903–2000) and Marion Webster **Richardson** (1896–1965), U.S. psychologists]

**Kugelberg–Welander disease** see SPINAL MUSCULAR ATROPHY. [Eric **Kugelberg** (1913–1983) and Lisa **Welander** (1909–2001), Swedish neurologists]

**Kumho Tire Co. v. Patrick Carmichael** a case resulting in a 1999 U.S. Supreme Court ruling that extended the GATEKEEPER ROLE of judges to cover both scientific expert testimony, as established in *Daubert v. Merrell Dow Pharmaceuticals Inc.* (see DAUBERT TEST), and nonscientific expert testimony.

**Kundt's rules** the principles that (a) distances divided by graduated lines appear larger than undivided distances and (b) when bisecting a horizontal line using one eye, the observer tends to place the midpoint too near the nasal side of the eye. [August **Kundt** (1839–1894), German physicist]

**kurtosis** *n.* the fourth CENTRAL MOMENT of a PROBABILITY DISTRIBUTION. It is a statistical description of the degree of peakedness of that distribution. For example, the ages of a sample of college freshmen would probably show kurtosis, having a high peak at age 18. See LEPTOKURTIC; MESOKURTIC; PLATYKURTIC.

**kuru** *n.* a progressive, ultimately fatal disease of the central nervous system that historically has affected the Fore people in the highlands of New Guinea. Symptoms include ataxia, tremors, difficulty in walking, and squint (strabismus). It is a PRION DISEASE, similar to CREUTZFELDT–JAKOB DISEASE, transmitted in cannibalistic rituals by eating the brains of individuals previously infected with the causative prion agent.

**Kurzweil Personal Reader** a computer system that reads print and outputs synthesized speech. It is intended for people who cannot read print (e.g., those with such disabilities as severe visual impairment and dyslexia). [Raymond **Kurzweil** (1948– ), U.S. computer scientist and inventor]

**kwashiorkor** *n.* a form of malnutrition caused by inadequate intake of protein (see PROTEIN DEFICIENCY). The symptoms include fluid accumulation in the tissues, liver disorders, impaired growth, distention of the abdomen, and pigment changes in the skin and hair. Cerebral development also may be impaired. Although it may occur at any age, it is most often seen in children up to 4 years old. The condition is most common in very poor countries. See also MARASMUS.

**kymograph** *n.* an instrument for recording temporal data in psychological or physiological research by tracing the variations of a particular parameter on a sheet of paper attached to a revolving drum. The resulting trace on the paper is a **kymogram**. Computer-output systems have largely replaced such instruments.

**kyphosis** *n.* an abnormal outward curvature of the spine at the cervical level, producing a rounded back. This posture is sometimes called **hunchback**. See also LORDOSIS; SCOLIOSIS.

**LAAM** L-alpha-acetyl-methadol: a long-acting OPIOID AGONIST that is a chemical analog of METHADONE. A strong agonist at the mu OPIOID RECEPTOR, it can be used in oral form in the management of opioid dependence because of its ability to suppress physical withdrawal symptoms and block the reinforcing effects of opioids. It has a longer HALF-LIFE (about 72 hours) than methadone and therefore needs to be taken less frequently, a major advantage over methadone (which is taken daily). However, due to its possible adverse effects on heart rate and its interactions with other drugs, LAAM is no longer manufactured in the United States, Europe, and Canada.

**labeled lines** nerve inputs to the brain, each one of which is conceptualized as reporting only one particular type of information.

**labeled-line theory of taste coding** a theory postulating that each GUSTATORY NEURON TYPE comprises a private circuit through which the presence of its associated PRIMARY TASTE quality is signaled. The taste is perceived exclusively as a product of activity in that LABELED LINE; activity in neurons outside the labeled line contributes only NOISE. Compare PATTERN THEORY OF TASTE CODING.

**labeling** *n.* **1.** in psychological assessment, classifying a patient according to a certain diagnostic category. Patient labeling may be incomplete or misleading, because not all cases conform to the sharply defined characteristics of standard diagnostic categories. **2.** medication information provided on a drug container or **package insert** (also called **direction circular** or **package circular**) that specifies indications, side effects, dosages, mechanisms of action, and other information necessary for a physician to prescribe the medication correctly. Drug labeling in the United States is regulated by the U.S. Food and Drug Administration. Also called **prescribing information (PI)**; **professional labeling**.

**labeling theory** the sociological hypothesis that describing an individual in terms of particular behavioral characteristics may have a significant effect on his or her behavior, as a form of SELF-FULFILLING PROPHECY. For example, describing an individual as deviant and then treating him or her as such may result in mental disorder or delinquency. Also called **societal-reaction theory**. See also PRIMARY DEVIANCE.

**la belle indifférence** inappropriate lack of concern about the implications or seriousness of one's physical symptoms, often seen in CONVERSION DISORDER.

**labia** *pl. n. (sing. labium)* four lip-shaped folds of tissue forming part of the female external genitalia (see VULVA). The labia—comprising a larger, outer pair, the **labia majora** (*sing. labium majus*), and a thinner, inner pair, the **labia minora** (*sing. labium minus*)—enclose the clitoris and the openings of the urethra and vagina.

**labial** **1.** *adj.* of or relating to the lips. **2.** *adj.* denoting a speech sound made with the lips, for example, [b], [p], [m], [w], [f], or [v]. If the sound is made with both lips, it is described as BILABIAL; if the sound is made with the lower lip

and the upper teeth, it is termed LABIODENTAL. **3.** *n.* a labial speech sound.

**labile** *adj.* **1.** liable to change, as in LABILE AFFECT. **2.** describing the early stage of memory formation that can be easily disrupted by factors influencing brain activity. —**lability** *n.*

**labile affect** highly variable, suddenly shifting emotional expression.

**labio-** *combining form* lips.

**labiodental** **1.** *adj.* denoting a speech sound made with the lower lip touching or near the upper teeth, such as [f] or [v]. **2.** *n.* a labiodental speech sound. Also called **labial dental**. See LABIAL.

**labor** *n.* the first stage of childbirth, from the dilation of the cervix until the infant's head begins to enter the birth canal. See DELIVERY.

**laboratory-method model** an approach to education in which the role of social interaction is emphasized. The development of personal awareness and interpersonal skills is a major area of concern.

**laboratory research** scientific study conducted in a laboratory or other such workplace, where the investigator has some degree of direct control over the environment and can manipulate the INDEPENDENT VARIABLES. Although laboratory research generally has greater INTERNAL VALIDITY than FIELD RESEARCH does, it tends to be less generalizable to the real world (i.e., has less EXTERNAL VALIDITY). See EXPERIMENTAL RESEARCH.

**Labor Management Relations Act** a series of amendments to the NATIONAL LABOR RELATIONS ACT that were passed in 1947 to adjust the power balance between unions and employers in the United States, the previous system being regarded as too restrictive of management. The act identified and prohibited certain UNFAIR LABOR PRACTICES of both unions and employers, created the Federal Mediation and Conciliation Service to aid in resolution of disputes, and provided a mechanism for dealing with strikes that create a national emergency. Sponsored by U.S. lawyer and politician Robert Alphonso Taft (1889–1953) and U.S. politician Fred Allan Hartley Jr. (1902–1969), it is also known as the **Taft–Hartley Act**.

**labor relations** **1.** relations between employers and employees or between employers and unions, especially within the context of COLLECTIVE BARGAINING. **2.** a multidisciplinary field of study devoted to understanding and managing employee–employer or union–employer relations. Also called **industrial relations**.

**labor turnover** see TURNOVER.

**labor union** see UNION.

**labyrinth** *n.* in anatomy, the complex system of cavities, ducts, and canals within the temporal bone of the skull that makes up the inner ear. The **bony** (or **osseous**) **labyrinth** is a system of bony cavities that houses the

**membranous labyrinth**, a membrane-lined system of ducts containing the receptors for hearing and balance.

**labyrinthine sense** see SENSE OF EQUILIBRIUM.

**labyrinthitis** *n.* infection or inflammation of the inner ear, which may result in dizziness, loss of balance, or partial or temporary loss of hearing.

**laceration** *n.* a jagged tear or cut: a wound with rough, irregular edges.

**lack of fit** the degree to which the values predicted by a model—typically, one developed in REGRESSION ANALYSIS, STRUCTURAL EQUATION MODELING, or CONFIRMATORY FACTOR ANALYSIS—diverge from the corresponding empirical values. A large, significant value from a GOODNESS-OF-FIT test indicates a poorly fitting model.

**lacrimal gland (lachrymal gland)** see EXOCRINE GLAND.

**lacrimal reflex** the secretion of tears in response to a variety of stimuli, including those that irritate receptors in the nose.

**lacrimation** *n.* crying, especially excessive crying.

**lactate dehydrogenase (LDH)** any of a group of enzymes that catalyze reversibly the conversion of lactate to pyruvate. They are found especially in the liver, kidneys, skeletal muscles, and myocardium. Increased blood levels may indicate injury to or disease of these organs. Also called **lactic dehydrogenase**.

**lactation** *n.* **1.** the formation and release of milk by the MAMMARY GLANDS. It is a form of NURSING that occurs only in female mammals and is divided into **lactogenesis**—the initiation of milk production—and **galactopoiesis**—the subsequent maintenance of milk production and secretion. The former is itself divided into **Lactogenesis Stage I**, which in humans generally lasts from mid-pregnancy through 2 days following childbirth, and **Lactogenesis Stage II**, which occurs within 3 to 8 days after birth. In Lactogenesis Stage I, the various mammary cells enlarge, reorganize into large clumps resembling grapes, and start producing a nutrient- and antibody-rich fluid known as COLOSTRUM that is eventually released during the initial days of nursing. In Lactogenesis Stage II, the enlarged mammary cells fill with copious amounts of mature milk once the maternal placenta is expelled and no longer introducing PROGESTERONE, which inhibits milk formation, into the bloodstream.

In the subsequent galactopoiesis phase, beginning around 9 days after birth, the mammary cells continuously produce mature milk in response to its repeated removal by the suckling infant or by a breast pump. Lactation is regulated primarily by the hormones PROLACTIN, which facilitates and sustains milk production, and OXYTOCIN, which stimulates the MILK LETDOWN REFLEX to facilitate milk excretion. Lactation is an energy-intensive process that places significant metabolic demands on the female system, requiring not only increased caloric intake but also considerable amounts of calcium and other minerals. See also GALACTORRHEA. **2.** the period during which this process occurs.

**lacto-** combining form milk.

**lactogenesis** *n.* see LACTATION.

**lactogenic hormone** see PROLACTIN.

**lactotroph** *n.* see PROLACTIN.

**lactotropic hormone** see PROLACTIN.

**lactotropin** *n.* see PROLACTIN.

**lacuna** *n.* (*pl.* **lacunae**) a gap or break, such as a gap in memory. —**lacunar** *adj.*

**lacunar amnesia** see LOCALIZED AMNESIA.

**lacunar stroke** a STROKE caused by small INFARCTIONS resulting from obstruction of small arterioles branching directly off large vessels in the brain. Lacunar strokes account for about 20% of all strokes.

**LAD** abbreviation for LANGUAGE ACQUISITION DEVICE.

**laddering** *n.* a knowledge elicitation technique used in interviews to impose a systematic framework upon questioning so as to reveal complex themes across answers. In laddering, a respondent replies to a series of “why?” probes, thus requiring him or her to expose and explain choices or preferences and justify behavior in terms of goals, values, and personal constructs. Laddering is concerned with establishing links between concepts elicited from the participant (e.g., attitudes and beliefs associated with a particular consumer product) and provides greater scope for probing salient issues while optimizing the often limited time available with respondents.

**Ladd-Franklin theory** a formerly influential but now superseded theory of color vision. It is based on the notion that light of certain wavelengths causes substances to be released from a highly developed photosensitive molecule in the retina and that these substances stimulate the retina, causing the perception of red, green, or blue. [introduced in 1929 by Christine LADD-FRANKLIN]

**lag** *n.* **1.** a delay between a stimulus and a response. **2.** a delay between the time a receptor is stimulated and the conscious awareness of the sensation.

**lag effect** a cognitive phenomenon in which long-term retention of to-be-learned information improves with increased separation (lag) between repeated presentations of the information within a single period of study. Such lag is obtained by interspersing the material of interest with additional material or by increasing the number of overall elements between item repetitions. For example, a student preparing for a Spanish vocabulary exam would remember more from a study session by reviewing one long list of words multiple times instead of dividing it into three smaller lists because there would be a longer lag between the repeated presentations of each word in the former method. Although some use the terms synonymously, the SPACING EFFECT is an instance of the lag effect, referring to the improvement in memory that occurs when repetitions of material are distributed over multiple study sessions rather than when the material is studied in a single session (MASSSED PRACTICE). One explanation of the lag effect is the **differential-organization theory**, which proposes that people organize presented material into overlapping groups (e.g., of interassociated words); that as lag increases, the groups overlap less and less; and that the probability of recalling a given word thus increases as a function of the number of different groups of words with which it has been associated. See also PRIMACY EFFECT; RECENCY EFFECT. [identified in 1967 by Arthur W. MELTON]

**lagophthalmos (lagophthalmus)** *n.* a disorder marked by the inability to close the eyelids completely. The condition may be related to a trauma, facial palsy, or severe skin disease; it may also occur if too much skin is removed from the upper eyelid during plastic surgery.

**laissez-faire leader** the type of leader who provides little guidance for group activities, interacts only minimally with the group members, and provides input only when directly asked. Research suggests that groups with laissez-faire leaders are less effective than are groups with DEMOCRATIC LEADERS or with AUTHORITARIAN LEADERS. [defined by Kurt LEWIN and his colleagues in experimental studies of leadership styles]

**-lalia** *suffix* abnormal or disordered speech (e.g., ECHOLALIA).

**lalling** *n.* an infantile form of speech characterized by the omission or substitution of sounds, particularly the substitution of the [l] sound for other sounds that are more difficult for the speaker to produce, for example, saying “lellow” for *yellow*. Lalling is considered a speech disorder when it persists beyond the age at which accurate articulation should have been acquired. See also PHONOLOGICAL DISORDER.

**lalopathy** *n.* any form of speech disorder.

**L-alpha-acetyl-methadol** *n.* see LAAM.

**Lamarckism** *n.* the theory that changes acquired by an organism during its lifetime—for example, through use, disuse, or injury of particular parts—can be inherited by its offspring. Extensive research over centuries failed to find proof of such **inheritance of acquired characteristics**; however, evidence now suggests that epigenetic modifications (i.e., natural or environmentally induced changes to DNA expression that occur during an organism’s lifetime) can result in acquired characteristics that may be inherited by offspring. Also called **use-and-disuse theory**. [Jean-Baptiste **Lamarck** (1744–1829), French natural historian] —**Lamarckian** *adj.*

**Lamaze method** a variation of the method of NATURAL CHILDBIRTH in which the mother learns about childbirth anatomy and physiology and practices pain management through relaxation, massage, and breathing exercises. The mother is aware and active during labor, guided by her partner, who shares in the birth experience (e.g., as a supportive coach). The method neither encourages nor discourages the use of medication during labor and delivery. See also LEBoyer TECHNIQUE. [Ferdinand **Lamaze** (1890–1957), French obstetrician]

**lambda 1.** (symbol:  $\lambda$ ) see EIGENVALUE. **2.** (symbol:  $\Lambda$ ) see WILKS’S LAMBDA.

**lambda model** ( $\lambda$  model) see EQUILIBRIUM-POINT MODEL.

**Lambert’s law** the principle that the ILLUMINANCE of a surface lit by light falling on it perpendicularly from a point source is inversely proportional to the square of the distance between the surface and the source. [Johann Heinrich **Lambert** (1728–1777), French-born Prussian mathematician]

**lamellipodium** *n.* (*pl.* lamellipodia) a sheetlike extension of a cell, for example, of the GROWTH CONE of a neuron.

**laminar organization** the horizontal layering of cells found in some brain regions. See CORTICAL LAYERS.

**lamotrigine** *n.* an ANTICONVULSANT drug used as an adjunct in the treatment of adults with partial seizures and some generalized seizures and for maintenance treatment of bipolar disorder. Although ineffective in treating acute manic episodes, it has gained acceptance as a single-drug treatment for acute bipolar depression and rapid-cycling bi-

polar II disorder. Serious skin reactions, including STEVENS–JOHNSON SYNDROME, have been reported at the start of therapy, particularly in children. U.S. trade name: **Lamictal**.

**LAMP** abbreviation for LEARNING ABILITIES MEASUREMENT PROGRAM.

**Landau–Kleffner syndrome** a rare childhood neurological disorder of unknown cause that is characterized by the sudden or gradual development of aphasia (inability to understand or express language) and an abnormal electroencephalogram (see ELECTROENCEPHALOGRAPHY). The syndrome usually occurs in children between the ages of 5 and 7 years who develop normally but then lose their language skills for no apparent reason. Many children with the disorder experience seizures, which generally disappear by adulthood. [first described in 1957 by William M. **Landau** and Frank R. **Kleffner**]

**Landau reflex** a normal reaction observed in infants between the ages of 3 and 12 months: When the child is supported horizontally in the prone position, the head rises and the back arches. Absence of the reflex is a sign of a neurological disorder, such as cerebral palsy or motor neuron disease.

**Land effect** a demonstration used to develop the RETINEX THEORY of color vision. To produce the effect, a multicolored scene is photographed with black and white film, once through a red filter and once through a blue–green filter. When the resulting images are projected simultaneously onto a screen through the opposite filter used to photograph the image, the original multicolored scene is perceived. [Edwin Herbert **Land** (1909–1991), U.S. inventor]

**landmark** *n.* an external reference point that is a major component of a COGNITIVE MAP. The design and placement of landmarks can significantly affect way-finding behavior. See ENVIRONMENTAL COGNITION; LEGIBILITY.

**Landmark Forum** see ERHARD SEMINAR TRAINING.

**Landolt circles** a set of circles with gaps of varying size, used to test visual acuity. Also called **Landolt Cs**. [Edmund **Landolt** (1846–1926), French ophthalmologist]

**landscaped office** a modification of the OPEN-OFFICE DESIGN in which emphasis is given to the interaction of people, such that the arrangement of work spaces is based on patterns of communication and facilitation of work flow. Landscaped offices typically place supervisors near workers and group people who communicate regularly with one another to perform their job duties in the same or adjacent spaces. Portable screens or partitions and other movable items, such as planters or cabinets, are used to separate areas and divide them into a variety of different yet easily accessible work spaces.

**Land theory of color vision** see RETINEX THEORY. [Edwin Herbert **Land** (1909–1991), U.S. inventor]

**Langdon Down’s disease** see DOWN SYNDROME.

**Langerhans cells** dendritic cells found in the epidermis. [Paul **Langerhans** (1847–1888), German anatomist]

**language** *n.* **1.** a system for expressing or communicating thoughts and feelings through speech sounds or written symbols. See NATURAL LANGUAGE. **2.** the specific communicative system used by a particular group of speakers, with its distinctive vocabulary, grammar, and phonological system. **3.** any comparable nonverbal means

of communication, such as SIGN LANGUAGE or the languages used in computer programming (see ARTIFICIAL LANGUAGE).

**language acquisition** the process by which children learn language. Although often used interchangeably with LANGUAGE DEVELOPMENT, this term is preferred by those who emphasize the active role of the child as a learner with considerable innate linguistic knowledge.

**language acquisition device (LAD)** a hypothetical faculty used to explain a child's ability to acquire language. In the early model proposed by U.S. linguist Benjamin Lee Whorf (1897–1941), the LAD is an inherited mechanism that enables children to develop a language structure from linguistic data supplied by parents and others. In Noam CHOMSKY's reinterpretation, however, the LAD contains significant innate knowledge that actively interprets the input: Only this can explain how a highly abstract COMPETENCE in language results from a relatively deprived input. See NATIVISTIC THEORY.

**language acquisition support system (LASS)** the adults and older children who help a young child to acquire language. Children learn language in and from conversation: Family members talk to them, tailoring their language to the children's level of comprehension and often using higher pitch and exaggerated intonation. The LASS is conceptualized as essential to language learning and may interact with the LANGUAGE ACQUISITION DEVICE of the younger child. [proposed by Jerome Seymour BRUNER]

**language arts** the part of a school curriculum that teaches the language skills of listening, speaking, reading, writing, spelling, and handwriting.

**language center** any area of the cerebral cortex, such as BROCA'S AREA or WERNICKE'S AREA, that is involved in spoken or written language.

**language contact** the sociolinguistic situation in which two or more language communities come into contact for reasons of geographical proximity, commerce, or politics, leading to mutual influence in lexical or structural features. See also CONTACT LANGUAGE.

**language death** the extinction of a language. The usual cause is a gradual shift to the use of another language in the younger generations of a SPEECH COMMUNITY, so that the original language dies out with the older generation. In the early 21st century, it has been estimated that languages are dying out at a rate of two or three every month. By other estimates, which put the number of languages currently spoken at more than 6,000, roughly half will disappear by the end of the century. See LANGUAGE SHIFT.

**language deficit** an absence, loss, or delay in the normal speech and language development of a child due to some neurological dysfunction.

**language delay** **1.** the acquisition of spoken language significantly later than is typical. The delay may or may not be symptomatic of abnormal language development. **2.** a synonym for SPECIFIC LANGUAGE IMPAIRMENT.

**language development** the process by which children learn to use language. Although this term is often used interchangeably with LANGUAGE ACQUISITION, it is preferred by those who wish to emphasize the continuity of language development with cognitive and social development. See also PRESPEECH DEVELOPMENT.

**language disability** any significant difficulty with or

impairment of language development or function. When the difficulty or impairment is restricted to a specific aspect of language development or a specific language function, it is termed **specific language disability**. When the difficulty or impairment is more pervasive and not restricted to a particular aspect or function, the term **general language disability** is used.

**language disorder** see SPEECH AND LANGUAGE DISORDER.

**language-experience approach** a method of reading instruction that uses the child's spoken language to supply the words and stories for teaching reading. In this approach, the child is encouraged to describe personal experiences, which are recorded by the teacher. They then read these written stories together until the child can associate written and spoken forms of words and read independently. [introduced in the 1960s by Roach Van Allen (d. 1998)]

**language learning disability (LLD)** see SPECIFIC LANGUAGE IMPAIRMENT.

**language localization** the processing of various functions of spoken and written words in particular areas of the brain. Since 1861, when Paul BROCA postulated that speech processing was localized near the third frontal convolution of the left hemisphere, research has identified numerous other cortical centers associated with visual and auditory language processing, as well as neural pathways linking these areas. See BROCA'S AREA; WERNICKE'S AREA.

**language loyalty** a strong preference for using a minority language demonstrated by a SPEECH COMMUNITY or any of its members.

**language maintenance** the continued use of the ethnic language by an immigrant or minority community across successive generations.

**language-origin theory** speculation about the origin and early development of language in the human species. The numerous early theories on this subject tend to fall into three main categories: (a) those that see language developing from conscious imitation by early humans of nonhuman animal noises and other natural sounds; (b) those that see it emerging from the involuntary sounds produced to express rage, pleasure, hunger, and so on; and (c) NATIVISTIC THEORIES that see the language faculty as innate to human beings and postulate an inherent relation between sound and meaning (see PHONETIC SYMBOLISM). Modern research tends to ask whether language is, in fact, a uniquely human capacity and, if so, whether it evolved in response to various selective adaptations. See also SPECIES SPECIFICITY OF LANGUAGE.

**language pathology** see SPEECH AND LANGUAGE PATHOLOGY.

**language planning** a deliberate attempt by a government to change the way a language is used by a community. A policy of raising the status of a language (**status planning**) is often adopted in postcolonial situations, when the new government may take steps to promote the use of indigenous languages, rather than the colonial language, in government and education. This may be accompanied by **corpus planning**, which refers to attempts to "improve" a language, usually by standardizing its structures, expanding or "purifying" its vocabulary, and reforming (or, in some cases, creating) its writing system.

**language retardation** delayed acquisition of language

skills, manifested, for example, by single-word utterances or unintelligible sounds, due to neurological causes.

**language shift** a movement in the language preference of an immigrant or minority community from its ethnic language to the majority language, eventually resulting in monolingualism in the majority language. See LANGUAGE DEATH.

**language socialization** the process by which children are socialized into the language practices, such as particular DISCOURSE ROUTINES, of the family and community.

**language therapy** see SPEECH THERAPY.

**language transfer** in second-language acquisition, the tendency to transfer the phonology, syntax, and semantics of the native language into the learning of the second language. **Negative transfer** (or **interference**) occurs when differences between the two languages' structures lead to systematic errors in the learning of the second language or to FOSSILIZATION. **Positive transfer** occurs when areas of similarity between the two languages facilitate learning. See CONTRASTIVE ANALYSIS; INTERLANGUAGE.

**language universal 1.** a linguistic feature that is common to all known human languages, such as words, sentences, or (more specifically) a set of pronouns or a set of color words. Such **substantive universals** can be formulated on the basis of observations across multiple languages, yielding an empirically testable hypothesis that "all languages have X." **2.** in the linguistics of Noam CHOMSKY, a fundamental formal property that is built into the rule structure of all or nearly all language systems. An example is the rule observed by U.S. linguist Joseph H. Greenberg (1915–2001) that "In declarative sentences with nominal subject and object, the predominant order is almost always one in which the subject precedes the object." Unlike substantive universals, these **formal universals** cannot be explained by universal features of human life or the physical environment. In Chomsky's view, they constitute a UNIVERSAL GRAMMAR that is innate to human beings and inseparable from the language faculty itself. Also called **linguistic universal**; **universal**.

**languishing** *n.* the condition of absence of mental health, characterized by ennui, apathy, listlessness, and loss of interest in life. Compare FLOURISHING. —**languish** *vb.*

**Lanterman Developmental Disabilities Act** Californian legislation, introduced in 1969, that sets forth the rights of people with developmental disabilities and the structure of the system for planning, coordinating, and delivering services and supports to them. This act is noteworthy because, unlike similar statutes in most U.S. states, it has been interpreted judicially as establishing an entitlement to services. In 1990, a class action suit (*William Cofelt v. California Department of Developmental Services*) criticized and challenged California's implementation of Lanterman; the settlement agreement in 1994 (the **Coffelt decision**) ordered a reduction in the use of institutional settings and movement of institutional residents to community settings, along with specific changes to processes for individual planning of services and supports. The reduction in institutionalization mandated by the Coffelt decision stalled, however, and in 2001 another suit was filed challenging its implementation. The case (*Capitol People First v. California Department of Developmental Services*) was settled in 2009, with the Department of Developmental Services agreeing to develop, support, fund sufficiently, and publi-

cize the existence of services to help people move from institutions to community settings.

**lapsus linguae** see SLIP OF THE TONGUE.

**large-sample method** see ASYMPTOTIC METHOD.

**Lariam** *n.* a trade name for MEFLOQUINE.

**Larodopa** *n.* a trade name for LEVODOPA.

**laryngeal framework surgery** see THYROPLASTY.

**laryngeal neoplasm** a cancerous or noncancerous growth or tumor on the larynx or any of its parts, which may affect breathing, swallowing, or speech. See PHONOSURGERY.

**laryngeal paralysis** loss of use or feeling of one or both of the vocal cords caused by disease or injury to the nerves of the larynx.

**laryngeal reflex** the reaction to laryngeal irritation manifested by coughing.

**laryngectomy** *n.* the surgical removal of all or a part of the larynx, commonly because of laryngeal cancer.

**laryngopharynx** *n.* the portion of the PHARYNX that lies below the hyoid bone (a small, U-shaped bone below and supporting the tongue). —**laryngopharyngeal** *adj.*

**larynx** *n.* (*pl.* **larynges**) the muscular and cartilaginous structure at the top of the trachea (windpipe) and below the tongue that contains the VOCAL CORDS. Movements of the cartilages in the walls of the larynx, controlled by the laryngeal muscles, alter the tension of the vocal cords and change the frequency of the sound (thus, the pitch) emitted by the cords when they vibrate. —**laryngeal** *adj.*

**LASS** acronym for LANGUAGE ACQUISITION SUPPORT SYSTEM.

**Lasthénie de Ferjol syndrome** a type of PATHOMIMICRY consisting of life-threatening hemorrhages caused by secretly self-inflicted wounds. It is linked with the pathology of mourning and introjection: Patients with this disorder have all experienced traumatic losses. [named in 1967 by French hematologist Jean Bernard and colleagues after the heroine in *Une histoire sans nom*, a novel by French writer Jules Barbey D'Aureville (1808–1889)]

**LAT** abbreviation for LESCH'S ALCOHOLISM TYPOLOGY.

**latah (lattah)** *n.* a CULTURE-BOUND SYNDROME first observed in Malaysia and Indonesia, although similar syndromes have been found in many other parts of the world. The condition primarily affects middle-aged women and is characterized by an exaggerated startle reaction. Its major symptoms, besides fearfulness, are imitative behavior in speech (see ECHOLALIA) and body movements (see ECHOPRAXIA), a compulsion to utter profanities and obscenities (see COPROLALIA), command obedience, and disorganization. See also IMU; JUMPING FRENCHMEN OF MAINE SYNDROME; MYRIACHIT.

**latchkey children** children who return after school to a home that is without adult supervision because their parents or caregivers work. The name alludes to the idea that the children have their own key with which to let themselves into the empty home after school. Also called **self-care children**.

**late bilingualism** see EARLY BILINGUALISM.

**late luteal phase dysphoric disorder** see PREMENSTRUAL DYSPHORIC DISORDER.



**latency stage** in classical psychoanalytic theory, the stage of PSYCHOSEXUAL DEVELOPMENT in which overt sexual interest is sublimated and the child's attention is focused on skills and peer activities with members of his or her own sex. This stage is posited to last from the resolution of the OEDIPUS COMPLEX, at about age 6, to the onset of puberty. Also called **latency**; **latency period**; **latency phase**; **latent stage**.

**latent addition period** a brief time span when a second stimulus can add to the persisting effects of a preceding stimulus. The period varies with the size of the nerve and synaptic factors but lasts approximately 0.5 ms.

**latent class analysis (LCA)** a method for finding discrete subgroups of related cases (**latent classes**) from multivariate CATEGORICAL DATA. For example, a health researcher might use latent class analysis to determine into which one of 10 diagnostic categories to place each individual in a group on the basis of the presence or absence of several distinct symptoms. The procedure is analogous to CLUSTER ANALYSIS in that, from a given sample of cases measured on several variables, the researcher attempts to identify a smaller number of underlying dimensions upon which to classify them. The use of a categorical LATENT VARIABLE, however, is what distinguishes latent class analysis from more traditional clustering approaches such as FACTOR ANALYSIS, which involve continuous latent variables. Also called **latent class modeling**.

**latent construct** see LATENT VARIABLE.

**latent content 1.** the hidden or disguised meanings, wishes, and ideas beneath the MANIFEST CONTENT of any utterance or other form of communication. **2.** in psychoanalytic theory, the unconscious wishes seeking expression in dreams or fantasies. This unconscious material is posited to encounter censorship (see CENSOR) and to be distorted by the DREAM-WORK into symbolic representations to protect the EGO. Through DREAM ANALYSIS, the latent content may be uncovered. See also DREAM CENSORSHIP.

**latent factor** see LATENT VARIABLE.

**latent goal** an objective of a program or organization that is not publicly stated, although it may be known to the staff. The term is also applied to functions that result from the attempt to obtain MANIFEST GOALS but are not apparent or planned in advance.

**latent homosexuality** gay or lesbian tendencies that have never been expressed overtly; they are usually unrecognized or actively denied (i.e., repressed) by the individual. Also called **unconscious homosexuality**.

**latent inhibition** retardation of CLASSICAL CONDITIONING as a result of prior exposures to a CONDITIONED STIMULUS before it is paired with an UNCONDITIONED STIMULUS. Also called **conditioned stimulus preexposure effect**. Compare UNCONDITIONED STIMULUS PREEXPOSURE EFFECT.

**latent learning** learning that is acquired without conscious effort, awareness, intention, or reinforcement and is not manifested as a change in performance until a specific need for it arises. For example, a student writing an exam may be able to cite a quotation encountered earlier accurately without having made an effort previously to learn it. Among nonhuman animals, a rat allowed to explore a maze without reward will later learn to find the goal more rapidly than a rat without prior exposure to the maze does. See also INCIDENTAL LEARNING. [first described by Edward C. TOLMAN]

**latent need** a need that is assumed to be present in a person and determines behavior but is not in that person's conscious awareness.

**latent stage** see LATENCY STAGE.

**latent structure analysis** any of various statistical procedures that attempt to explain relationships among observed variables in terms of underlying LATENT VARIABLES, whether continuous or categorical. Examples include FACTOR ANALYSIS, LATENT CLASS ANALYSIS, and STRUCTURAL EQUATION MODELING. Also called **latent structure modeling**.

**latent trait theory** a general psychometric theory contending that observed traits, such as intelligence, are reflections of more basic unobservable traits (i.e., latent traits). Several quantitative models (e.g., ITEM RESPONSE THEORY, FACTOR ANALYSIS) have been developed to allow for the identification and estimation of these latent traits from manifest observations.

**latent variable** a theoretical entity or construct that is used to explain one or more MANIFEST VARIABLES. Latent variables cannot be directly observed or measured but rather are approximated through various measures presumed to assess part of the given construct. For example, suppose a researcher is interested in student conscientiousness. Because conscientiousness is a concept that cannot be directly evaluated, the researcher might develop a survey containing items pertaining to behavior indicative of conscientiousness, such as consistently attending classes, turning in assignments on time, engaging in school-sponsored fundraising activities, and so forth. Participants' responses could then be analyzed to identify patterns of interrelationships from which the values of the latent variable of conscientiousness are inferred. Also called **latent construct**; **latent factor**. See also FACTOR ANALYSIS; STRUCTURAL EQUATION MODELING.

**late-onset schizophrenia** a psychotic state that starts after middle age (typically after age 45). It is believed that those with late-onset schizophrenia experience more POSITIVE SYMPTOMS (particularly persecutory delusions and visual, tactile, and auditory hallucinations) and fewer NEGATIVE SYMPTOMS than do those with early-onset schizophrenia.

**late paraphrenia** any delusional disorder with onset after age 60. Late paraphrenia is used as a diagnostic entity in Europe and Britain. Also called **late-onset paraphrenia**.

**lateral** *adj.* toward the side of the body or of an organ. Compare MEDIAL. —**laterally** *adv.*

**lateral bundle** a bundle of nerve fibers in the dorsolateral spinal cord that carry impulses from pain- and temperature-sensory end organs.

**lateral cervical nucleus** a part of the LEMNISCAL SYSTEM, appearing as a small mass of gray matter beneath the MEDULLA OBLONGATA. Axons from the lateral cervical nucleus project to the MEDIAL LEMNISCI.

**lateral confusion** see MIXED LATERALITY.

**lateral corticospinal tract** the larger of the two subdivisions of the CORTICOSPINAL TRACT, the other being the anterior corticospinal tract. It originates on either side of the brain, in MOTOR AREAS of the cerebral cortex, and its fibers cross the midline at the PYRAMID of the medulla oblongata to descend laterally in the white matter on the con-

tralateral sides of the spinal cord. The tract has an important influence on spinal motor neurons, especially those controlling fine movements of distal muscles.

**lateral difference** the difference between the two cerebral hemispheres in controlling various behaviors or serving cognitive functions.

**lateral dominance** see DOMINANCE; HEMISPHERIC LATERALIZATION.

**lateral fissure** see LATERAL SULCUS.

**lateral geniculate nucleus (LGN)** either of a pair of NUCLEI that protrude slightly from each side of the thalamus to the rear. Each LGN receives the fibers of the retinal ganglion cells and relays information to the VISUAL CORTEX via OPTIC RADIATIONS. Also called **lateral geniculate body**. See MAGNOCELLULAR SYSTEM; PARVOCELLULAR SYSTEM. See also MEDIAL GENICULATE NUCLEUS.

**lateral gyrus** a convolution in the surface of the brain located in the area of the CINGULATE CORTEX above the CORPUS CALLOSUM.

**lateral hypothalamic syndrome** a four-stage pattern of recovery from lesions of the LATERAL HYPOTHALAMUS induced in nonhuman animals. The first stage is marked by inability to eat and drink (aphagia and adipsia), and without assistance (including forced feeding), the animal is likely to die. The second stage includes a period of continued inability to drink and poor appetite for food (adipsia-anorexia), when only wet, palatable foods are accepted. In the third stage, the animal will eat hydrated dry food but continues to avoid water intake and may suffer dehydration. Recovery is the fourth stage, in which new, altered feeding and drinking habits are established and the animal maintains a stable, albeit lower, body weight. Compare VENTROMEDIAL HYPOTHALAMIC SYNDROME.

**lateral hypothalamus (LH)** the region of the hypothalamus that may be involved in the regulation of eating. Lesions of the lateral hypothalamus in animals result in fasting and weight loss. Stimulation of that part of the brain increases food intake.

**lateral inhibition** in perception, a mechanism for detecting contrast in which a sensory neuron is excited by one particular receptor but inhibited by neighboring (lateral) receptors. In vision, for example, lateral inhibition is seen in neurons that respond to light at one position but are inhibited by light at surrounding positions.

**laterality** *n.* the preferential use of one side of the body for certain functions, such as eating, writing, and kicking. See also HANDEDNESS; MIXED LATERALITY.

**lateralization** *n.* **1.** one-sided preferences, such as HANDEDNESS, EYE DOMINANCE, and FOOTEDNESS. Observed more frequently in humans than in other primates, lateralization is manifested in the way tasks are performed and can also be inferred from the effects of localized brain damage. DIRECTIONAL CONFUSION and DYSLLEXIA may be diagnosed through lateralization tests. See also HEMISPHERIC LATERALIZATION; SPEECH LATERALIZATION. **2.** in audition, see AUDITORY LOCALIZATION.

**lateralized readiness potential (LRP)** an EVENT-RELATED POTENTIAL that is a measure of the difference in activation between the left and right motor areas of the brain. This potential is taken to indicate preparation to respond with one hand or the other, because each hand is controlled by the contralateral hemisphere.

**lateral lemniscus** a bundle of nerve fibers running from auditory nuclei in the brainstem upward through the PONS and terminating in the INFERIOR COLLICULUS and MEDIAL GENICULATE NUCLEUS. It is part of the LEMNISCAL SYSTEM.

**lateral-line system** a sensory system, found in many kinds of fish and some amphibians, that informs the animal of water motion in relation to the body surface.

**lateral lisp** see LISP.

**lateral olfactory tract** a bundle of axons of MITRAL CELLS that forms the primary communication between the olfactory system and portions of the brain. See also OLFACTORY TRACT; TUFTED CELL.

**lateral posterior nucleus** a group of visually responsive neurons in the THALAMUS that are used for brightness discrimination. They project to several areas in the occipital and parietal lobes.

**lateral preoptic area (IPOA)** a region of the anterior hypothalamus involved in reproductive PHOTOPERIODISM and sleep regulation.

**lateral rectus** an extrinsic EYE MUSCLE that rotates the eyeball laterally (i.e., outward, away from the midline). Also called **external rectus**.

**lateral social comparison** see SOCIAL COMPARISON THEORY.

**lateral specialization** the development of specialized capabilities in either the right or the left cerebral hemisphere. Examples include the tendency for speaking, writing, or calculation to involve the left hemisphere and for nonverbal ideation and spatial construction to involve the right hemisphere.

**lateral spinothalamic tract** see SPINOTHALAMIC TRACT.

**lateral sulcus** a prominent groove that runs along the lateral surface of each CEREBRAL HEMISPHERE, separating the TEMPORAL LOBE from the FRONTAL LOBE and PARIETAL LOBE. Also called **fissure of Sylvius**; **lateral fissure**; **Sylvian fissure**.

**lateral thalamic nucleus** either of a pair of large masses of cell bodies, one on each side of the THALAMUS, that relay incoming sensory impulses. The lateral nuclei are the most recently evolved parts of the thalamus.

**lateral thinking** creative thinking that deliberately attempts to reexamine basic assumptions and change perspective or direction to provide a fresh approach to solving a problem. This term is often used synonymously with DIVERGENT THINKING. [defined by British psychologist Edward de Bono (1933– )]

**lateral ventricle** a chamber of complex shape that lies within each cerebral hemisphere in the brain and serves as a reservoir of cerebrospinal fluid (see VENTRICLE). Each lateral ventricle communicates with the THIRD VENTRICLE at a point near the thalamus.

**later life adjustment** adaptation to stress caused by events associated with life as an older adult, including chronic disease, familial loss, and lifestyle changes.

**lateropulsion** *n.* a symptom of certain disorders of the central nervous system (e.g., parkinsonism) in which the individual makes involuntary sidewise movements.

**lateroventral nucleus** one of a group of relay nuclei

in the THALAMUS that transmit impulses from the cerebellum to the MOTOR CORTEX for coordination of muscular movements. Also called **ventral lateral nucleus**.

**late-selection theory** any theory of attention proposing that selection occurs after stimulus identification. According to late-selection theory, within sensory limits, all stimuli—both attended and unattended—are processed to the same deep level of analysis until stimulus identification occurs; subsequently, only the most important stimuli are selected for further processing. Compare EARLY-SELECTION THEORY.

**Latin square** a type of WITHIN-SUBJECTS DESIGN in which treatments, denoted by Latin letters, are administered in sequences that are systematically varied such that each treatment occurs equally often in each position of the sequence (first, second, third, etc.). The number of treatments administered must be the same as the number of groups or individual participants receiving them. For example, for an experimental design involving four treatments (A, B, C, and D) and four people, one person might receive Treatment A, then B, then C, and then D; a second person might receive them in sequence B, C, D, and A; a third person in sequence C, D, A, and B; and a fourth person in sequence D, A, B, and C. It is important to note that although Latin squares control for ORDER EFFECTS they do not control for CARRYOVER EFFECTS or PRACTICE EFFECTS. See also BALANCED LATIN SQUARE; GRAECO-LATIN SQUARE.

**latitude of acceptance** in SOCIAL JUDGMENT THEORY, a range of attitudinal positions that includes a person's preferred position and the range of positions that he or she considers acceptable. See also LATITUDE OF NONCOMMITMENT; LATITUDE OF REJECTION.

**latitude of noncommitment** in SOCIAL JUDGMENT THEORY, a range of attitudinal positions that a person considers to be neither acceptable nor objectionable. See also LATITUDE OF ACCEPTANCE; LATITUDE OF REJECTION.

**latitude of rejection** in SOCIAL JUDGMENT THEORY, a range of attitudinal positions that a person rejects. See also LATITUDE OF ACCEPTANCE; LATITUDE OF NONCOMMITMENT.

**lattah** *n.* see LATAH.

**Latuda** *n.* a trade name for LURASIDONE.

**laudanum** *n.* a mixture of alcohol and opium once commonly used as an analgesic and anesthetic. The mixture was introduced around 1530 by German alchemist and physician Paracelsus (1493–1541) and was widely consumed in 18th-century England.

**laughing gas** see NITROUS OXIDE.

**laughter** *n.* vocal expression of amusement, enjoyment, or derision, characterized by inspiratory and expiratory movements occurring in rapid succession. Laughter is pleasurable because it serves to release tension built up when people listen to an amusing story or watch an amusing event (see RELEASE THEORY OF HUMOR). Laughter may also result when states of threat occur in a safe context (see AROUSAL JAG) or from an abrupt resolution of a cognitive incongruity. In psychoanalytic theory, laughter may be viewed as a defense against crying or embarrassment. Unrestrained or paroxysmal **laughing spells** have been found to precipitate cataplectic attacks, to be a common manifestation in manias, and to be an occasional symptom of psychomotor seizures among children. Spasmodic laughter, or GELASMUS, is also found in schizophrenia, hysteria, and organic (especially bulbar and pseudobulbar)

diseases of the brain, as well as in CHOREOMANIA. See also HUMOR. —**laugh** *vb.*

**Launois-le Cleret syndrome** see FRÖHLICH'S SYNDROME.

**Laurence-Moon-Bardet-Biedl syndrome** an autosomal recessive disorder first described in 1866 by British ophthalmologist John Zachariah Laurence (1830–1870) and his colleague, British-born U.S. ophthalmologist Robert C. Moon (1844–1914), in four siblings with progressive visual impairment, obesity, paralysis, and cognitive impairment. In 1920 and 1922, respectively, French physician George Bardet (1885–1970) and Romanian-born Austrian physician Artur Biedl (1869–1933) independently described patients sharing only some of the symptoms seen in the original siblings, plus additional symptoms that they did not exhibit (e.g., polydactyly, impaired speech, hypogonadism). The syndrome was thus divided into two related disorders, **Laurence-Moon syndrome** and **BARDET-BIEDL SYNDROME (BBS)**. However, because of overlapping phenotypes, it is thought to be one syndrome, with BBS being the term now commonly used to cover both syndromes. Also called **Laurence-Moon-Biedl-Bardet syndrome**.

**law** *n.* **1.** a formal statement describing a regularity (e.g., of nature) to which no exceptions are known or anticipated. See CAUSAL LAW; NATURAL LAW. **2.** in science, mathematics, philosophy, and the social sciences, a theory that is widely accepted as correct and that has no significant rivals in accounting for the facts within its domain. **3.** a formally established rule regulating the conduct of people within a particular jurisdiction that must be obeyed to avoid legal sanctions.

**law-and-order orientation** see CONVENTIONAL LEVEL.

**law of advantage** the principle that one of two or more incompatible or inconsistent responses has the advantage of being more beneficial or attractive and therefore occurs more frequently than the others.

**law of assimilation** **1.** the principle that organisms respond to new situations in a manner similar to their reactions to familiar situations. See GENERALIZATION. **2.** see ASSIMILATION.

**law of closure** see CLOSURE.

**law of combination** the principle that (a) two or more stimuli occurring simultaneously or in proximity may produce a combined response and (b) that two responses may occur together when a stimulus eliciting either of them is presented.

**law of common fate** see COMMON FATE.

**law of common region** see COMMON REGION.

**law of constancy** **1.** the principle that visual stimuli retain a constant appearance despite alterations in stimulus conditions, such as the level of illumination (BRIGHTNESS CONSTANCY) or the angle subtended on the retina (SIZE CONSTANCY). **2.** in psychoanalytic theory, see PRINCIPLE OF CONSTANCY.

**law of contiguity** a principle of association stating that forming connections between ideas, events (e.g., stimuli and responses), or other items depends on their proximity in space or time. It has been supplemented by the principle of CONTINGENCY; that is, the degree of association between events increases when the probability of one event occurring is increased by the occurrence of the other. The com-

bination of contiguity and contingency is now viewed as essential to forming associations and is a keystone of most contemporary theories of learning, memory, and knowledge.

**law of continuity** see GOOD CONTINUATION.

**law of contrast** a principle of association stating that opposites are reminders of one another: encountering or thinking about one (e.g., a snow-covered field) tends to bring to mind the other (e.g., a sunny beach). Initially proposed as a distinct, essential concept in ASSOCIATIONISM, the law of contrast later came to be viewed as a special case of the LAW OF CONTIGUITY.

**law of disuse** see LAW OF USE.

**law of effect** broadly, the principle that consequences of behavior act to modify the future probability of occurrence of that behavior. As originally postulated by Edward L. THORNDIKE, the law of effect stated that if a response R produces a satisfying state of affairs (or a positive reinforcer), then an association is formed between R and the stimuli S present at the time R was made. As a result of this S–R association, R occurs whenever the organism encounters S. This part of the law of effect was the foundation of S–R theories of learning. Originally, Thorndike also proposed that the presentation of an aversive or annoying consequence serves to weaken S–R associations, with the consequence that responding becomes suppressed. He later revised the law to include only the response-strengthening effect of reinforcement; the original version of the law was called the **strong law of effect**, and the revised version was known as the **weak law of effect**.

**law of equality** a gestalt principle that parts of a figure perceived as equal tend to form a whole.

**law of equipotentiality** see EQUIPOTENTIALITY.

**law of exercise** the principle that repetition of some act makes that act more probable in the future. The law of exercise was first suggested and then discarded by Edward L. THORNDIKE.

**law of filial regression** the principle that inherited traits tend to revert toward the mean for the species; for example, very tall fathers tend to have sons shorter than themselves but taller than the population mean, and very short fathers tend to have sons taller than themselves but shorter than the population mean.

**law of forward conduction** the rule that, under natural conditions, nerve impulses always travel in the same direction, from the AXON HILLOCK, where the AXON originates at the cell body, to the terminal button of the axon. Also called **forward-conduction law**. Compare ANTIDROMIC CONDUCTION.

**law of frequency** a principle of association stating that the more often ideas, events (e.g., stimuli and responses), or other items co-occur, the stronger the connections between them. The law of frequency is a concept of ASSOCIATIONISM.

**law of good continuation** see GOOD CONTINUATION.

**law of good figure** the principle of PRÄGNANZ as applied to vision. It states that any pattern is perceived so that the resulting figure is as simple as possible.

**law of good shape** see GOOD SHAPE.

**law of inclusiveness** see INCLUSIVENESS.

**law of initial values** the principle that the initial level of a physiological response is a major determinant of a later response in that system. Thus, if an individual's pulse rate is high, his or her cardiovascular response to an emotion-provoking stimulus will be weaker than if the initial pulse rate had been low. Also called **initial value dependency**; **initial values law**; **rate dependence effect**. See RATE DEPENDENCY. [proposed in 1931 by U.S. neuropsychiatrist Joseph Wilder (1895–1976)]

**law of large numbers** a mathematical principle indicating that as the sample size increases, the theoretical expectations of its statistical properties will be more and more closely realized. For example, as the number of replications of an experiment increases, the average (MEAN) of the observed results will approach the true average (theoretical probability in the population) with increasing accuracy. According to the **strong law of large numbers**, the average of the results obtained from a large number of trials will converge upon the theoretically expected value, becoming closer as more trials are performed. In distinction, the **weak law of large numbers** states that the average is likely to converge upon the expected value as more trials are conducted. Thus, the essential difference between the two laws is that the former insists on convergence whereas the latter expects convergence.

**law of least action** see PRINCIPLE OF LEAST EFFORT.

**law of mass action** see MASS ACTION.

**law of neurobiotaxis** the principle that DENDRITES of developing neurons grow in the direction of the AXONS of nearby active neurons. See NEUROBIOTAXIS.

**law of parsimony** the principle that the simplest explanation of an event or observation is the preferred explanation. Simplicity is understood in various ways, including the requirement that an explanation should (a) make the smallest number of unsupported assumptions, (b) postulate the existence of the fewest entities, and (c) invoke the fewest unobservable constructs. Also called **economy principle**; **principle of economy**; **principle of parsimony**. See ELEGANT SOLUTION; OCCAM'S RAZOR.

**law of Prägnanz** see PRÄGNANZ.

**law of precision** in GESTALT PSYCHOLOGY, the principle that all percepts tend to become organized into regular, symmetrical forms with precise contours. The term is used occasionally as a synonym for the principle of PRÄGNANZ.

**law of primacy** see PRIMACY EFFECT.

**law of prior entry** the principle that when two stimuli are presented simultaneously, one attended to and the other not, the attended stimulus will be perceived as having occurred before the other. See COMPLICATION EXPERIMENT.

**law of proximity** see PROXIMITY.

**law of recency** see RECENCY EFFECT.

**law of similarity 1.** a principle of association stating that like produces like: Encountering or thinking about something (e.g., one's birthday month) tends to bring to mind other similar things (e.g., other people one knows with the same birthday month). The law of similarity is fundamental to ASSOCIATIONISM. **2.** see SIMILARITY.

**law of specific nerve energies** see SPECIFIC-ENERGY DOCTRINE.

**law of sufficient reason** the proposition, introduced

by Gottfried Wilhelm LEIBNIZ, that if something exists, it is necessarily the case that there is sufficient reason for its existence. The principle implies an inherent rationale for the universe. It is complemented by Leibniz's law of insufficient reason, which states that if there is not sufficient reason for the existence of something, it will not exist.

**law of symmetry** see SYMMETRY.

**law of use** the principle that the more an association is used, the stronger it becomes. The complementary **law of disuse** states that the less an association is used, the weaker it becomes. Both laws were first suggested and then discarded by Edward L. THORNDIKE.

**laws of grouping** see GESTALT PRINCIPLES OF ORGANIZATION.

**laws of learning** statements describing the circumstances under which learning generally occurs. Over the centuries, such laws have been hypothesized and studied by philosophers such as ARISTOTLE, John LOCKE, and John Stuart MILL and physiologist Ivan PAVLOV, among others: The modern laws of learning were formalized in 1911 by Edward L. THORNDIKE and have been modified numerous times since. Among the currently accepted laws of learning are the LAW OF EFFECT, the LAW OF CONTIGUITY, the LAW OF FREQUENCY, the PRIMACY EFFECT, and the RECENCY EFFECT.

**laws of thought** certain principles of logic, such as the IDENTITY PRINCIPLE, that are deemed to be so essential to rational thought as to assume the character of law. Indeed, such principles define the very idea of logical thought. Which logical principles should be included in a set of such laws is, however, a matter of debate.

**laxative addiction** a dependence on the use of laxatives to induce bowel movements. The addiction is a vicious cycle, in which the use of laxatives gradually reduces bowel activity so that further use becomes the only way to avoid constipation. Laxative addiction is often associated with EATING DISORDERS in which laxatives are routinely used for purging. See also ENEMA ADDICTION; KLISMAPHILIA.

**lay analysis** historically, psychoanalytic therapy performed by a person who had been trained in psychoanalytic theory and practice but was not a physician (i.e., a layperson). Beginning in the 1950s, psychoanalytic training institutions began training licensed mental health practitioners besides psychiatrists, including psychologists and social workers, thus rendering the term obsolete.

**layperson personality theories** see NAIVE PERSONALITY THEORIES.

**lay psychology** see NAIVE ANALYSIS OF ACTION.

**lazy eye** see AMBLYOPIA.

**LBW** abbreviation for LOW BIRTH WEIGHT.

**LCA** abbreviation for LATENT CLASS ANALYSIS.

**LCU** abbreviation for LIFE-CHANGE UNIT.

**LD 1.** abbreviation for LEARNING DISABILITY. **2.** abbreviation for LEARNING DISORDER. **3.** abbreviation for LETHAL DOSE.

**L data** life data: information about an individual gathered from his or her life record or life history. See also O DATA; Q DATA; T DATA.

**LDH** abbreviation for LACTATE DEHYDROGENASE.

**L-dopa** *n.* see LEVODOPA.

**LE** abbreviation for LUPUS ERYTHEMATOSUS.

**leader** *n.* **1.** an individual who guides others in their pursuits, often by organizing, directing, coordinating, and motivating their efforts. **2.** an individual of authority in a social group or organization, such as the head of a university department or a military commander. **3.** one who is thought to possess the qualities or characteristics associated with individuals who rise to positions of authority in groups and organizations. See also LEADERSHIP.

**leader categorization theory** an information-processing model that assumes that perceivers automatically and spontaneously appraise the extent to which people, including themselves, can be classified as leaders. Such judgments are determined by IMPLICIT LEADERSHIP THEORIES that organize perceivers' general beliefs about the characteristics that most leaders possess. See also ATTRIBUTION THEORY OF LEADERSHIP; LEADER PROTOTYPE.

**leaderless group discussion** an exchange of opinions, ideas, and information on some topic by the members of a group with no identified leader. Such discussions are used in studies of group productivity and LEADERSHIP EMERGENCE to evaluate specific interpersonal and leadership skills; in training and educational settings to provide participants with insights into their own and others' behaviors in open, unstructured group situations; and in screening candidates for positions in business, social work, teaching, and the military.

**leaderless group therapy** a form of GROUP THERAPY in which leaderless meetings are held either (a) on an occasional or regularly scheduled basis as an adjunct to the traditional therapist-led process or (b) on an entirely self-directed basis in which a group always meets without a designated leader.

**leader match** an approach to leadership training based on the CONTINGENCY THEORY OF LEADERSHIP of Fred FIEDLER. It proposes (a) that effective leadership is dependent on a match between the individual's LEADERSHIP STYLE and the particular group situation and (b) that individuals usually find it difficult to alter their established style of leadership but (c) that leaders can be trained to diagnose a situation and alter it to fit their own style.

**leader-member exchange theory (LMX theory)** a dyadic, relational approach to leadership that assumes that (a) leaders develop exchange relationships with each one of their subordinates and (b) the quality of these leader-member exchange (LMX) relationships affects subordinates' responsibility, influence over decisions, access to resources, and performance. Those group members who are linked to the leader by a strongly positive LMX relationship are part of the unit's INGROUP, whereas those who have a low-quality LMX relationship are relegated to the OUTGROUP.

**leader prototype** a cognitive representation of an actual or abstract leader who is thought to possess features shared by most or all individuals considered to be leaders and so to exemplify that construct. See also ATTRIBUTION THEORY OF LEADERSHIP; LEADER CATEGORIZATION THEORY.

**leadership** *n.* **1.** the processes involved in leading others, including organizing, directing, coordinating, and motivating their efforts toward achieving certain group or organizational goals. Leadership tends to be reciprocal (leaders influence followers, and followers influence leaders), trans-

actional (leaders and followers exchange their time, energies, and skills to increase their joint rewards), transformational (leaders inspire and motivate followers), and cooperative rather than coercive (followers voluntarily accept the leader's suggestions). See TRANSACTIONAL LEADERSHIP; TRANSFORMATIONAL LEADERSHIP. **2.** the traits or behaviors characteristic of an effective leader. See LEADERSHIP THEORIES.

**leadership emergence** the process by which an individual is recognized (formally or informally, perceptually or behaviorally, implicitly or explicitly) as the leader of a formerly leaderless group. See EMERGENT LEADER.

**leadership labyrinth** a metaphor for the series of detours, dead ends, and unusual paths that women and members of minority groups encounter in many organizations and that serve as obstacles to reaching the highest positions of authority. For women, these obstacles include not only sex discrimination but also domestic responsibilities (see MOMMY TRACK) and sometimes women's own doubts and failure to believe in themselves. Compare GLASS CEILING. [proposed in 2007 by U.S. social psychologists Alice H. Eagly (1938– ) and Linda L. Carli]

**leadership role** **1.** structurally, the position occupied by the person who is responsible for guiding others in their pursuits. **2.** behaviorally, a relatively coherent set of task and relationship behaviors expected of the individual who is formally or informally identified as a group's leader.

**leadership style** **1.** the stable behavioral tendencies and methods displayed by a particular leader when guiding a group. Common styles include those of autocratic leaders (see AUTHORITARIAN LEADER), BUREAUCRATIC LEADERS, CHARISMATIC LEADERS, DEMOCRATIC LEADERS, and LAISSEZ-FAIRE LEADERS. **2.** in style and contingency LEADERSHIP THEORIES, the extent to which the leader's approach can be characterized as TASK MOTIVATED and RELATIONSHIP MOTIVATED. Most such theories argue that effective leaders balance these two basic orientations in the groups they lead. See also LEAST PREFERRED COWORKER SCALE.

**leadership substitute** any aspect of the social setting, including the nature of the work task, the characteristics of the group members, or the qualities of the group or organization itself, that reduces or eliminates the need for a specific individual who performs such typical leadership behaviors as organizing, directing, coordinating, supporting, and motivating the group members.

**leadership theories** theories advanced to explain the effectiveness or ineffectiveness of leaders. The main types include TRAIT THEORIES OF LEADERSHIP, which focus on such characteristics as supervisory ability, intelligence, self-assurance, and decisiveness; BEHAVIORAL THEORIES OF LEADERSHIP, which focus on the task-based and relationship-based activities of the leader; CONTINGENCY THEORIES OF LEADERSHIP, which attempt to describe what type of leadership style is most effective in different situations; and COGNITIVE THEORIES OF LEADERSHIP, such as LEADER CATEGORIZATION THEORY or the ATTRIBUTION THEORY OF LEADERSHIP, which describe the way subordinates' perceptions of their leaders influence leadership effectiveness. See also IMPLICIT LEADERSHIP THEORIES.

**lead-pipe rigidity** MUSCULAR RIGIDITY that produces a smooth, steady resistance to passive movement of the limbs of people with parkinsonism or cerebral palsy. Compare COGWHEEL RIGIDITY.

**leaf node** see GRAPH; TREE.

**leaf switch** a nonrigid, flexible LEVER SWITCH that is activated by a slight bending, enabling it to be operated by a user with a disability.

**leakage** *n.* the unintended revelation that a person has a feeling or motive different from the one intended to be communicated to others. It may be manifested, for example, by frequent speech pauses when a person describes an event untruthfully. See VERBAL LEAKAGE. See also DECEPTION CLUE.

**lean medium** see MEDIA RICHNESS.

**learned helplessness** a phenomenon in which repeated exposure to uncontrollable stressors results in individuals failing to use any control options that may later become available. Essentially, individuals are said to learn that they lack behavioral control over environmental events, which, in turn, undermines the motivation to make changes or attempt to alter situations. The phenomenon was first described in 1967 by U.S. psychologists J. Bruce Overmier (1938– ) and Martin E. P. Seligman (1942– ) after experiments in which nonhuman animals exposed to a series of unavoidable electric shocks later failed to learn to escape these shocks when tested in a different apparatus, whereas animals exposed to shocks that could be terminated by a response did not show interference with escape learning in another apparatus. A syndrome with three features developed: (a) a motivational deficit characterized by a failure to respond when challenged with further aversive events, (b) an associative deficit characterized by impairment of learning from successful coping, and (c) an emotional deficit characterized by apparent underreactivity to painful events—although later research revealed by assaying corticoid levels that the animals were very stressed.

In the 1970s, Seligman extended the concept from nonhuman animal research to clinical depression in humans and proposed a **learned helplessness theory** to explain the development of or vulnerability to depression. According to this theory, people repeatedly exposed to stressful situations beyond their control develop an inability to make decisions or engage effectively in purposeful behavior. Subsequent researchers have noted a robust fit between the concept and POSTTRAUMATIC STRESS DISORDER.

**learned optimism** an explanatory style that attributes causes for negative events to factors that are external, unstable, and specific: That is, problems are believed to be caused by other people or situational factors, the causes are seen as fleeting in nature, and they are localized to one or a few situations in one's life. According to LEARNED HELPLESSNESS theory, the manner in which individuals routinely explain the events in their lives can drain or enhance motivation, reduce or increase persistence, and enhance vulnerability to depression or protect against it, making learned optimism a putative mechanism by which therapy ameliorates depression.

**learned response** see ACQUIRED RESPONSE.

**learned taste aversion** see CONDITIONED TASTE AVERSION.

**learned treatise exception** an exception to the hearsay rule (which states that evidence from statements by individuals other than the testifying individual is inadmissible in court) that allows expert witnesses to speak for others if they are reporting an opinion shared by the experts in their field. Therefore, an expert may report findings contained in journal articles or similar published treatises for the purpose of informing the court of the general expert

opinion concerning the matter in question. See also OPINION TESTIMONY.

**learning** *n.* the acquisition of novel information, behaviors, or abilities after practice, observation, or other experiences, as evidenced by change in behavior, knowledge, or brain function. Learning involves consciously or nonconsciously attending to relevant aspects of incoming information, mentally organizing the information into a coherent cognitive representation, and integrating it with relevant existing knowledge activated from long-term memory.

**Learning Abilities Measurement Program (LAMP)** a cognitive-assessment program most often associated with the measurement of occupational work skills. It is exemplified by an information-processing model of assessment, such as that used by the British Army Recruitment Battery (BARB). LAMP assists in interpretive analysis of job- and task-ability clusters.

**learning by doing** see PROGRESSIVE EDUCATION.

**learning center** **1.** an educational technique in which skill-specific sets of activities are developed for students to work on independently at their own pace for a particular length of classroom time during each school day. For example, a kindergarten teacher may create a center for counting, where students color shapes numbered 1 through 10 and then glue them in sequence onto a piece of construction paper; a center for vocabulary, where students illustrate their own personal dictionaries with pictures that correspond to the words; and a center for FINE MOTOR skills, where students trace an animal from a pattern and then cut out and decorate it. During learning center time, students are divided into small groups that each have a different task to complete, with the tasks periodically rotating among the groups. Commonly seen in the elementary-school grades, such self-directed learning is intended to demonstrate or strengthen skills with which students already are familiar rather than to facilitate the acquisition of new skills. **2.** more generally, any educational establishment or program that facilitates students' acquisition of knowledge or understanding of topics by providing additional support and personalized instruction outside of regular school hours. Learning centers may be government funded or privately funded, and they may be offered within existing community or educational facilities, in stand-alone facilities, or online. They serve a range of ages and populations, such as gifted children; adolescents with learning disabilities, emotional difficulties, or behavioral problems; and adult professionals seeking further training. The specific tools and materials available vary by facility or program but generally include enrichment and recreational activities, tutoring, computer and Internet practice, counseling, and other services. Also called **learning support center**.

**learning curve** a graphic representation of the course of learning of an individual or a group. A measure of performance (e.g., gains, errors) is plotted along the vertical axis; the horizontal axis plots trials or time. Also called **acquisition curve**. See NEGATIVE ACCELERATION; POSITIVE ACCELERATION.

**learning difficulties** in the United Kingdom, intellectual disability or learning disability.

**learning disabilities specialist** an individual, usually working within an interdisciplinary team of school

professionals, who is trained to identify and assist students with problems associated with learning disabilities.

**learning disability (LD)** any of various conditions with a neurological basis that are marked by substantial deficits in acquiring certain scholastic or academic skills, particularly those associated with written or expressive language. Learning disabilities include learning problems that result from perceptual disabilities, brain injury, and MINIMAL BRAIN DYSFUNCTION but exclude those that result from visual impairment or hearing loss; intellectual disability; emotional disturbance; or environmental, cultural, or economic factors. For diagnostic purposes, learning disability is the condition that exists when a person's actual performance on achievement testing is substantially (typically 2 standard deviations) below that expected for his or her established intelligence, age, and grade.

**learning disorder (LD)** in *DSM-IV-TR*, any neurologically based information-processing disorder characterized by achievement that is substantially below that expected for the age, education, and intelligence of the individual, as measured by standardized tests in reading and mathematics and written material. In standard practice, a discrepancy of 2 standard deviations must exist between general intelligence testing scores (as measured by a standard normed IQ test) and achievement scores (as measured by a standard normed ACHIEVEMENT TEST). A discrepancy of 1 to 2 deviations can be considered a learning disorder if some other special feature is present, such as a cognitive-processing disorder, a relevant mental disorder, a prominent medical disability, or exceptional absence from formal education. Major types of learning disorders are DISORDER OF WRITTEN EXPRESSION, MATHEMATICS DISORDER, NONVERBAL LEARNING DISORDER, and READING DISORDER. This term essentially is synonymous with LEARNING DISABILITY and in *DSM-5* is called **specific learning disorder**, a category that subsumes impairments of reading, mathematics, and written expression as specifiers rather than as distinct diagnostic entities themselves.

**learning goal** in the analysis of personality and goal-directed motivation of U.S. personality psychologist Carol S. Dweck (1946– ), a goal to acquire mastery of a task or subject matter. Also called **mastery goal**.

**learning model** a general perspective on human development in which children are viewed as passively absorbing the relevant features of the environment in a continuous line of development. This emphasis on environmental conditions is less influential within developmental psychology than previously, rapidly being eclipsed by the LIFESPAN PERSPECTIVE and other approaches.

**learning paradigm** an experimental design used to research INCIDENTAL LEARNING. Groups of participants are shown the same stimuli (e.g., a list of 20 words) but asked to perform different tasks with them (e.g., picture associated words, determine the average number of letters in each word). Afterward, the participants unexpectedly are asked to recall as many of the presented items as possible.

**Learning Potential Assessment Device (LPAD)** a test that dynamically assesses individuals' learning potential. First used primarily for individuals with intellectual disability, it has since been used for participants displaying a wide variety of skill levels. The test exists in individual and group versions; it is dynamic in that the examinee receives feedback about his or her performance while actually taking the test. The LPAD is intended primarily for

clinical use, yielding interpretive data to help the examiner understand the examinee's pattern of strengths and weaknesses. [devised in 1985 by Romanian-born Israeli psychologist Reuven Feuerstein (1921–2014) and colleagues]

**learning set** a phenomenon observed when a participant is given a succession of discrimination problems to learn, such as learning that one object contains a food reward and a different object does not. After a large number of such problems, the participant acquires a rule or MENTAL SET for solving them, and successive discriminations are learned faster. See LEARNING TO LEARN. [introduced in 1949 by Harry HARLOW]

**learning skills** the abilities involved in gathering knowledge and increasing understanding, especially those abilities demonstrated in educational settings and developed through study, classroom instruction, and the like.

**learning strategy** a mental or behavioral approach or method used to facilitate learning, such as forming a mental image, organizing items, searching for existing associations, or practicing RETRIEVAL.

**learning style** see COGNITIVE STYLE.

**learning support center** see LEARNING CENTER.

**learning technologies** electronic tools or advanced machines used to facilitate learning, such as film, television, computers, and the Internet. Web-based instruction plays a growing role in modern DISTANCE LEARNING.

**learning theory** a body of concepts and principles that seek to explain the learning process. Learning theory actually encompasses a number of specific theories whose common interest is the description of the basic LAWS OF LEARNING, usually derived from studies of classical and instrumental conditioning and verbal learning. These include HULL'S MATHEMATICO-DEDUCTIVE THEORY OF LEARNING, the PURPOSIVE BEHAVIORISM of Edward C. TOLMAN, the RESCORLA-WAGNER THEORY, and the COMPARATOR HYPOTHESIS, among others.

**learning to learn 1.** repeated practice with one kind of task but learning different material each time, which facilitates the ability to learn new material. Harry HARLOW demonstrated learning to learn by teaching monkeys to discriminate between pairs of objects. The animals eventually became skilled at rapidly learning new discriminations, sometimes in a single trial. See LEARNING SET; TRANSFER OF TRAINING. **2.** acquiring effective learning strategies such as planning; goal-setting; scheduling; using mnemonics, outlines, and flashcards; and monitoring progress.

**learning trial** a single presentation of the information to be learned in a learning experiment. Examples of learning trials are a single pairing of the conditioned stimulus and the unconditioned stimulus in classical conditioning and a single presentation of a word to be remembered in a memory experiment. The amount of learning is typically expressed as a function of the number of learning trials given, as in a LEARNING CURVE. Also called **acquisition trial**.

**learning types** individual differences in people's preferred ways of organizing and processing information (see COGNITIVE STYLE). For example, some people may prefer to remember auditory information and develop strategies to recall verbal information; others may prefer visual and imaginal coding of material.

**learning without awareness** a phenomenon said to occur when an individual's behavior has been affected without that individual being aware of the conditions affecting the behavior, of the relationship between those conditions and the behavior, or of the fact that the behavior has changed. The existence of such learning is controversial but evidence has been found in CLASSICAL CONDITIONING, PROCEDURAL LEARNING, IMPLICIT LEARNING, and SUBLIMINAL LEARNING. However, the critical data for assessing awareness depend on experimental participants' verbal reports that they are unable to describe the learning experience to which they were exposed.

**least effort principle** see PRINCIPLE OF LEAST EFFORT.

**least perceptible duration** see JUST NOTICEABLE DURATION.

**Least Preferred Coworker Scale (LPC Scale)** a measure of LEADERSHIP STYLE in which leaders are asked to think of the coworker with whom they have had the most difficulty in the past. They then rate this coworker on a series of bipolar adjective pairs (friendly-unfriendly, trustworthy-untrustworthy, etc.). The LPC score is the sum of these ratings, with higher scores indicating more positive ratings of the least preferred coworker. The measure assumes that leaders who rate least preferred coworkers relatively positively are RELATIONSHIP MOTIVATED, whereas those who rate coworkers more negatively are TASK MOTIVATED. See CONTINGENCY THEORY OF LEADERSHIP. [developed in 1967 by Fred FIEDLER]

**least restrictive alternative** the U.S. legal directive that less treatment rather than more (e.g., community care vs. hospitalization) is the most desirable objective in treating people with a chronic mental disorder. The principal consideration is combining safety concerns with the minimum level of restrictions on personal liberty. This position was emphasized in two decisions of U.S. Court of Appeals Judge David L. Bazelon (1910–1993) in 1966: *Rouse v. Cameron* and *Lake v. Cameron*.

**least restrictive environment (LRE)** in the United States, an educational setting that gives a student with disabilities the opportunity to receive instruction within a classroom that meets his or her learning needs and physical requirements. According to the INDIVIDUALS WITH DISABILITIES EDUCATION ACT, such students should be educated to the maximum extent possible, depending on the nature or severity of their disabilities, with students who do not have disabilities. See also FULL INCLUSION; MAINSTREAMING.

**least significant difference (LSD)** see FISHER LEAST SIGNIFICANT DIFFERENCE TEST.

**least squares criterion** in REGRESSION ANALYSIS and similar statistical procedures, the principle that one should estimate the values of PARAMETERS in a way that will minimize the squared error of predictions from the model. That is, one should strive to build models that minimize the squared differences between actual scores (observed data) and expected scores (those predicted by the model). Also called **least squares principle**.

**least squares regression** a type of REGRESSION ANALYSIS in which the researcher strives to develop a **least-squared-errors solution** or **least squares solution** to describe the relationship between an outcome or DEPENDENT VARIABLE and one or more predictors or INDEPENDENT VARIABLES. That is, one develops a model that is the best fit for the data because it yields the smallest squared differ-



ences between the actual observations and their values as predicted by the model. Also called **least squares estimation**; **ordinary least squares (OLS) regression**. See LEAST SQUARES CRITERION.

**leaving the field** the act of removing oneself from a situation when confronted with seemingly insurmountable obstacles, insoluble conflicts, or intensely frustrating problems. It may involve physical withdrawal, escape into psychogenic illness, or some other behavior, such as distraction or changing the subject during a conversation.

**Leber's disease** a hereditary visual disorder characterized by slowly progressive optic atrophy with normal peripheral vision but blind areas of the retina toward the center. The genetic defect is transmitted by females, but males are most often affected, with symptoms beginning around the third decade of life. Also called **Leber's optic atrophy**. See also AMAUROSIS. [Theodor **Leber** (1840–1917), German ophthalmologist]

**Leboyer technique** an approach to childbirth that focuses on the feelings and sensations of the baby. It advocates dim lights, quiet, delay in severing the umbilical cord, body contact between newborn and parents, and an immediate warm bath that approximates the conditions within the womb. See also LAMAZE METHOD. [Frédéric **Leboyer** (1918– ), French obstetrician]

**lecanomancy** *n.* a system of divination in which a sensitive or clairvoyant looks into a basin, bowl, or vase of water, often after rocks have been dropped in or oil has been added, and sees alleged visions of the future or interprets the observed patterns or ripples. —**lecanomancer** *n.*

**Lectopam** *n.* a trade name for BROMAZEPAM.

**lecture method** the formal, verbal presentation of information or other material by an instructor to a group of students or other learners. The lecture method is used mainly when groups are large or time is limited (e.g., in personnel training). It can also be used to introduce other instructional methods, such as audiovisual presentations or role play, or to summarize material developed by other means.

**Lee-Boot effect** a prolonged DIESTRUS phase, induced by pheromones, that occurs when a female animal is housed with other females. [first reported in 1955 by S. van der **Lee** and L. M. **Boot**, Dutch biologists]

**left brain** the left cerebral hemisphere of the brain. The term is sometimes used to describe functions or COGNITIVE STYLE supposedly mediated by the left (rather than by the right) hemisphere, such as analytical thinking. Compare RIGHT BRAIN. See also HEMISPHERIC LATERALIZATION.

**left censoring** the situation in which a researcher cannot determine the precise time at which a target event occurred for some individuals within a sample because those participants experienced the event prior to the observation period. For example, left censoring might arise in a study of alcohol initiation among high school students because a subset of the sample is likely to have initiated use prior to high school entry. See also RIGHT CENSORING.

**left-handedness** *n.* the preferential use of the left hand for major activities, such as eating, writing, and throwing. See also LATERALITY; SINISTRALITY. Compare RIGHT-HANDEDNESS.

**left hemisphere** the left half of the cerebrum, the part of the brain concerned with sensation and perception,

motor control, and higher level cognitive processes. The two CEREBRAL HEMISPHERES differ somewhat in function; for example, in most people, the left hemisphere has greater responsibility for speech. See HEMISPHERIC ENCODING–RETRIEVAL ASYMMETRY; HEMISPHERIC LATERALIZATION. Compare RIGHT HEMISPHERE.

**left-hemisphere consciousness** the claim by U.S. cognitive neuropsychologist Michael S. Gazzaniga (1939– ) that the “speaking hemisphere” of the brain (the left hemisphere in most people) is the seat of consciousness. Others, including Roger SPERRY, have proposed that the right hemisphere may also have its own form of consciousness. See RIGHT-HEMISPHERE CONSCIOUSNESS.

**legal blindness** see BLINDNESS.

**legal capacity** the ability to acquire the knowledge and understanding necessary to make a rational choice regarding any issue that has legal implications (e.g., entering into contracts, making a will, standing trial). See also COMPETENCY TO STAND TRIAL.

**legal psychiatry** see FORENSIC PSYCHIATRY.

**legal psychology** see FORENSIC PSYCHOLOGY.

**legal testimony** evidence given by an individual in court under oath or affirmation, either orally or in a written affidavit. Written evidence that was obtained during a deposition (an official pretrial questioning of an individual) may also be presented as testimony.

**legasthenia** *n.* a controversial syndrome in which the primary symptom is difficulty in synthesizing letters into words and analyzing words by breaking them down into their component letters, despite adequate intellectual and perceptual ability.

**legend** *n.* **1.** a traditional story that has been passed down from an earlier period and may or may not contain elements of historical truth. Legends usually grow by a process of CHAIN REPRODUCTION. See also MYTHOLOGY. **2.** a caption or key that explains illustrations or symbols on a graph, map, or chart. —**legendary** *adj.*

**legibility** *n.* **1.** capability of being read or deciphered. **2.** the ease with which an environment can be cognitively represented, which determines one's ability to navigate or find one's way within an environment or setting. LANDMARKS, the overall shape or configuration of street grids, and building layout can significantly influence legibility. See also COGNITIVE MAP; ENVIRONMENTAL COGNITION. —**legible** *adj.*

**legitimate authority** see AUTHORITY.

**legitimate power** a capacity to influence others that is based on the influencer's position or role in the group and members' recognition that an individual in such a position has the right to require and demand compliance with his or her directives.

**leisure lifestyle** a way of life in which leisure and free time play a prominent role. Leisure activities (e.g., hobbies, recreation, self-selected activities) largely or entirely replace obligatory activities (e.g., work for pay), as is the case for people who have retired from full-time paid employment.

**Lejeune syndrome** see CRI DU CHAT SYNDROME.

**lek mating** a mating system in which several males congregate at one location during the mating season, forming small individual territories and competing with each other

for mates by giving complex, elaborate visual and vocal displays. Females are attracted by these displays and move among the males to choose their mate. Typically, the males provide no parental care to resulting offspring.

**lemma** *n.* **1.** in logic, a subsidiary PROPOSITION used as a part of the proof of a subsequent proposition. The proof of the lemma may or may not be included in the argument. **2.** in linguistics, a word considered to be the word in its basic dictionary form together with all of its inflected forms. For example, the lemma *be* consists of *be* plus *am*, *are*, *is*, *was*, *were*, *being*, and *been*.

**lemniscal system** a major SOMATOSENSORY SYSTEM consisting of long, ascending neural pathways projecting to the thalamus. It includes the MEDIAL LEMNISCUS, LATERAL LEMNISCUS, and secondary trigeminal projections.

**length of stay (LOS)** the length of an inpatient's continuous stay in a hospital. A UTILIZATION REVIEW will normally compare the LOS under review with regional norms, as expressed by the average LOS for the relevant diagnosis.

**leniency error** a type of rating mistake in which the ratings are consistently overly positive, particularly regarding the performance or ability of the participants. It is caused by the rater's tendency to be too positive or tolerant of shortcomings and to give undeservedly high evaluations. Also called **leniency bias**. Compare SEVERITY ERROR.

**lens** *n.* **1.** in vision, a transparent, biconvex structure in the anterior portion of the eyeball (just behind the IRIS) that provides the fine, adjustable focus of the optical system. It is composed of tiny hexagonal prism-shaped cells, called **lens fibers**, fitted together in concentric layers. **2.** an artificial enhancer to the eyes' natural structure, made of glass or plastic, that serves to focus vision (e.g., eyeglasses or contact lenses). See ACCOMMODATION.

**lens model** a metaphorical model intended to characterize the fact that organisms do not perceive the environment directly and objectively but instead use available cues to make inferences, judgments, or interpretations of the environment. A variety of cues are available, and the organism selects those it will use and then assigns each a relative weight or importance in the interpretive process. [proposed by Egon BRUNSWIK]

**lenticular nucleus** see BASAL GANGLIA.

**Leonardo's paradox** the apparent curvature of straight elements at the margins of a wide-angle scene containing linear perspective. [**Leonardo** da Vinci (1452–1519), Italian artist and scientist]

**leptin** *n.* a protein, manufactured and secreted by fat cells, that may communicate to the brain the amount of body fat stored and may help to regulate food intake. Leptin receptors have been found in the hypothalamus, and, when they are stimulated, food intake is reduced.

**leptokurtic** *adj.* describing a frequency distribution that is more peaked than the NORMAL DISTRIBUTION, having more scores in the center and fewer at the two extremes. See also MESOKURTIC; PLATYKURTIC.

**leptomorph** *n.* see BODY-BUILD INDEX.

**leptosome type** see ASTHENIC TYPE.

**LEQ** abbreviation for LIFETIME OF EXPERIENCES QUESTIONNAIRE.

**LES** abbreviation for LOCAL EXCITATORY STATE.

**lesbian feminism** a type of FEMINISM that emphasizes the sociopolitical meaning of lesbianism. Beyond the implications that lesbianism may have for women's right to control their own sexuality, it is suggested that lesbianism is the ultimate rejection of PATRIARCHY. See also LESBIAN SEPARATISM.

**lesbianism** *n.* female–female sexual orientation or behavior. The name is derived from Lesbos, an Aegean island where the poet Sappho (c. 600 BCE) wrote glowing accounts of erotic activities between women. Formerly called **Sapphism**. See also HOMOSEXUALITY. —**lesbian** *adj.*, *n.*

**lesbian separatism** a radical form of LESBIAN FEMINISM arguing that feminist women should reject heterosexuality to effect a complete separation from patriarchal society and its institutions.

**Lesch–Nyhan syndrome** an X-linked recessive disorder associated with deficiency of the enzyme HYPOXANTHINE–GUANINE PHOSPHORIBOSYLTRANSFERASE, which leads to overproduction of uric acid. Affected individuals have severe kidney problems; moderate cognitive disabilities; and a compulsive, self-mutilating tendency to bite their lips and fingers. Motor development deteriorates after the first 6 to 8 months of life, marked by spasticity, chorea (involuntary jerky movements), and athetosis (sinuous involuntary movements). Also called **hereditary choreo-athetosis**; **hereditary hyperuricemia**. [described in 1964 by Michael **Lesch** (1939–2008) and William L. **Nyhan** (1926– ), U.S. pediatricians]

**Lesch's alcoholism typology (LAT)** a four-part categorization of individuals with ALCOHOL DEPENDENCE. **Type I** individuals do not experience cravings when not drinking but develop strong cravings once they start; they experience withdrawal symptoms much sooner in their drinking experiences than do other alcoholics. This type of dependence may be related to anomalies in alcohol metabolism. **Type II** individuals drink in response to conflict and to self-medicate psychiatric symptoms; they are identified as possibly suffering from low self-esteem. **Type III** individuals generally have underlying affective disorders and often sleep disorders; they usually have a family history of alcoholism and affective disorders. **Type IV** individuals have usually experienced either brain trauma or a difficult childhood and have a tendency toward impulsivity. A specific LAT questionnaire is available to determine a person's type within this classification. [developed by Austrian psychiatrist Otto-Michael **Lesch**]

**lesion** *n.* any disruption of or damage to the normal structure or function of an organ or part of an organ due to injury, disease, or a surgical procedure. A lesion may be a wound, ulcer, tumor, cataract, or any other pathological change in tissue. See also TEMPORARY LESION.

**less-is-more hypothesis** the proposition that the cognitive limitations of infants and young children may serve to simplify the body of language they process, thus making it easier for them to learn the complicated syntactical system of any human language. The name is derived from the famous design dictum of German-born U.S. architect Ludwig Mies van der Rohe (1886–1969). [proposed by 21st-century U.S. psychologist Elissa L. Newport]

**lethal catatonia** a form of acute maniacal excitement that in some cases leads to unexplained death. Also called **Bell's mania**; **deadly catatonia**; **exhaustion death**. See also HYPERMANIA. [first described in 1849 by U.S. physician Luther Vose Bell (1806–1862)]

**lethal dose (LD)** the minimum amount of a drug that is required to cause death. It is generally expressed in terms of the **median lethal dose (LD<sub>50</sub>; LD-50)**, the amount required to cause death (within a specified time frame) in 50% of nonhuman animals to which the drug is administered. See also THERAPEUTIC RATIO.

**lethality** *n.* the degree of dangerousness or likelihood of death associated with a particular course of action. The word is often used when comparing methods of committing suicide. —**lethal** *adj.*

**lethality scale** a set of criteria used to predict the probability of a suicide or attempted suicide occurring. A variety of such scales exist, most including gender, prior suicide attempts, and psychiatric diagnosis and history.

**lethargy** *n.* low energy level and lack of motivated behavior, often occurring in depression and a number of other conditions. —**lethargic** *adj.*

**letter-by-letter reading** the process in which individuals identify a word by building up its constituent letters in sequence rather than by recognizing the whole word. It is characteristic of pure ALEXIA.

**letter cancellation test** any of a variety of tests that measure attentional skills, visuomotor abilities, and other functions by requiring the participant to cross out a specific letter repeatedly interspersed among long lines of random letters.

**Letter–Number Sequencing** an attentional subtest on more recent versions of the WECHSLER ADULT INTELLIGENCE SCALE and the WECHSLER INTELLIGENCE SCALE FOR CHILDREN in which the participant must sequence a random order of numbers and letters. Specifically, the participant must first say the numbers in ascending order and then the letters in alphabetical order. It is generally considered to be a test of verbal working memory.

**letting go** discontinuing the struggle for life after a strenuous period of effort and suffering during the DYING PROCESS. See also ACCEPTANCE STAGE.

**leuco-** (**leuc-**; **leuko-**; **leuk-**) *combining form* white or colorless.

**leukocyte (leucocyte)** *n.* a type of blood cell that plays a key role in the body's defense against infection (see IMMUNE RESPONSE). Leukocytes include neutrophils, basophils, and eosinophils (known collectively as **granulocytes** because their cytoplasm contains granules), which ingest foreign particles by PHAGOCYTOSIS; and LYMPHOCYTES, which are involved in the production of antibodies and other specific immune responses. Also called **white blood cell**.

**leukotomy (leucotomy)** *n.* see LOBOTOMY.

**leuprolide** *n.* an analog of GONADOTROPIN-RELEASING HORMONE that opposes the action of androgens and estrogens through inhibition of GONADOTROPIN secretion. It is used for the treatment of uterine tumors, some forms of precocious puberty, and advanced prostate cancer. Because of its potent antiandrogen effects, it has been used controversially to perform CHEMICAL CASTRATION in repeat sex offenders. U.S. trade name (among others): **Lupron**.

**level** *n.* in an experimental design, the quantity, magnitude, or category of the INDEPENDENT VARIABLE (or variables) being studied. For example, if a researcher is assessing the effect of alcohol on cognition, each specific amount of alcohol included in the study is a level (e.g., 0.0 oz, 0.5 oz, 1.0 oz, 1.5 oz).

**Level I–Level II theory** the theory that cognitive abilities can be viewed as being arranged hierarchically at two different levels. The first level is of associative processing (exemplified by rote learning and short-term memory), the second of more conceptual processing (exemplified by categorization, abstraction, and reasoning). [developed by Arthur R. JENSEN]

**level of analysis** the level chosen when examining a multilevel phenomenon, such as the individual (micro-) level, the group or organizational (meso-) level, or the societal (macro-) level.

**level-of-aspiration theory** a conceptual approach to group and individual performance that assumes that one's initial goals and ambitions influence both particular performances and their emotional, motivational, and behavioral consequences.

**level of measurement** see MEASUREMENT LEVEL.

**level of significance** see SIGNIFICANCE LEVEL.

**levels of consciousness** **1.** varying degrees of alertness, arousal, or vigilance, ranging from the degree experienced in normal wakefulness, to that experienced in unfocused wakefulness, drowsiness, light sleep, or slow-wave (deep) sleep, to that experienced minimally or not at all, as in a MINIMALLY CONSCIOUS STATE, VEGETATIVE STATE, and COMA. Levels of consciousness are defined both behaviorally and by electroencephalography and other kinds of brain imaging. **2.** in certain mystical philosophies, states of pure consciousness that may involve changes in perception, feeling, and thought and that may occur either spontaneously or as a result of practices such as yoga, meditation, breathing techniques, and fasting.

**levels of intelligence** in theories proposing that intelligence can be envisaged as a series of levels, GENERAL ABILITY comes at the top of the hierarchy and successively narrower abilities come at lower levels. In one variant, the top level comprises general ability, the second level major group factors, the third level minor group factors, and the fourth level specific factors. Major group factors are those that are measured by many (but not all) intelligence tests, whereas minor group factors are ones that are measured by a smaller number of tests. Specific factors are measured only by single tests.

**levels-of-processing model of memory** the theory that ENCODING into memory and therefore subsequent RETENTION depend on the depth of cognitive ELABORATION that the information receives and that deeper encoding improves memory. In early critical experiments, depth was achieved by processing the meaning of to-be-remembered words rather than focusing on shallower dimensions, such as the sound of the words. [formulated in 1972 by Canadian psychologist Fergus I. M. Craik (1935– ) and Robert S. Lockhart]

**Levene test for equality of variance** a method for evaluating whether the VARIANCE in a set of scores is equivalent across two or more groups being studied. Equality of variance is required in ANALYSIS OF VARIANCE and other statistical techniques to obtain valid results. See HOMOGENEITY OF VARIANCE. [Howard **Levene** (1914–2003), U.S. statistician and geneticist]

**lever switch** a switch mounted on a device at one end with the opposite end free to move within fixed or variable limits. The lever may be any length or shape, requires the use of pressure on the end, and enables individuals with

limited fine motor control to operate electrical devices. See also LEAF SWITCH.

**Levinson's adult development theory** a model of human development in which adulthood is divided into early, middle, and late segments, each period consisting of (a) transitional, or entry, stages (e.g., age-30 transition, age-40 transition), which are often times of uncertainty, self-examination, exploration, and modification of the quality and significance of life commitments, and (b) intervening periods of relative stability, when individuals consolidate new interpretations, structures, and goals and move forward. The adaptations associated with transitional periods may be relatively smooth and uneventful or may be experienced as psychologically difficult and painful (e.g., as a MIDLIFE CRISIS). [proposed by Daniel **Levinson** (1920–1994), U.S. psychologist]

**levitation** *n.* an allegedly paranormal phenomenon in which a person or thing appears to ascend into the air and hover there without physical cause. Levitation is mainly associated with PSYCHOKINESIS and POLTERGEIST activity. A sensation of levitating is also common in dreams. —**levitate** *vb.*

**levodopa (L-dopa)** *n.* the naturally occurring form of dihydroxyphenylalanine (see DOPA), a precursor of the neurotransmitter dopamine. Synthetic levodopa is used in the treatment of Parkinson's disease (see DOPAMINE-RECEPTOR AGONIST), usually in combination with carbidopa (see SINEMET) or in combination with carbidopa and a catechol-O-methyltransferase (COMT) inhibitor (see STALEVO). U.S. trade names: **Dopar**; **Larodopa**.

**Levo-Dromoran** *n.* a trade name for LEVORPHANOL.

**levomepromazine** *n.* see METHOTRIMEPAZINE.

**Levoprome** *n.* a trade name for METHOTRIMEPAZINE.

**levorphanol** *n.* an OPIOID ANALGESIC produced by manipulation of the morphine molecule. Levorphanol is approximately four to six times more potent as an analgesic than morphine and possesses similar risks of dependence and respiratory depression. U.S. trade name: **Levo-Dromoran**.

**Lewy body dementia** a specific type of DEMENTIA associated with the presence of abnormal proteins called **Lewy bodies** in the brain. It is characterized by hallucinations and delusions occurring early in the disease process, marked day-to-day fluctuations in cognition, and spontaneous PARKINSONISM. [Friedrich Heinrich **Lewy** (1885–1950), German neurologist]

**lexical access** in psycholinguistics, the process by which an individual produces a specific word from his or her MENTAL LEXICON or recognizes it when used by others. See PRODUCTIVE VOCABULARY; RECEPTIVE VOCABULARY.

**lexical aphasia** a disorder characterized by an impaired ability to spell irregular words (e.g., *yacht*) or ambiguous words. The ability to spell other words or nonwords is not affected. Also called **surface aphasia**.

**lexical ambiguity** the property of a word that has more than one possible meaning. See AMBIGUITY.

**lexical decision** a task in which the participant is presented with strings of letters, such as HOUSE or HOUPÉ, and is required to determine whether each string spells a word. The REACTION TIME required to make the decision is usually measured.

**lexical-gustatory synesthesia** see SYNESTHESIA.

**lexical hypothesis** the supposition that any significant individual difference, such as a central personality trait, will be encoded into the natural-language lexicon; that is, there will be a term to describe it in any or all of the languages of the world. Also called **fundamental lexical hypothesis**. [first proposed in 1884 by Francis GALTON]

**lexical memory** see MENTAL LEXICON.

**lexical-selection rules** in linguistics, rules governing which lexical items may appear in which sentence structures. For example, intransitive verbs, such as *smile* or *lie*, do not allow direct objects and are therefore incompatible with certain syntactic structures. The relationship between lexical selection and sentence structure is of major interest in GENERATIVE GRAMMAR.

**lexical word** see CONTENT WORD.

**lexicology** *n.* the study of the meanings of words and the relationships between them. Applied lexicology is called **lexicography**, the science and art of compiling dictionaries.

**lexicon** *n.* the vocabulary of a language and, in psychology, the lexical knowledge of an individual. See MENTAL LEXICON. See also PRODUCTIVE VOCABULARY; RECEPTIVE VOCABULARY.

**LFA** see LOW-FUNCTIONING AUTISM.

**LGBTQ** abbreviation for lesbian, gay, bisexual, transgender, and questioning or queer: an inclusive term used to refer to the homosexual population in all of its diverse forms, to those with both homosexual and heterosexual preferences, and to those whose GENDER IDENTITY differs from the culturally determined gender roles for their birth sex.

**LGN** abbreviation for LATERAL GENICULATE NUCLEUS.

**LH 1.** abbreviation for LATERAL HYPOTHALAMUS. **2.** abbreviation for LUTEINIZING HORMONE.

**liability** *n.* **1.** in a civil lawsuit, the defendant's legal responsibility to pay monetary damages for injury or other harm that a court has deemed he or she has caused the plaintiff through, for example, professional MALPRACTICE. **2.** see MULTIFACTORIAL MODEL.

**liberalism** *n.* **1.** an attitude characterized by acceptance of alternative, even noncompliant, forms of thinking or acting and sometimes (but not necessarily or wholly) by advocacy of change to the status quo and tradition. **2.** historically, a broad political philosophy emphasizing individual freedom, constitutional government, and social progress through open debate and the pragmatic reform of existing institutions and laws. —**liberal** *adj.*

**liberation psychology** a movement that emerged in South America with the intention of making psychology a force in the emancipation of peoples from poverty and injustice rather than a force for maintaining the status quo. The movement was so named by analogy with the liberation theology that arose in Latin American churches in the late 1960s and early 1970s.

**libidinal development** see PSYCHOSEXUAL DEVELOPMENT.

**libidinal stage** in classical psychoanalytic theory, any of the various defined stages of PSYCHOSEXUAL DEVELOPMENT.

**libidinal transference** in classical psychoanalysis, the TRANSFERENCE of the patient's LIBIDO, or feelings of love,

from his or her parents or other loved object onto his or her therapist.

**libidinal types** in classical psychoanalytic theory, a personality classification based on the distribution of LIBIDO, or sexual energy, in the psyche. In the **erotic type**, the libido remains largely in the ID and the main interest is in loving and being loved. In the **obsessional type**, the libido is largely invested in the SUPEREGO and the individual is dominated by conscience. In the **narcissistic type**, the libido is primarily invested in the EGO and the main interest is in self-preservation, with little concern for others or for the dictates of the superego. [devised by Sigmund FREUD]

**libidinization** *n.* see EROTIZATION.

**libido** *n.* **1.** in psychoanalytic theory, either the PSYCHIC ENERGY of the LIFE INSTINCT in general or the energy of the SEXUAL INSTINCT in particular. In his first formulation, Sigmund FREUD conceived of this energy as narrowly sexual, but subsequently he broadened the concept to include all expressions of love, pleasure, and self-preservation. See also EROS. **2.** in the ANALYTIC PSYCHOLOGY of Carl JUNG, the general life force that provides energy for all types of activities: biological, sexual, social, cultural, and creative. **3.** more generally, sexual energy or desire. —**libidinal** *adj.* —**libidinize** *vb.* —**libidinous** *adj.*

**libido-binding activity** an activity in which members of a therapy group concentrate libidinal energies on a specific interest or occupation rather than on activities that stimulate the libido. [introduced by Russian-born U.S. psychotherapist Samuel Richard Slavson (1890–1981)]

**Librium** *n.* a trade name for CHLORDIAZEPOXIDE.

**license** *n.* permission granted by a government agency for an individual or organization to engage in a given occupation or business on the basis of examination, proof of education, or both rather than on measures of performance. See PROFESSIONAL LICENSING. —**licensed** *adj.* —**licensure** *n.*

**licensed practical nurse (LPN)** a graduate of an accredited school of practical nursing who has been legally authorized to practice as a nurse. Also called **licensed vocational nurse (LVN)**.

**licking behavior** the licking by an animal of itself or another animal, particularly an offspring. Licking behavior appears to be part of the maternal behavior of many mammals; the pregnant female licks itself before giving birth, then licks the offspring, thereby establishing a means of identifying its own young. Licking of the offspring's urine may serve to maintain the female in fluid HOMEOSTASIS during lactation.

**lickometer** *n.* see DRINKOMETER.

**lid apraxia** see OCULOMOTOR APRAXIA.

**lie** *n.* a false statement or a false presentation, known to be untrue, that is made with the intention to deceive. Despite the moral and legal proscription against lies, they are a cognitive signal that the liar understands enough of what others are thinking to be motivated to lie to them. In children, acquiring an understanding of this sort represents a cognitive milestone usually reached around age 3 (see THEORY OF MIND). At that age, a child's initial lies tend to be indiscriminate; he or she is not yet aware of the moral qualms associated with them. By age 4, children can reliably tell the difference between harmful lies and white lies, and they stop lying indiscriminately. As they grow older,

their lying becomes more sophisticated (i.e., plausible), a social skill that is influenced by their particular culture, which plays a pivotal role in determining how they lie and when they feel it is appropriate to lie. See also FABRICATION; PATHOLOGICAL LYING. Compare CONFABULATION; FABULATION. —**liar** *n.* —**lie**, **lying** *vb.*

**Liebmann effect** the perceived merger of different visual stimuli that occurs when the border between them is defined only by hue. [Susanne E. Liebmann (1897–1990), German psychologist]

**lie detector** see POLYGRAPH.

**lie scale** a set of items within a psychological instrument (particularly a personality assessment) used to indicate whether a respondent has been truthful in answering. For example, an honest participant would respond similarly to the items "I never regret the life decisions I have made" and "I've never done anything I later wished I could take back," which are different ways of presenting the same concept. Conversely, a respondent trying to present himself or herself as positively as possible might answer such related questions inconsistently.

**life-change unit (LCU)** a unit of measurement on the LIFE EVENTS RATING SCALE, on which diverse life experiences are assigned numerical values in accordance with their stress-generating potential. For example, divorce and death of a spouse or significant other are ranked as high stress generators on the scale, retirement falls about midscale, and moving to a new house and a change in sleeping habits are ranked progressively lower. Some research indicates that individuals with a high cumulative LCU score (i.e., a high **potential-stress score**) show more health changes than other participants. See also LIFE CRISIS.

**life coaching** a form of teaching and encouragement (one-to-one or coach-to-group) designed to help individuals identify and meet goals of importance to them in their personal and work lives.

**life crisis** a period of distress and major adjustment associated with a significant life event, such as divorce or death of a family member. In studies relating health to life crises, individuals experiencing recent major stress-producing events are more likely than others to show significant alterations in mental and physical health status.

**life cycle** **1.** the sequence of developmental stages through which an organism passes between a specified stage of one generation (e.g., fertilization, birth) and the same stage in the next generation. **2.** the series of stages that characterizes the lifespan of a group, institution, culture, or product.

**life events** important occasions throughout the lifespan that are either age-related and thus expected (e.g., marriage, retirement) or unrelated to age and unexpected (e.g., accidents, relocation). Contextual theories of personality often assume that personality is shaped by reactions to stress produced by CRITICAL LIFE EVENTS. See also OFF-TIME LIFE EVENTS; ON-TIME LIFE EVENTS.

**Life Events Rating Scale** an instrument used to measure the relative impact of diverse stress-producing life experiences, changes, and crises. The derived score is expressed in LIFE-CHANGE UNITS. The scale is more formally known as the **Social Readjustment Rating Scale**. [developed in 1967 by U.S. psychiatrists Thomas H. Holmes and Richard H. Rahe]

**life expectancy** the number of years that a person can,

on average, expect to live. Life expectancy is based on statistical probabilities and increases with improvements in medical care and hygiene.

**life force** see ÉLAN VITAL.

**life goal** in the individual psychology of Alfred ADLER, the individual's concept of what he or she could attain in life, seen as a means of compensating for real or imagined inferiority. See also LIFE PLAN.

**life history** in therapy and counseling, a systematic account of the client's development from birth to the present, including the meaningful aspects of the client's emotional, social, and intellectual development. The account is taken by the therapist or counselor directly from the client and may additionally be derived from autobiographical material.

**life-history method** a STRUCTURED INTERVIEW that attempts to summarize historical data about events that are relevant to evaluating a person's current functioning.

**life instinct** in psychoanalytic theory, the drive comprising the SELF-PRESERVATION INSTINCT, which is aimed at individual survival, and the SEXUAL INSTINCT, which is aimed at the survival of the species. In the DUAL INSTINCT THEORY of Sigmund FREUD, the life instinct, or EROS, stands opposed to the DEATH INSTINCT, or THANATOS. Also called **erotic instinct**.

**life lie** **1.** the false conviction held by some individuals that their life plan is bound to fail due to other people or to circumstances beyond their control. This was postulated as a method of freeing oneself from personal responsibility. [defined by Alfred ADLER] **2.** any false belief around which an individual's life is built.

**lifeline** *n.* a therapeutic technique used in group or individual therapy in which each individual draws lines representing his or her life, marking past and future expected events with angles indicating even, upward, or downward progression of functioning, as well as specific dates and the affect surrounding these events. Discussion of this diagram with the therapist can enhance awareness and understanding of the individual's life patterns.

**life plan** in the individual psychology of Alfred ADLER, an individual's style of life and GUIDING FICTION as he or she strives to reach his or her LIFE GOAL.

**life review** the process whereby individuals, especially older adults, reflect upon and analyze past life experiences. Life review, or analytical REMINISCENCE, is often made use of in counseling older adults with symptoms of mild depression or people of any age with terminal illness, sometimes as an adjunct to psychotherapy. [defined in 1961 by U.S. gerontologist and psychiatrist Robert N. Butler (1927–2010)]

**life rhythm** see BIOLOGICAL RHYTHM.

**life satisfaction** the extent to which a person finds life rich, meaningful, full, or of high quality. Numerous standardized measures have been developed to provide an index of a person's life satisfaction in comparison to various normative groups (e.g., SATISFACTION WITH LIFE SCALE). Improved life satisfaction is often a goal of treatment, especially with older people. See also QUALITY OF LIFE.

**life space** in the FIELD THEORY of Kurt LEWIN, the "totality of possible events" for one person at a particular time; a person's possible options together with the environment that contains them. The life space is a representation of the

environmental, biological, social, and psychological influences that define one person's unique reality at a given moment in time. Contained within the life space are positive and negative valences, that is, forces or pressures on the individual to approach a goal or move away from a perceived danger.

**life-space interview** a form of CRISIS INTERVENTION in which children in day and residential treatment are interviewed by staff members during moments of crisis or stress, for example, immediately after receiving an upsetting letter or after being attacked by another child. Efforts are made to convert these events into therapeutic experiences by such means as restoring the children's belief in themselves and strengthening their ego. [originated by Austrian-born U.S. psychologist Fritz Redl (1902–1988)]

**lifespan** *n.* **1.** the maximum age that can be obtained by any given individual within a particular species. **2.** the precise length of an individual's life.

**lifespan contextualism** a perspective on human development that views people as both products and producers of their own development, interacting throughout life with family, peers, and other social groups and institutions.

**lifespan developmental psychology** the study of psychological and behavioral change across and within individuals from conception through death using a LIFESPAN PERSPECTIVE. Such an approach assumes that human developmental processes are complex, interactive, and fully understood only in the context of influencing events. It also assumes that there is no end state of maturity and that not all developmental change is related to chronological age.

**lifespan perspective** a general perspective emphasizing (a) that human development is a lifelong process of change from conception to death; (b) that developmental change is multidimensional and multidirectional, involving both growth and decline in one's performance (e.g., of cognitive tasks); and (c) that there is plasticity in human behavior throughout the entire lifespan.

**life stress** severe strain produced by CRITICAL LIFE EVENTS or similar experiences, such as failure at work, marital separation, or loss of a loved one.

**lifestyle** *n.* **1.** the typical way of life or manner of living that is characteristic of an individual or group, as expressed by behaviors, attitudes, interests, and other factors. **2.** in the individual psychology of Alfred ADLER, an individual's characteristic way of overcoming or compensating for feelings of inadequacy. According to Adler, a lifestyle is first adopted in childhood, when the key factors informing it will be genetic endowment, upbringing, and interpersonal relations within the family.

**Lifetime of Experiences Questionnaire (LEQ)** a questionnaire given to older people (those over 65 years old or who have already retired) to assess both their current level of mental activity and the full range of their mental pursuits during earlier life, including their educational, occupational, social, and leisure activities throughout young and middle adulthood. The questionnaire is designed to estimate COGNITIVE RESERVE in older adults; higher scores (i.e., more engagement in complex mental activities) are proposed to predict a slower rate of age-related cognitive decline and a reduced risk of dementia. [developed in 2007 by Australian neuropsychiatrists Michael J. Valenzuela and Perminder Sachdev]

**lifetime personality** the pattern of behavior that dominates a person's life between birth and death. [from the personality theory of Henry Alexander MURRAY]

**lifetime risk** the odds that one will be diagnosed with a disease or condition during one's lifetime (usually stated in terms of 70 to 85 years). It is often important for individuals undergoing GENETIC COUNSELING to differentiate lifetime risk from the risk of being diagnosed with the disease in the next 5 or 10 years.

**ligand** *n.* a molecule that binds to a specific site on another molecule, for example, a hormone binding to its receptor molecule at the surface of a cell.

**ligand-gated ion channel** an ION CHANNEL that opens or closes in response to the binding of a molecule (the ligand) to a receptor. An example is the IONOTROPIC RECEPTOR. Compare VOLTAGE-GATED ION CHANNEL.

**light adaptation** the process by which the eye adjusts to conditions of high illumination, as occurs when a person exits a dark theater into a sunny parking lot. It takes less than 10 minutes and involves constriction of the pupil and a shift in the sensitivity of the retina so that the RETINAL CONES become active in place of the RETINAL RODS. Compare DARK ADAPTATION.

**light cell** see TYPE II CELL.

**light-dark cycle** the schedule according to which the lights are turned on and off in rooms housing research animals. A 12-hour light-dark cycle, in which the lights are on for 12 consecutive hours and then off for 12 consecutive hours, is commonly used.

**light induction** the production or alteration of sensation in one part of the visual field by stimulation in an adjacent part of the field (e.g., INDUCED COLOR).

**lightness constancy** see BRIGHTNESS CONSTANCY.

**lightness contrast** see BRIGHTNESS CONTRAST.

**lightning calculator** an individual capable of extremely rapid mental calculations. Although some of these individuals have a high IQ, most of them are people with a very well developed SPECIFIC ABILITY but not a particularly high IQ.

**light pointer** a form of HEADSTICK fitted with a light that can activate an ASSISTIVE TECHNOLOGY device.

**light reflex** see PUPILLARY REFLEX.

**light sensitivity** see PHOTOPHOBIA.

**light therapy** see PHOTOTHERAPY.

**light trance** see TRANCE.

**likelihood** *n.* in statistics, the probability of obtaining a particular set of results given a set of assumptions about the DISTRIBUTION of the phenomena in the population and the PARAMETERS of that distribution.

**likelihood function** a formula that yields the probability of obtaining a particular distribution of values in a sample for each known value of an associated population PARAMETER. In other words, it indicates how likely a particular population is to produce the observed sample data under certain conditions.

**likelihood principle** **1.** the generality originally proposed in 1867 by Hermann von HELMHOLTZ that an observer will tend to perceive the most likely interpretation of a visual stimulus (i.e., the one with the highest probability

of being correct). This is in contrast to the **simplicity principle**, elaborated in 1953 by U.S. psychologist Julian E. Hochberg (1923– ) with Edward McAlister, which states that an observer will tend to perceive the simplest interpretation (i.e., the one with the shortest description). **2.** a foundational tenet of statistical inference stating that where there is an unknown population PARAMETER,  $\theta$ , and an observed sample distribution,  $x$ , all relevant information about the population distribution is contained in the LIKELIHOOD FUNCTION for  $x$ .

**likelihood ratio (LR)** the ratio of two probabilities,  $a/b$ , where  $a$  is the probability of obtaining the data observed if a particular research hypothesis (A; the NULL HYPOTHESIS) is true and  $b$  is the probability of obtaining the data observed when a different hypothesis (B; the ALTERNATIVE HYPOTHESIS) is true.

**Likert scale** a type of direct attitude measure that consists of statements reflecting strong positive or negative evaluations of an object. Five-point scales are common and a neutral middle point may or may not be included. For example, an assessment item using a Likert scale response format (i.e., a **Likert-type question** or **Likert-type item**) might include the following statement choices: *strongly disagree, disagree, neither disagree nor agree, agree, and strongly agree*. The respondent chooses the option most representative of his or her view (e.g., on whether same-sex marriages should be permitted) and these ratings are summed to provide a total attitude score for a topic of interest. Also called **Likert summated rating procedure**. [Rensis Likert (1903–1981), U.S. psychologist]

**liking scale** a measure of a person's degree of attraction to another individual, usually involving a willingness to be in the other's company as well as a positive evaluation of the other's personality characteristics. One such scale was published by U.S. social psychologist Zick Rubin (1944– ) in 1970. Although Rubin distinguished between this measure and his LOVE SCALE, studies have shown that the two indices are usually positively correlated.

**Lilliputian hallucination** a VISUAL HALLUCINATION of objects, animals, or people greatly reduced in size, which may result from a number of conditions, such as DELIRIUM TREMENS, typhoid, or brain tumors in the temporal lobe. The name is derived from Jonathan Swift's *Gulliver's Travels* (1726), in which Gulliver journeys to the imaginary land of Lilliput, populated by tiny people. Also called **diminutive visual hallucination**; **microptic hallucination**. See also MICROPSIA.

**limbic cortex** the portions of the cerebral cortex, especially the CINGULATE CORTEX, that are associated with the LIMBIC SYSTEM.

**limbic epilepsy** a type of neurological disorder in which recurrent seizures spontaneously arise in areas of the LIMBIC SYSTEM. Recent research suggests that altered connectivities between hippocampal GRANULE CELLS and PYRAMIDAL CELLS—as mediated by NEUROTROPHINS and their receptors—play a crucial role in the development of limbic epilepsy by potentially changing the balance of excitation and inhibition in the hippocampus and amygdala, which are essential to memory and emotion. ACETYLCHOLINE and other amino acid neurotransmitters have also been implicated in the etiology of limbic epilepsy, as have early life stressors, such as maternal separation. Additionally, FEBRILE SEIZURES may contribute to the generation of subsequent limbic epilepsy by increasing hippocampal ex-

citability. Also called **medial temporal lobe epilepsy**; **mesial temporal lobe epilepsy**.

**limbic lobe** a fifth subdivision of each cerebral hemisphere that is often distinguished in addition to the four main lobes (see CEREBRUM). It comprises the CINGULATE CORTEX, PARAHIPPOCAMPAL GYRUS, and HIPPOCAMPAL FORMATION.

**limbic system** a loosely defined, widespread group of brain nuclei that innervate each other to form a network that is involved in autonomic and visceral processes and mechanisms of emotion, memory, and learning. It includes portions of the cerebral cortex (see LIMBIC LOBE), THALAMUS, and certain cortical and subcortical structures, such as the HIPPOCAMPUS, AMYGDALA, and SEPTAL AREA.

**Limbitrol** *n.* a trade name for a combination of the tricyclic antidepressant AMITRIPTYLINE and the benzodiazepine CHLORDIAZEPOXIDE, appropriate for the treatment of concurrent anxiety and depression but not now commonly used.

**limb kinetic apraxia** see APRAXIA.

**limen** *n.* see THRESHOLD.

**limerence** *n.* an intense sexual desire and a strong concern for the other person in a romantic relationship, accompanied by great sensitivity to how that other person is reacting to oneself. Limerence typically diminishes in intensity a month or two after the relationship is formed. See also PASSIONATE LOVE; ROMANTIC LOVE. [first described in 1979 by U.S. psychologist Dorothy Tennov (1928–2007)]

**liminal** *adj.* relating to the THRESHOLD of a sensation.

**limited-capacity system** a conceptualization of WORKING MEMORY in which resource constraints restrict the processing of information. When new information is encountered, older information is either relegated to long-term memory or eliminated, providing the resources to retain the newer data. ATTENTION and CONSCIOUSNESS are often similarly conceived of as limited-capacity systems. See also CHUNKING.

**limited competency** a determination by a court that a person has the capacity to manage some but not all of his or her activities. A limited guardian is appointed to assist the individual in exercising certain legal rights, such as the right to enter into contracts, get married, provide consent (e.g., for medical treatment), or vote.

**limited guardianship** a form of legal guardianship of a child or adult with a disability (e.g., intellectual disability) in which a guardian has authority with respect to some areas of activity (e.g., legal, financial, health-related) in which the ward is not capable. In some jurisdictions, the term is used interchangeably with CONSERVATORSHIP.

**limited hold** a feature that can be added to a SCHEDULE OF REINFORCEMENT in which the opportunity for REINFORCEMENT is limited to a fixed period. For example, if a FIXED-INTERVAL SCHEDULE in which reinforcement is given after 1 minute had a 2-second limited hold, then only responses occurring within 2 seconds of the end of the 1-minute interval would be reinforced.

**limited responsibility** see DIMINISHED RESPONSIBILITY.

**limphthisis** *n.* the physical and mental signs of emaciation caused by severe undernourishment.

**Limulidae** *n.* see HORSESHOE CRAB.

**linear** *adj.* describing any relationship between two variables ( $x$  and  $y$ ) that can be expressed in the form  $y = a + bx$ , where  $a$  and  $b$  are numerical constants. No COEFFICIENT can be raised to a power greater than 1 or be the denominator of a fraction. When depicted graphically, the relationship is a straight line. Compare NONLINEAR.

**linear causation** the simplest type of causal relationship between events, usually involving a single cause that produces a single effect or a straightforward CAUSAL CHAIN. Linear causation is often contrasted with more complex models of causation involving multiple causes and effects (see CAUSAL AMBIGUITY; CAUSAL TEXTURE), FEEDBACK LOOPS, and indirect or REMOTE CAUSES.

**linear correlation** a measure of the degree of association between two variables that are assumed to have a LINEAR RELATIONSHIP, that is, to be related in such a manner that their values form a straight line when plotted on a graph. It provides an index of the degree of constant change in the value of one variable ( $y$ ) for each unit change in the value of another variable ( $x$ ).

**linearizing** *n.* see LINEAR TRANSFORMATION.

**linear model** any model for empirical data that attempts to relate the values of an outcome or dependent variable to the explanatory or independent variables through a linear function, this is, one that simply sums terms and includes no exponents greater than 1. Most commonly used statistical techniques (ANALYSIS OF VARIANCE, REGRESSION ANALYSIS, etc.) can be represented as linear models. Compare NONLINEAR MODEL.

**linear perspective** one of the monocular DEPTH CUES, arising from the principle that the size of an object's visual image is a function of its distance from the eye. Thus, two objects appear closer together as the distance from them increases, as seen in the tracks of a railroad that appear to converge on the horizon.

**linear program** a form of PROGRAMMED INSTRUCTION in which the learner independently studies information presented (e.g., via a booklet) in small, discrete, step-by-step frames that usually become progressively more complex. Correct answers to review questions are given after each frame so as to provide immediate feedback and continuous reinforcement.

**linear regression** a REGRESSION ANALYSIS in which the predictor or independent variables ( $x$ s) are assumed to be related to the criterion or dependent variable ( $y$ ) in such a manner that increases in an  $x$  variable result in consistent increases in the  $y$  variable. In other words, the direction and rate of change of one variable is constant with respect to changes in the other variable. The analysis yields a REGRESSION EQUATION that includes an INTERCEPT and REGRESSION COEFFICIENTS for the predictors. Compare NONLINEAR REGRESSION.

**linear relationship** an association between two variables that when subjected to REGRESSION ANALYSIS and plotted on a graph forms a straight line. In linear relationships, the direction and rate of change in one variable are constant with respect to changes in the other variable. Compare NONLINEAR RELATIONSHIP.

**linear system** a system in which the response to a complex input is the sum of the responses to the separate components of the input (this is the principle of **superposition**). In addition, another condition (**homogeneity**) is necessary:



If an input is increased by a certain factor, the output must increase by the same factor.

**linear transformation** the TRANSFORMATION of a set of raw data using an equation that involves addition, subtraction, multiplication, or division with a constant. An example is the transformation of  $x$  to  $y$  by means of the equation  $y = a + bx$ , where  $a$  and  $b$  are numerical constants. A plot of such transformed data would form a straight line. Data are often subjected to **linearizing** to determine whether a linear model provides a better fitting or more parsimonious explanation of the variables. Compare NONLINEAR TRANSFORMATION.

**linear type** a body type characterized by a slender, narrow-chested, long-necked, long-nosed physique, sometimes equated with the ASTHENIC TYPE in KRETSCHEMER TYPOLOGY.

**line graph** a graph in which data points representing a series of individual measurements are shown connected by straight line segments. Line graphs often are used to show trends over time, such as population growth. Also called **line chart**.

**line management** a system of management in which individuals have authority over those immediately below them in the chain of command and are accountable to those immediately above. See UNITY OF COMMAND.

**line of beauty** an S-shaped curve said by the British painter William Hogarth (1697–1764) to possess maximal beauty.

**line of fixation** a straight line between the object of visual focus and the FOVEA CENTRALIS.

**line of regard** a straight line between an object being viewed and the center of rotation of the eye.

**line spectrum** see SOUND SPECTRUM.

**lineup** *n.* an identification procedure in which several individuals are presented to an eyewitness of a crime at the same time or in a sequence. The witness is asked to indicate if he or she recognizes one of the lineup members as the perpetrator of the crime.

**lingering trajectory** see TRAJECTORIES OF DYING.

**lingua franca** a common language used by people of different mother tongues for purposes of communication. Such a language may, but need not, be a hybrid of the mother tongues. Compare CREOLE; PIDGIN.

**lingual** *adj.* of or relating to the tongue or to speech and languages.

**lingual frenulum** see FRENULUM.

**lingual gland** any of the glands on the surface of the tongue whose seromucous secretions are thought to circulate tastants among the taste cells.

**lingual gyrus** a relatively short convolution of the inferior (lower) brain surface that extends from the occipital to temporal lobes and is medial to the FUSIFORM GYRUS. It is important in recognizing faces and landmarks and has been implicated in the generation and recall of dreams.

**lingual nerve** a branch of the TRIGEMINAL NERVE that supplies fibers to the mucous membranes of the mouth and the anterior (front) two thirds of the tongue, including the taste-bud papillae. Also called **gustatory nerve**.

**lingual papilla** see PAPILLA.

**linguist** *n.* a scholar who specializes in the study of lin-

guistics or any of its branches. A linguist may focus on the characteristics of a specific language or group of languages or on certain features of human language in general. He or she will not necessarily have a command of multiple languages, the more precise term for such a person being a **polyglot**.

**linguistic approach** a method of reading instruction that applies what the child already knows about language from having learned to speak it. Letters and sound equivalents are taught by being embedded in meaningful words with regular spelling patterns to maximize the similarities between the familiar spoken language and the unfamiliar written language.

**linguistic awareness** see METALINGUISTIC AWARENESS.

**linguistic determinism** the hypothesis, most commonly associated with the U.S. linguists Edward Sapir (1884–1939) and Benjamin Lee Whorf (1897–1941), that the semantic structure of a particular language determines the structure of mental categories among its speakers. Because languages differ in how they refer to basic categories and dimensions, such as time, space, and duration, native speakers of these languages are assumed to show corresponding differences in their ways of thinking. Also called **Sapir-Whorf hypothesis**; **Whorfian hypothesis**. Compare LINGUISTIC RELATIVITY. See also ANTHROPOLOGICAL LINGUISTICS; CONTRASTIVE RHETORIC.

**linguistic intergroup bias** the tendency to describe and evaluate positive behaviors by INGROUP members and negative behaviors by OUTGROUP members more abstractly than negative ingroup and positive outgroup behaviors. See also INGROUP BIAS.

**linguistic-kinesic method** the objective study of disordered behavior in terms of language and movement involved in interactions between individuals.

**linguistic minority** the group of individuals in a polity who are native speakers of a minority language.

**linguistic relativity** the observation that languages differ in the ways in which semantic space is identified and categorized. For example, the Native American language Hopi uses one word for water in a natural setting and another word for water in a vessel but has only one word for flying objects, which is applied to birds, insects, airplanes, and the like. Linguistic relativity is not to be equated with LINGUISTIC DETERMINISM, which is a theoretical commitment to the idea that these differences have cognitive consequences. See ANTHROPOLOGICAL LINGUISTICS.

**linguistics** *n.* the scientific study of the physical, structural, functional, psychological, and social characteristics of human language. See also PSYCHOLINGUISTICS; SOCIOLINGUISTICS.

**linguistic typology** the classification of languages with respect to their structural characteristics rather than their historical relationships (GENETIC LINGUISTICS) or geographical distribution (AREAL LINGUISTICS).

**linguistic universal** see LANGUAGE UNIVERSAL.

**link analysis** in ergonomics, the analysis of operational sequences and the movements of workers or objects that these entail to determine the design of tools, equipment, jobs, and facilities that will best serve worker efficiency and safety.

**linking verb** see COPULA.

**Lioresal** *n.* a trade name for BACLOFEN.

**liothyronine** *n.* a pharmaceutical preparation of L-TRI-IODOTHYRONINE, a naturally occurring thyroid hormone, used to treat conditions associated with thyroid deficiency. It is also used as an adjunct to standard antidepressant therapy in the management of depression that has not responded to standard therapy alone. U.S. trade name (among others): **Cytomel**.

**lip biting** habitual biting of the lips, which may be a nervous habit, a stereotyped behavior (see STEREOTYPY), or a symptom of a disorder, such as LESCH-NYHAN SYNDROME. Also called **morsicatio labiorum**.

**lip eroticism** the use of the lips to obtain sexual arousal or satisfaction.

**lipid-metabolism disorders** a group of metabolic anomalies characterized by abnormal levels of fatty substances in the blood or other tissues resulting from genetic, endocrine, or external factors or organ failure. Lipid-metabolism disorders include NIEMANN-PICK DISEASE and TAY-SACHS DISEASE.

**lipodystrophy** *n.* any disorder of lipid metabolism. Kinds of lipodystrophy include **intestinal lipodystrophy**, in which a malabsorption of fats from the digestive tract may be associated with lesions in the central nervous system (as in **Whipple's disease**), and **progressive lipodystrophy**, marked by a symmetrical loss of subcutaneous fat deposits and abnormal deposits of fat around the kidney, heart, and abdominal cavity. No consistent neurological abnormalities are associated with the latter form of lipodystrophy, but nearly 20% of the patients in one study showed signs of intellectual disability. The cause of progressive lipodystrophy is unknown. Lipodystrophy is also associated with diabetes mellitus in a form marked by loss of subcutaneous fat in areas injected with insulin; this is known as **lipotrophic diabetes mellitus** or **insulin lipodystrophy**. Manifestations of lipodystrophy are also often found in people with HIV. See also PARTIAL LIPODYSTROPHY; TOTAL LIPODYSTROPHY.

**lipostatic hypothesis** a hypothesis stating that the long-term regulation of food intake is governed by the concentration in the blood of free fatty acids, which result from the metabolism of fat. High concentrations indicate the breakdown of fat, and food consumption increases accordingly; low concentrations are associated with reduction in consumption. Also called **lipostatic theory**. See also GLUCOSTATIC THEORY. [originally proposed in 1953 by Gordon C. Kennedy]

**lipotrophic diabetes mellitus** see LIPODYSTROPHY.

**Lipps illusion theory** a theory that explains the perception of a variety of visual illusions as visual distortions induced by the emotional state of the observer. [Theodor **Lipps** (1851–1914), German philosopher and psychologist]

**lip pursing** a facial contortion in which the lips protrude in a manner that resembles pouting or a snout. First described (as **Schnauzkrampf**) by German psychiatrist Karl Ludwig Kahlbaum (1828–1899), it is most commonly associated with CATATONIC SCHIZOPHRENIA.

**lipreading** *n.* a method used by some people with hearing loss to understand spoken words in which the listener interprets the speaker's lip movements. Some authorities claim that only about one third of speech sounds can be accurately read in this way and that attention to facial expression and general body language, with the additional

use of SIGN LANGUAGE, assist significantly in comprehension. Also called **speechreading**.

**liquid 1.** *adj.* in phonetics, denoting a frictionless speech sound produced when the SOFT PALATE is raised and the airstream is only partially obstructed, such as [l] or [r]. **2.** *n.* a liquid speech sound.

**liquidation of attachment** the process of freeing a patient from a painful situation by unraveling the ATTACHMENTS by which he or she is bound. [defined by Pierre JANET]

**lisdexamfetamine** *n.* a PRODRUG of DEXTROAMPHETAMINE used in the treatment of attention-deficit/hyperactivity disorder. Potentially serious side effects include slowed growth in children, cardiovascular risks (e.g., myocardial infarction, hypertension), and psychotic or manic symptoms. U.S. trade name: **Vyvanse**.

**lisp 1.** *n.* incorrect production of SIBILANT sounds caused by faulty tongue placement or abnormalities of the articulatory mechanism. Speech and language pathologists have described various types of lisps, including four primary forms: the **interdental** (or **frontal**) **lisp**, in which the tongue protrudes between the front teeth and airflow is directed forward and only partially obstructed; the **dental lisp**, in which the airflow is partially impeded by contact with the tongue as it rests on or pushes against the front teeth or ALVEOLAR RIDGE; the **lateral lisp**, in which airflow and saliva are pushed forward over the sides of the broadly extended tongue, creating a wet sound; and the **palatal lisp**, in which the airflow is partially disrupted by the middle area of the tongue touching the rear portion of the SOFT PALATE. See also SIGMATISM. **2.** *vb.* to speak using a lisp. —**lisping** *n.*

**LISP** *n.* LIS(t) P(rocessing): the second oldest high-level computer programming language still in use. It was the primary language for writing ARTIFICIAL INTELLIGENCE programs from the 1960s through the 1980s. The list is the primary data structure, and the basic unit of the language, the *s-expression* (symbolic expression), is defined recursively (i.e., if X is an *s-expression*, then so is the list of X). [created by U.S. computer scientist John McCarthy (1927–2011)]

**lissencephaly** *n.* severe malformation of the convolutions (GYRI) in the cerebral cortex due to abnormal neuronal migration during development. It is an umbrella term encompassing several conditions: **agyria**, the complete absence of convolutions; **pachygyria** (or **macrogyria**), unusually thick convolutions; and **polymicrogyria** (or **micropolygyria**), unusually small but numerous convolutions. Lissencephaly results in severe developmental delay, severe to profound intellectual disability, motor impairment, and epilepsy.

**listening** *n.* an essential activity in therapy and counseling that involves attending to the words and actions of the client as well as to the intentions conveyed by the words. See also ACTIVE LISTENING.

**listening attitude 1.** in a therapeutic setting, a therapist's openness to a client's personal experience, or a client's openness to his or her own personal experience. **2.** a behavior set in which a person expects and prepares to receive a message. Italian-born U.S. psychiatrist Silvano Arieti (1914–1982) claimed that a person with schizophrenia who is habitually prepared to experience a hallucination may learn to avoid it when made aware of this attitude.

**listening strategy** the tendency for listeners to pay

more attention at the beginning and end of a talk than in the middle.

**listwise deletion** a strategy for dealing with the problem of missing data in which an entire case record is excluded from statistical analysis if values are found to be missing for any variable of interest. For example, consider a researcher examining the relationships among grade point averages in high school, scores on college admissions tests, and grade point averages in college. If, for whatever reason, a value has not been recorded for one of those variables for certain participants, all of the information for those individuals is removed from the data set and analyses are performed only on the remaining (complete) records. Also called **casewise deletion**; **complete-case analysis**. Compare PAIRWISE DELETION.

**literacy** *n.* **1.** the ability to read and write in a language. See also BILITERACY. **2.** the quality of being educated as well as knowledgeable. **3.** the quality of having a clear understanding of traditional and contemporary literature. —**literate** *adj.*

**literacy test** any test that examines the ability to read and write or an individual's understanding of literature.

**literal alexia** a form of ALEXIA in which a person cannot recognize individual letters or numerals and confuses such letters as *d* and *b*. Also called **literal dyslexia**.

**literalism** *n.* **1.** adherence to observable facts, as exhibited in Jean PIAGET's construct of OBJECTIVE RESPONSIBILITY. **2.** verbal or nonverbal answers of "yes" or "no," without cognitive elaboration, to questions during HYPNOSIS, asserted by some but strongly refuted by others to be a marker of hypnotic trance. **3.** adherence to the explicit meaning of a text or doctrine, as in biblical literalism.

**literal paraphasia** a type of speech disturbance in which PHONEMES are substituted, exchanged, deleted, or added in speech, making it difficult to comprehend what the individual is trying to say. For example, *tar* may be used for *car*. Also called **phonological paraphasia**. See PARAPHASIA.

**literal replication** see REPLICATION.

**lithium** *n.* an element of the alkali metal group whose salts are used in psychopharmacotherapy as MOOD STABILIZERS. Lithium salts were first used for the treatment of mania in the 1940s, but widespread use was limited by their toxicity. However, after further investigations into their role in treating bipolar depression and better appreciation of the appropriate dosage, lithium salts entered broader clinical practice in the 1970s. Although its primary indication is in managing bipolar disorder, lithium has some efficacy in managing acute manic phases and in reducing relapse. Its mechanism of action remains unclear; it may work via inhibition of the recycling of inositol from the INOSITOL PHOSPHATES, which are second messengers in cellular signaling. Toxic doses are no more than two to three times the therapeutic dose, and serum monitoring is required. Symptoms of acute toxicity include tremors, diarrhea, vomiting, and incoordination; at higher doses, disturbances of heart rhythm and neurological function leading to coma and death may occur. Long-term lithium use can cause thyroid and renal dysfunction in a small percentage of patients. Lithium has been associated with fetal cardiac malformation (Ebstein's anomaly), and its use during pregnancy is not recommended. U.S. trade names (among others): **Eskalith**; **Lithobid**.

**litigious paranoia** a type of paranoid disorder characterized by constant quarreling, claims of persecution, and insistence that one's rights have been breached. The individual usually threatens to go to court—and frequently does so—to seek redress for exaggerated or imagined wrongs. Also called **paranoia querulans**; **paranoid litigious state**.

**Little Albert** the name of a boy used by John B. WATSON and his graduate student Rosalie Rayner (1899–1935) to demonstrate classical (or Pavlovian) fear conditioning in humans.

**Little Hans** a landmark case of Sigmund FREUD's, illustrating the OEDIPUS COMPLEX. Freud traced a child's phobia for horses to CASTRATION ANXIETY stemming from masturbation, to repressed death wishes toward the father, and to fear of retaliation owing to rivalry with the mother, with DISPLACEMENT of these emotions onto horses. Freud never actually met the boy but analyzed him through written communication with the father. The case was reported in "Analysis of a Phobia in a Five-Year-Old Boy" (1909).

**living will** see ADVANCE DIRECTIVE.

**LLD** abbreviation for language learning disability. See SPECIFIC LANGUAGE IMPAIRMENT.

**Lloyd Morgan's canon** the principle that the behavior of a nonhuman animal should not be interpreted in complex psychological terms if it can instead be interpreted with simpler concepts. Lloyd Morgan's canon, proposed in 1894, helped eliminate the older concept of ANTHROPO-MORPHISM, or the endowment of animals with human traits, although some recent authors have argued that its application oversimplifies the abilities of animals. Also called **Morgan's canon**; **Morgan's principle**. [Conwy LLOYD MORGAN]

**LLR** abbreviation for LOG-LIKELIHOOD RATIO.

**L-methylfolate** *n.* the active form of the B vitamin folate. It is available as a prescription MEDICAL FOOD to treat people with folate deficiencies, depression (as an adjunct to antidepressants), or schizophrenia (as an adjunct to antipsychotics). U.S. trade name: **Deplin**.

**LMX theory** abbreviation for LEADER-MEMBER EXCHANGE THEORY.

**LNNB** abbreviation for LURIA-NEBRASKA NEUROPSYCHOLOGICAL BATTERY.

**lobe** *n.* a subdivision of an organ, such as the brain or the lungs, particularly when rounded and surrounded by distinct structural boundaries, such as fissures. The four main lobes of each cerebral hemisphere of the brain are the FRONTAL LOBE, PARIETAL LOBE, TEMPORAL LOBE, and OCCIPITAL LOBE. There are also subdivisions of each of these lobes; for example, the temporal lobe comprises the inferior, middle, and superior temporal lobes. —**lobar** *adj.* —**lobate** *adj.*

**lobectomy** *n.* complete or partial surgical removal of a lobe, particularly in the brain. The most frequently performed lobectomy is done for seizure control and involves the anterior temporal lobe (see TEMPORAL LOBECTOMY).

**lobotomy** *n.* incision into various nerve tracts in the FRONTAL LOBE of the brain. The original surgical procedure, called **prefrontal** (or **frontal**) **lobotomy**, was introduced in 1936 by Portuguese neurologist Antonio Egas Moniz (1874–1955): Connections between the frontal lobe and other brain structures—notably the thalamus—were severed by manipulating a narrow blade known as a leu-

kotome inserted into brain tissue through several small holes drilled in the skull. A second procedure, called **trans-orbital lobotomy**, was devised in 1945 and involved the manipulation of a pointed instrument resembling an ice pick driven with a mallet through the thin bony wall of the eye socket and into the prefrontal brain. Both procedures were widely used to relieve the symptoms of severe mental disorder (including depression and schizophrenia) until the advent of ANTIPSYCHOTIC drugs in the 1950s. These operations did, on occasion, result in improved function for some patients, but others either died as a consequence of the surgery or suffered major personality changes, becoming apathetic and prone to inappropriate social behavior; some also developed a seizure disorder. Such procedures have since been replaced by more sophisticated, stereotactic forms of neurosurgery that are less invasive and whose effects are more certain and less damaging. Also called **leukotomy**.

**LOC** abbreviation for LOSS OF CONSCIOUSNESS.

**local circuit** see NEURAL CIRCUIT.

**local circuit neuron** a neuron with short processes that do not extend far from the cell body. Also called **Golgi Type II neuron**. Compare PROJECTION NEURON.

**local enhancement** a form of SOCIAL LEARNING in which one or more individuals engaging in some behavior with an object in a particular location draw the attention of another to that location, which facilitates the acquisition of similar behavior by that observer. The attraction of attention to a particular place in the environment, not any specific social interactions among the demonstrators and observer, is what leads to learning. For example, ducks in a pen may ignore an escape hole unless they are near another duck who escapes through the hole, thus drawing their attention to it.

**local excitatory state (LES)** the localized increase in negative potential on the surface of a neuron in response to stimulation below threshold level, which results in temporarily increased NEURAL IRRITABILITY. Also called **local excitatory potential**.

**local-global distinction** the difference between perceiving a whole form and perceiving the subunits that make up that form. For example, if a large letter *S* is formed from an arrangement of small letter *ps*, perception is at the local level if it focuses on the *ps* and at the global level if it focuses on the *S*.

**local independence** in FACTOR ANALYSIS and other models involving LATENT VARIABLES, the basic assumption that individual observations have no direct influence on one another and that any relationship between them is to be explained by the latent variable underlying them.

**localization** *n.* the ability to determine the physical position or spatial location of a stimulus in any sensory modality.

**localization of function** the concept that specific parts of the cerebral cortex are relatively specialized for particular types of cognitive and behavioral processes. Also called **cortical localization**.

**localized amnesia** a memory loss restricted to specific or isolated experiences. Also called **circumscribed amnesia**; **lacunar amnesia**.

**local potential** the phase of a GRADED POTENTIAL that

precedes the ACTION POTENTIAL if the localized stimulation is above threshold level. Also called **local response**.

**local regression (loess; lowess)** a form of REGRESSION ANALYSIS in which a model of the relationship between outcomes and predictors is obtained by fitting different linear or quadratic functions to different segments or intervals of data. Variables are assigned different WEIGHTS in the REGRESSION EQUATIONS to reflect their relative importance at each point and no assumptions are made about the associations among the variables. The overall curve obtained by combining the individual fitted curves for the different data segments shows the general shape of the relationship between the variables. Also called **locally weighted regression**.

**location constancy** the tendency for a resting object and its setting to appear to have the same position even if the relationship between setting and observer is altered as the observer shifts position. See also OBJECT CONSTANCY.

**location-invariant neuron** any of various neurons located in EXTRASTRIATE VISUAL AREAS, particularly those in the INFEROTEMPORAL CORTEX, that respond regardless of the location of a stimulus in the receptive field. Because the receptive fields in these areas are so large, a stimulus may be located almost anywhere in the visual field. Many of these cells are also **size-invariant neurons**, which respond when presented with a particular object, regardless of its size.

**loci** *pl. n.* see LOCUS.

**loci method** see METHOD OF LOCI.

**lock-and-key theory 1.** generally, any theory that posits a specific fit between two or more of its components, in a manner analogous to the fit of a key in a lock. **2.** in olfaction, see STEREOCHEMICAL SMELL THEORY.

**locked-in syndrome** a condition in which a person cannot speak or move but is fully cognizant and aware of his or her surroundings. The individual has normal metabolic functions and sleep-wake cycles but is able to communicate only with eye movements (e.g., blinking, looking up or down). Electrical activity of the brain (including EVENT-RELATED POTENTIALS) generally is normal as well, as demonstrated through ELECTROENCEPHALOGRAPHY, SINGLE PHOTON EMISSION COMPUTED TOMOGRAPHY, and other imaging techniques. Locked-in syndrome is poorly understood and frequently misdiagnosed as COMA or a VEGETATIVE STATE; research suggests that physicians fail to recognize signs of consciousness in more than half of cases. It is associated with disruption of motor neurons in the brainstem—typically the PONS—from hemorrhage, occlusion or infarction, traumatic brain injury, tumor, encephalitis, neuromuscular disorders (e.g., AMYOTROPHIC LATERAL SCLEROSIS, GUILLAIN-BARRÉ SYNDROME), and other causes. Life expectancy of an individual with locked-in syndrome may be several decades with appropriate medical care, but the probability of significant motor recovery is small. See also BRAIN-COMPUTER INTERFACE. [term coined in 1966 by U.S. neurologists Fred Plum (1924–2010) and Jerome B. Posner]

**locked ward** a secured hospital unit in which patients with severe mental disorders reside. The present trend is toward elimination of locked wards. Factors leading to their less frequent use are improvements in psychological interventions, the use of psychoactive drugs, and the concepts of the OPEN HOSPITAL and THERAPEUTIC COMMUNITY.

**Locke's theory of goal setting** a theory suggesting that (a) specific goals direct activity more effectively than do vague or general goals, (b) difficult or challenging goals produce better performance than do moderate or easy goals, and (c) short-term goals can be used to attain long-range goals. At least four mechanisms explain why GOAL SETTING improves performance: (a) It focuses and directs activities, (b) it regulates expenditure of energy, (c) it enhances persistence because the effort is continued until the goal or subgoal is reached, and (d) it can promote the development of new strategies for improving performance. Goal setting only works if there is timely feedback showing performance or progress in relation to the goal. Goals must be accepted to be effective, and their attainment is facilitated by a plan of action or strategy. Competition can be viewed as a form of goal setting. [Edwin A. **Locke** (1938– ), U.S. industrial psychologist]

**Lockhart v. McCree** a case resulting in a 1986 U.S. Supreme Court decision that upheld the constitutionality of the death qualification process (see DEATH-QUALIFIED JURY) despite social science research indicating that this process produces a jury more likely to vote for conviction.

**lockout** *n.* a tactic used by an employer when negotiating a contract with a union in which employees are barred from entering the workplace and performing their jobs until they agree to the employer's terms.

**locomotion** *n.* movement of an organism from one place to another. Different species may have different typical modes of locomotion, such as crawling, swimming, flying, bipedal walking, and quadrupedal walking. —**locomotor** *adj.*

**locomotor arrest** the inhibition of movement, which can be produced by volition, drugs, or electrical stimulation of the HIPPOCAMPUS.

**locomotor ataxia** severe incoordination in walking, producing an unsteady gait. It involves degeneration of the DORSAL COLUMNS of the spinal cord and is seen in individuals with NEUROSYPHILIS. See GENERAL PARESIS. Also called **tabes dorsalis**.

**locomotor play** play that involves exaggerated, repetitious movement and is physically vigorous, such as chasing, climbing, and wrestling. There are three distinctive forms: RHYTHMIC STEREOTYPY, EXERCISE PLAY, and ROUGH-AND-TUMBLE PLAY. Locomotor play is one of three traditionally identified basic types of play, the others being OBJECT PLAY and SOCIAL PLAY.

**loco plant** any of certain plants belonging to the genera *Astragalus* or *Oxytropis* that grow wild in western North America, particularly in the Rocky Mountains, and that if ingested damage nerve tissue. The substances responsible include miserotoxin, swainsonine, and selenium. Symptoms of poisoning include muscular trembling or incoordination, staggering gait, and impairment of depth and other sensory perception (*loco* is the Spanish word for "crazy"). In sufficient doses, these toxins produce irreversible changes in the central nervous system, including brain lesions and eventual paralysis, and may cause coma or death. Also called **loco weed**.

**locura** *n.* a CULTURE-BOUND SYNDROME found among Latino groups in the United States and Latin America and attributed to hereditary vulnerability, the consequences of stressful and difficult life events, or a combination of the two. Symptoms include incoherence, agitation, auditory

and visual hallucinations, social dysfunction, erratic behavior, and possibly violence.

**locus** *n.* (*pl.* **loci**) **1.** the place or position of an anatomical or pathological entity (e.g., a hemorrhage in the brain, a butterfly rash on the skin). **2.** the position of a gene on a chromosome.

**locus ceruleus (locus coeruleus; locus caeruleus)** a small bluish-tinted NUCLEUS in the brainstem whose neurons produce NOREPINEPHRINE and modulate large areas of the forebrain. It is involved in arousal and likely has a role in anxiety.

**locus of causality** attribution of the causes of an event to sources internal or external to the self, which may influence subsequent behavior in relation to that event. For example, a student who fails an exam may attribute his or her poor performance to an inherent lack of ability—an internal cause—and decide not to study at all for the next exam because "it won't do any good," whereas another student may attribute the same poor performance to distractions from a neighbor's loud party during a review session the night before—an external cause—and hence study twice as long in a quiet setting for the next exam. Research suggests that consistent performance tends to be attributed to internal factors whereas highly variable performance tends to be attributed to external factors. [described in 1979 by U.S. social psychologist Bernard Weiner (1935– )]

**locus of control** a construct that is used to categorize people's basic motivational orientations and perceptions of how much control they have over the conditions of their lives. People with an **external locus of control** tend to behave in response to external circumstances and to perceive their life outcomes as arising from factors out of their control. People with an **internal locus of control** tend to behave in response to internal states and intentions and to perceive their life outcomes as arising from the exercise of their own agency and abilities. [introduced into psychology by Julian ROTTER]

**locus of stability** attribution of the causes of an event sources that are constant and unlikely to change over time or to sources that are dynamic and subject to variability over time, which may influence a person's subsequent behavior in relation to that event. For example, a supervisor who believes that an employee unexpectedly absent from a recent meeting will also miss future meetings may reprimand the person, whereas a supervisor who believes the absence is not likely to be habitual may overlook the indiscretion. [proposed in 1979 by U.S. social psychologist Bernard Weiner (1935– )]

**locutionary act** see ILLOCUTIONARY ACT.

**LOD score** log of the odds score: an estimate of whether data indicate that two gene loci are linked, that is, are likely to lie near each other on a chromosome and therefore are likely to be inherited together. A LOD score of 3 or more generally indicates that the two loci are close.

**loess** *n.* see LOCAL REGRESSION.

**log-** combining form see LOGO-.

**logarithm (log)** *n.* the number of times that a given value (the **base**) has to be multiplied by itself to produce a specific quantity. For example, the logarithm for the quantity 81 and the base 3 is the number 4 ( $3 \times 3 \times 3 \times 3 = 81$ ). Logarithms are given by the generic formula  $y = \log_a x$ , thus  $4 = \log_3 81$ .

**logarithmic transformation** the conversion of raw data values into another form via the use of LOGARITHMS. In turning multiplicative relationships into additive ones and eliminating exponential trends, logarithmic transformations allow researchers to analyze data using LINEAR MODELS. Additionally, such transformations may be used to convert raw data into a form that more closely matches the assumptions required in particular statistical analyses, particularly that of NORMALITY.

**logic** *n.* 1. the branch of EPISTEMOLOGY that is concerned with the forms of argument by which a valid conclusion may be drawn from accepted premises. As such, it is also concerned with distinguishing correct from fallacious reasoning (see FALLACY). See also DEDUCTIVE REASONING; INFERENCE. 2. a particular rule-governed form of symbolic expression used to analyze the relations between propositions. See SYMBOLIC LOGIC. —**logical** *adj.*

**logical inference** see INFERENCE.

**logical-mathematical intelligence** in the MULTIPLE-INTELLIGENCES THEORY, the set of skills used in reasoning, abstraction, and numerical analysis and computation. These abilities are alleged to be relatively independent of the abilities involved in other types of intelligences.

**logical necessity** a necessarily valid conclusion that follows from the operations of a system of FORMAL LOGIC on a set of premises or initial conditions.

**logical paradox** see PARADOX.

**logical positivism** a philosophical perspective that is committed to the principle of verification, which holds that the meaning and truth of all nontautological statements are dependent on empirical observation. In the early 20th century, the positivists of the VIENNA CIRCLE sought to establish the essential unity of logic, philosophy, and science and to distinguish these disciplines from others such as metaphysics, ethics, and religion, which were dismissed for their speculative character. The positivist view of science was influential during the period in which psychology emerged as a science and has had a recognizable influence on the discipline. This is most pronounced in BEHAVIORISM and in psychology's commitment to empirical scientific methods. See POSITIVISM. See also PHYSICALISM; POSTPOSITIVISM; REDUCTIONISM.

**logical thinking** thinking that is consistent with formal principles of logic. See also DEDUCTIVE REASONING.

**logigrammatical disorder** a manifestation of SEMANTIC APHASIA that affects individuals with lesions of the dominant PARIETAL LOBE. An individual uses the correct words but in a sequence that gives a different meaning; for example, the words *plate* and *table* may be transposed in the sentence *The plate is on the table* to produce *The table is on the plate*.

**logistic function** a basic function of the form  $y = c/(1 + a \exp[-bx])$ , where  $y$  and  $x$  are variables,  $a$ ,  $b$ , and  $c$  are constants, and  $\exp$  is the EXPONENTIAL FUNCTION. When graphed, values derived from a logistic function form an S shape called the **logistic curve**. The logistic function is used to describe LONGITUDINAL DATA and growth rates in particular, in which an initial stage of growth is approximately exponential and then, as saturation begins, slows and ultimately ceases altogether.

**logistic regression (LR)** a form of REGRESSION ANALYSIS used when the outcome or DEPENDENT VARIABLE may assume only one of two categorical values (e.g., pass or

fail) and the predictors or INDEPENDENT VARIABLES are either categorical or CONTINUOUS. For example, a researcher could use logistic regression to determine the likelihood of graduating from college (yes or no) given such student information as high school grade point average, college admissions test score, number of advanced placement courses taken in high school, socioeconomic status, and gender. Also called **logistic modeling**.

**logistic transformation** a TRANSFORMATION in which measurements on a LINEAR scale are converted into probabilities between 0 and 1. It is given by the formula  $y = e^x/(1 + e^x)$ , where  $x$  is the scale value and  $e$  is the Eulerian number. The inverse of LOGITS, logistic transformations are used in such statistical procedures as LOGISTIC REGRESSION.

**logit** *n.* a nonlinear probability function. It is given by the formula  $\text{logit}(p) = \log(p/[1 - p])$ , where  $p$  is the probability of an event. In other words, a logit is the logarithm (log) of the ODDS of the occurrence of an event. Logits are the inverse of LOGISTIC TRANSFORMATIONS.

**log likelihood** the LOGARITHM of a probability value or estimate.

**log-likelihood ratio (LLR)** a ratio whose numerator and denominator comprise LOG LIKELIHOODS. It is used (in the **log-likelihood test**) to evaluate the GOODNESS OF FIT of the NULL HYPOTHESIS and the ALTERNATIVE HYPOTHESIS in explaining sample data. The simpler LIKELIHOOD RATIO indicates how many times more likely the observed values are to occur under one model than under the other, and the LOGARITHMS of those values yield a log-likelihood ratio.

**log-linear analysis** a method of examining relationships between two or more CATEGORICAL VARIABLES that involves an analysis of the natural LOGARITHMS of frequency counts within a CONTINGENCY TABLE. Log-linear analyses do not distinguish between INDEPENDENT VARIABLES and DEPENDENT VARIABLES but rather attempt to model all significant associations among all variables, including interactions between any combination of the variables, using sets of ODDS and ODDS RATIOS for different category outcomes. Also called **log-linear modeling**.

**log-normal distribution** a THEORETICAL DISTRIBUTION in which the LOGARITHMS of values on a variable follow the bell-shaped NORMAL DISTRIBUTION.

**Logo** *n.* a computer programming language designed at the Massachusetts Institute of Technology's Artificial Intelligence Research Laboratory in conjunction with the research firm Bolt, Beranek and Newman to encourage the development of problem-solving skills. A dialect of LISP, Logo was directed primarily at children and is based on Jean PIAGET's research in the development of thinking. [designed by U.S. computer scientist Wally Feurzeig and South African-born U.S. mathematician Seymour Papert (1928– )]

**logo-** (**log-**) *combining form* speech or words.

**log odds** see LOGIT.

**logogen** *n.* a theoretical memory unit corresponding to a word, letter, or digit, which, when excited, results in the output (recognition) of the unit and recall of characteristics and information associated with that unit. For example, the logogen for *table* is activated by hearing the component sounds or seeing the typographical features of the word, bringing to mind such knowledge as the typical structure and shape of a table and its general function. [proposed by British psychologist John Morton (1933– )]

**logographic** *adj.* denoting or referring to writing systems that use a separate symbol (**logogram** or **logograph**) to represent each word or MORPHEME.

**logopathy** *n.* a speech disorder of any kind.

**logopedics** *n.* primarily in Britain, the study and treatment of speech disorders. See SPEECH AND LANGUAGE PATHOLOGY.

**logorrhea** *n.* rapid, uncontrollable, and incoherent speech, sometimes occurring as part of a MANIC EPISODE.

**logotherapy** *n.* an approach to psychotherapy that focuses on the “human predicament,” helping the client to overcome crises in meaning. The therapeutic process typically consists of examining three types of values: (a) creative (e.g., work, achievement), (b) experiential (e.g., art, science, philosophy, understanding, loving), and (c) attitudinal (e.g., facing pain and suffering). Each client is encouraged to arrive at his or her own solution, which should incorporate social responsibility and constructive relationships. Also called **meaning-centered therapy**. See also EXISTENTIAL PSYCHOTHERAPY; EXISTENTIALISM. [developed in the 1950s and 1960s by Viktor E. FRANKL]

**-logy (-ology)** *suffix* field of study (e.g., PHONOLOGY).

**Lokian personality** a personality pattern characterized by the desire to cause distress to others, manipulative behavior, and deceit. The name is derived from Loki, the Norse god of mischief.

**Lolita complex** see NYMPHOLEPSY.

**London syndrome** explicit and constant resistance and refusal by hostages to do what captors expect during a hostage situation, first identified in 1981 after a hostage-taking incident in London. It may result in serious injury and death to the resisters.

**loneliness** *n.* affective and cognitive discomfort or uneasiness from being or perceiving oneself to be alone or otherwise solitary. Psychological theory and research offer multiple perspectives: Social psychology emphasizes the emotional distress that results when inherent needs for intimacy and companionship are not met; cognitive psychology emphasizes the unpleasant and unsettling experience that results from a perceived discrepancy (i.e., deficiency in quantity or quality) between an individual’s desired and actual social relationships. Psychologists from the existential or humanistic perspectives may see loneliness as an inevitable, painful aspect of the human condition that nevertheless may contribute to increased self-awareness and renewal. See UCLA LONELINESS SCALE.

**long axis** see AXIS.

**long-delay conditioning** in DELAY CONDITIONING, the period during which the conditioned stimulus is presented long enough to produce INHIBITION OF DELAY.

**longevity** *n.* 1. long life. 2. the actual length of an individual’s life. See also LIFE EXPECTANCY.

**longilineal** *adj.* denoting a constitutional type of body that is long rather than broad and roughly equivalent to the ASTHENIC TYPE in KRETSCHEMER TYPOLOGY.

**longitudinal** *adj.* 1. in anatomy, referring to the long AXIS of the body. 2. in research, referring to the time dimension—that is, running over an extended period.

**longitudinal data** information obtained through mul-

tiples measurements of the same individuals over a period of time. For example, a researcher investigating the use of coping strategies in college students may evaluate stress levels at the beginning, middle, and end of the fall and spring semesters.

**longitudinal design** the study of a variable or group of variables in the same cases or participants over a period of time, sometimes several years. An example of a longitudinal design is a multiyear comparative study of the same children in an urban and a suburban school to record their cognitive development in depth. A longitudinal study that evaluates a group of randomly chosen individuals is referred to as a **panel study**, whereas a longitudinal study that evaluates a group of individuals possessing some common characteristic (usually age) is referred to as a **cohort study**. Also called **longitudinal research**; **longitudinal study**. Compare CROSS-SECTIONAL DESIGN.

**longitudinal fissure** a deep groove that marks the division between the left and right cerebral hemispheres of the brain. At the bottom of the groove, the hemispheres are connected by the CORPUS CALLOSUM. Also called **inter-hemispheric fissure**; **sagittal fissure**.

**longitudinal stability** the degree to which an individual’s possession or expression of a psychological characteristic is consistent over a period, as compared with other people.

**long-term care** provision of health, mental health, or other services over a prolonged or extended period to someone with a chronic illness, mental illness, or disability. Care can be provided in an institutional setting or the community (e.g., at home) by health care professionals, family, or friends.

**long-term care facility** an EXTENDED CARE institution, such as a NURSING HOME, that provides medical and personal services for patients who are unable to live independently but do not require the inpatient services of a hospital.

**long-term depression (LTD)** a long-lasting decrease in the amplitude of neuronal response due to persistent weak synaptic stimulation (in the case of the hippocampus) or strong synaptic stimulation (in the case of the cerebellum). Compare LONG-TERM POTENTIATION.

**long-term memory (LTM)** a relatively permanent information storage system that enables one to retain, retrieve, and make use of skills and knowledge hours, weeks, or even years after they were originally learned. Various theories have been proposed to explain the biological processes by which this occurs (e.g., the PERSEVERATION—CONSOLIDATION HYPOTHESIS), and a major distinction is made between LTM and SHORT-TERM MEMORY. Additionally, LTM is divided into several categories, including DECLARATIVE MEMORY and PROCEDURAL MEMORY. See also SECONDARY MEMORY.

**long-term potentiation (LTP)** enhancement of synaptic transmission (see SYNAPSE), which can last for weeks, caused by repeated brief stimulations of one nerve cell that trigger stimulation of a succeeding cell. The capacity for potentiation has been best shown in hippocampal tissue. LTP is studied as a model of the neural changes that underlie memory formation, and it may be a mechanism involved in some kinds of learning. Compare LONG-TERM DEPRESSION.

**long-term therapy** psychotherapy over a period of

many months or years. Classic PSYCHOANALYSIS, which may last 2 to 5 years or longer, is a primary example.

**long-wavelength pigment** the PHOTOPIGMENT, present in one of the three populations of RETINAL CONES, that has maximum sensitivity to a light wavelength of 558 nm. The absence of the gene for the long-wavelength pigment causes PROTANOPIA (red color blindness). See also MEDIUM-WAVELENGTH PIGMENT; SHORT-WAVELENGTH PIGMENT.

**look angle** in ergonomics, the direction in which the operator looks during task performance. The goal is to design equipment and workstations in such a way that the viewing angle is central or forward rather than requiring head movements or eye glances to the left or right. See also HEAD-UP DISPLAY.

**looking-glass self** a SELF-CONCEPT formed by incorporating other people's views of oneself into one's own self-views. The term suggests a self-concept that is, in part, a reflection of other people's impressions, reactions, and opinions. See REFLECTED APPRAISALS; SYMBOLIC INTERACTIONISM. [introduced by U.S. social thinker Charles Horton Cooley (1864–1929)]

**look-say** *n.* see WHOLE-WORD METHOD.

**looming** *n.* a type of space perception in which the retinal image of an object is magnified as the object approaches the observer. Reactions to looming vary: Chicks run away, kittens avert their heads, monkeys leap backward while making alarm cries, and human infants attempt to withdraw their heads at 2 weeks and blink at 3 weeks.

**loose culture** a heterogeneous social group whose diverse members tend to value originality, risk taking, and a flexible adherence to the collective norms of their culture or group. Compare TIGHT CULTURE. [coined by Greek-born U.S. psychologist Harry C. Triandis (1926– )]

**loosening of associations** a thought disturbance demonstrated by speech that is disconnected and fragmented, with the individual jumping from one idea to another unrelated or indirectly related idea. It is essentially equivalent to DERAILMENT.

**loperamide** *n.* an OPIOID that slows gastrointestinal motility and is used for the treatment of diarrhea. Because it is not effectively transported across the BLOOD–BRAIN BARRIER, it has few (if any) psychotropic effects and its abuse potential is low. U.S. trade name: **Imodium**.

**lorazepam** *n.* a highly potent BENZODIAZEPINE approved for the treatment of anxiety and as premedication in surgical anesthesia. Unlike many other benzodiazepines, it has no active metabolic products and therefore requires minimal processing in the liver. This, together with its predictable duration of action, make it a favored drug in the management of alcohol withdrawal in patients with liver impairment. U.S. trade name (among others): **Ativan**.

**lordosis** *n.* **1.** an abnormal inward curvature of the spine in the lumbar and cervical regions. In extreme cases, the condition is known as **hyperlordosis**. See also KYPHOSIS; SCOLIOSIS. **2.** in many rodents, a similar but normal posture that is assumed by females during periods of sexual receptivity and serves to facilitate copulation with a male. In the absence of lordosis, males are physically unable to mate with the female. See PRESENTING.

**Lord's paradox** an effect in which the relationship between a continuous outcome variable and a CATEGORICAL

independent variable (e.g., treatment or control) is reversed when an additional COVARIATE is introduced to the analysis. For example, suppose that a researcher is studying change in knowledge about a topic following an intervention and obtains results indicating that those who received the treatment had a better outcome (i.e., had learned more) than those in the control group. If, however, the researcher decides to use an ANALYSIS OF COVARIANCE to adjust the treatment effect according to general educational level, the pattern of findings could be reversed: If participants receiving the treatment had a substantially higher level of education than those in the control group, it might now appear that they did not gain from the intervention. [Frederick M. LORD]

**Lorenzini ampullae** see ELECTRIC SENSE.

**LOS** abbreviation for LENGTH OF STAY.

**loser effect** in many species, the reduced likelihood that an individual will win future contests over resources after repeated experiences of losing in such contests. Physiological changes, such as increased glucocorticoids (e.g., cortisone, cortisol) or decreased testosterone, often occur with the loser effect. Compare WINNER EFFECT.

**loss aversion** see BEHAVIORAL ECONOMICS.

**loss of affect** loss of the ability to respond emotionally, which results in FLAT AFFECT.

**loss of consciousness (LOC)** a state in which an organism capable of consciousness can no longer experience events or exert voluntary control. Examples of conditions associated with loss of consciousness include deep sleep (SLOW-WAVE SLEEP), fainting (syncope), hypoglycemia, traumatic brain injury, coma, general anesthesia, narcolepsy, and some epileptic seizures.

**lost letter procedure** an INDIRECT ATTITUDE MEASURE used at an aggregate group level. Two sets of stamped envelopes are created, one addressed to a group likely to adopt a particular attitudinal position on the target issue and the other addressed to a group likely to adopt the opposite position. Equal numbers of each version of the envelope are randomly distributed in a particular community. The procedure is based on the logic that a person finding a letter that has apparently been inadvertently dropped is more likely to place the letter in a mailbox if it is addressed to a group that shares his or her position. The percentage of people in that community supporting the two positions is then inferred from the number of envelopes that are ultimately mailed to each address. Also called **lost letter technique**. [originally developed by Stanley MILGRAM]

**lot acceptance sampling** see ACCEPTANCE SAMPLING.

**loudness** *n.* the subjective magnitude of sound. It is determined primarily by intensity but is also affected by other physical properties, such as frequency, spectral configuration, and duration. The unit proposed for loudness is the **son**: One son is defined as the subjective magnitude of a 1 kHz tone presented at 40 dB SPL (decibels sound-pressure level), based on loudness judgments by listeners. Loudness approximately doubles for each 10 dB increase in intensity. The **loudness level** is the level in decibels SPL of a 1 kHz tone that is judged to be equally as loud as the test sound. The unit is the **phon**: A sound whose loudness level is 40 phons has a loudness equal to that of a 1 kHz tone presented at 40 dB SPL.

**loudness summation** a situation in which the LOUDNESS of different sounds presented together is the sum of



their individual loudnesses. For example, if Sound A at 40 dB SPL (decibels sound-pressure level) has a loudness of 1 sone and Sound B at 50 dB SPL has a loudness of 2 sones, then loudness summation is said to occur if the loudness of A and B presented together is 3 sones. Loudness summation depends on the frequency composition of the sounds. See also CRITICAL BAND.

**Lou Gehrig's disease** see AMYOTROPHIC LATERAL SCLEROSIS. [Henry (Lou) Gehrig (1903–1941), U.S. baseball player who died of the disease]

**Louis-Bar syndrome** see ATAXIA TELANGIECTASIA. [Denise Louis-Bar (1914– ), Belgian neuropathologist]

**love** *n.* a complex emotion involving strong feelings of affection and tenderness for the love object, pleasurable sensations in his or her presence, devotion to his or her well-being, and sensitivity to his or her reactions to oneself. Although love takes many forms, including concern for one's fellow humans (brotherly love), parental love, EROTIC LOVE, SELF-LOVE, and identification with the totality of being (love of God), the TRIANGULAR THEORY OF LOVE proposes three essential components: passion, intimacy, and commitment. Social psychological research in this area has focused largely on PASSIONATE LOVE, in which sexual desire and excitement predominate, and COMPANIONATE LOVE, in which passion is relatively weak and commitment is strong.

**lovemap** *n.* a person's mental image of the ideal lover, the ideal love relationship, and ideal sexual activity with the partner, expressed in fantasy and in actual sexual behavior. It incorporates issues of SEXUAL ORIENTATION and also of desire for deviant behaviors (see PARAPHILIA). [proposed by John MONEY]

**love need** in MASLOW'S MOTIVATIONAL HIERARCHY, the third level of the hierarchy of needs, characterized by the striving for affiliation and acceptance. Also called **social need**.

**love object** **1.** the person toward whom an individual directs affection, devotion, and (usually) sexual interest. **2.** in psychoanalytic theory, the person who is loved by the individual's EGO, as opposed to the OBJECT that satisfies an INSTINCT.

**love scale** a measure of the strength of one person's feeling of love for another. Because love is a complex state occurring in many different forms, the various scales that have been devised do not always recognize the same components of this multifaceted emotion. As examples, the measure assessing PASSIONATE LOVE developed by U.S. social psychologist Elaine Hatfield (1937– ) concentrates on items dealing with sexual desires as well as other, more cognitively oriented items, reflecting a preoccupation with the love object and idealization of this person, whereas the ROMANTIC LOVE scale devised by U.S. social psychologist Zick Rubin (1944– ) involves elements of both passionate and COMPANIONATE LOVE and includes items dealing with willingness to confide in the loved person and the desire to be with him or her. See also LIKING SCALE.

**love withdrawal** a form of discipline in which parents threaten to withdraw their love and affection from children if they misbehave.

**low-ball technique** a procedure for enhancing COMPLIANCE by first obtaining agreement to a request and then revealing the hidden costs of this request. Compliance to the target request is greater than would have been the case if these costs had been made clear at the time of the initial re-

quest. See also DOOR-IN-THE-FACE TECHNIQUE; FOOT-IN-THE-DOOR TECHNIQUE; THAT'S-NOT-ALL TECHNIQUE.

**low birth weight (LBW)** infant weight at birth of less than 5.5 pounds (2,500 g) regardless of gestational age. **Very low birth weight (VLBW)** refers to weight of less than 3.5 pounds (1,500 g) and **extremely low birth weight (ELBW)** is used to describe an infant weight of less than 2.2 pounds (1,000 g) at birth. Children born with VLBW are at an increased risk for serious health problems and reduced scores on measures of intelligence. Children born with moderately low birth weight (i.e., 1,500–2,499 g, 3.5–5.8 lbs) are at risk for similar, albeit less severe, outcomes. However, the research base is far less available within the moderate low birth weight category. The vast majority of studies have focused on the VLBW and ELBW categories. These categories encompass only 15% of all low weight births and approximately 1.2% of all births in a given year. Compare SMALL FOR GESTATIONAL AGE.

**lower hinge** the point in a distribution of values below which lie one fourth of the data. It is equivalent to the first QUARTILE and lies midway between the MEDIAN and the minimum point of the distribution. Compare UPPER HINGE.

**lower motor neuron** see MOTOR NEURON.

**lower quartile** see QUARTILE.

**lower real limit** see REAL LIMIT.

**lowess** *n.* see LOCAL REGRESSION.

**Lowe syndrome** see OCULOCEREBRORENAL SYNDROME.

**low-functioning autism (LFA)** a controversial, non-standardized classification describing individuals who meet the DSM-IV-TR diagnostic criteria for AUTISM but who have lower IQs and more severe impairment than seen in others with the disorder. Compare HIGH-FUNCTIONING AUTISM.

**low normal** see BELOW AVERAGE.

**low-pass filter** see FILTER.

**low-technology assistive device** a device using inexpensive, widely available technology to increase, maintain, or improve the functional capabilities of individuals with disabilities. An example is an eating utensil with a built-up handle. See ASSISTIVE TECHNOLOGY.

**low threshold** see HIGH THRESHOLD.

**low vision** reduction of visual capacity (especially visual acuity and visual field), regardless of the underlying cause, that cannot be corrected to the normal range with glasses, contact lenses, or medical or surgical treatment. Low vision causes problems with various aspects of visual performance (e.g., mobility, reading) and is often associated with a decline in quality of life, an increased risk of depression, and decreased functional status. **Low vision services** provided to those with this condition include assessment of an individual's residual vision and instruction in the use of high-powered optical devices (see VISION REHABILITATION). Also called **partial sight**. See also BLINDNESS; VISUAL IMPAIRMENT.

**loxapine** *n.* an ANTIPSYCHOTIC introduced into the U.S. market in the early 1970s. Loxapine differs from the conventional antipsychotics in that it binds strongly to serotonergic as well as dopaminergic receptors. Although its chemical structure (see DIBENZOXAZEPINE) is similar to that of the atypical antipsychotic CLOZAPINE, loxapine has the same antipsychotic, antiemetic, sedative, and extrapyrami-

dal properties as the conventional antipsychotic agents. U.S. trade name: **Loxitane**.

**loyalty** *n.* faithfulness and allegiance to individuals or social groups. —**loyal** *adj.*

**LPAD** abbreviation for LEARNING POTENTIAL ASSESSMENT DEVICE.

**LPC Scale** abbreviation for LEAST PREFERRED COWORKER SCALE.

**LPN** abbreviation for LICENSED PRACTICAL NURSE.

**IPOA** abbreviation for LATERAL PREOPTIC AREA.

**LR 1.** abbreviation for LIKELIHOOD RATIO. **2.** abbreviation for LOGISTIC REGRESSION.

**LRE** abbreviation for LEAST RESTRICTIVE ENVIRONMENT.

**LRP** abbreviation for LATERALIZED READINESS POTENTIAL.

**LSD 1.** lysergic acid diethylamide; a highly potent HALLUCINOGEN that structurally resembles the neurotransmitter serotonin and presumably exerts its psychoactive effects by acting as a PARTIAL AGONIST at the 5-HT<sub>2A</sub> serotonin receptor. It was originally synthesized from the ERGOT ALKALOID lysergic acid in 1938 by Swiss chemist Albert Hoffman, who then discovered its hallucinogenic effects on accidental ingestion in 1943. At very low doses, it is capable of producing visual distortions (sharpened sense of color) or frank hallucinations, together with feelings of euphoria or arousal; it became a widely used and controversial recreational drug during the mid-1960s and early 1970s. The effects of LSD were the subject of research during the 1950s as a possible model for psychosis, and various attempts were made during the 1950s and 1960s to use LSD as an aid to psychotherapy (see PSYCHEDELIC THERAPY), although they did not prove effective. The drug is usually taken orally. **2.** abbreviation for least significant difference. See FISHER LEAST SIGNIFICANT DIFFERENCE TEST.

**LTD** abbreviation for LONG-TERM DEPRESSION.

**LTH** abbreviation for luteotropic hormone. See PROLACTIN.

**LTM** abbreviation for LONG-TERM MEMORY.

**LTP** abbreviation for LONG-TERM POTENTIATION.

**lucid dream** a dream in which the sleeper is aware that he or she is dreaming and may be able to influence the progress of the dream narrative.

**lucid interval** a period of mental clarity following a period of delirium, disorganization, or confusion brought on by a mental condition, such as a psychotic state.

**lucidity** *n.* a mental state in which a person may not have the complete ability to reason or comprehend complex matters but has adequate mental powers to be legally responsible for his or her actions. —**lucid** *adj.*

**Lucifer effect** the tendency for iniquitous social contexts to negatively influence and transform human behavior, in some cases to an extreme degree (see POWER OF THE SITUATION). According to this conceptualization, even individuals who are inherently moral in character and upbringing can, in a corruptive social setting, be induced to act dishonorably and unethically. This phenomenon takes its name from the Christian story of the angel Lucifer, who defied God's authority and ultimately became the Devil. See also STANFORD PRISON STUDY. [coined by U.S. psychologist Philip G. Zimbardo (1933– ) in his 2008 book *The Lucifer Effect: Understanding How Good People Turn Evil*]

**lude** *n.* slang for METHAQUALONE.

**Ludiomil** *n.* a trade name for MAPROTILINE.

**lues** *n.* syphilis. The name may be combined with an anatomical or other term, for example, **lues nervosa** for syphilis of the nervous system. —**luetetic** *adj.*

**lumbar** *adj.* referring to the lower part of the back or spinal cord.

**lumbar nerve** see SPINAL NERVE.

**lumbar puncture** a procedure used to obtain a sample of cerebrospinal fluid for diagnostic purposes by inserting a needle into the SUBARACHNOID SPACE of the spinal cord at a point between two lumbar vertebrae. Also called **spinal tap**.

**lumbosacral plexus** a network of nerve fibers derived from the spinal roots of the fourth and fifth lumbar nerves and first through fourth sacral nerves (see SPINAL NERVE). It supplies the muscles of the leg and foot. The largest derivative of the lumbosacral plexus is the SCIATIC NERVE. Also called **lumbrosacral plexus**.

**lumen** (symbol: lm) *n.* the unit of LUMINOUS FLUX equal to the flux emitted by a uniform point source of 1 candela in a solid angle of 1 steradian.

**Luminal** *n.* a trade name for PHENOBARBITAL.

**luminance** *n.* the amount of light reflected or emitted from an object as measured in candelas per square meter.

**luminosity** *n.* the visual sensation of the brightness of a light source. It depends on the power emitted by the source and on the sensitivity of the eye to different wavelengths of light. Other factors can also influence the luminosity; for example, a light of a given LUMINOUS INTENSITY will appear brighter in a room with white walls than in a room with dark walls.

**luminosity coefficient** see COEFFICIENT OF VISIBILITY.

**luminosity curve** a graph of visual sensitivity (perceived luminosity) as a function of the wavelength of light.

**luminous flux** (symbol:  $\Phi_v$ ) the rate at which light is emitted from a source or reflected from a surface. It is measured in LUMENS by reference to a standard source.

**luminous intensity** (symbol:  $I_v$ ) the LUMINOUS FLUX emitted per unit solid angle by a point source in a given direction, measured in candelas.

**lunacy** *n.* **1.** an obsolete name for any mental illness. **2.** in legal use, an obsolete name for mental incompetence or legal INSANITY. **3.** the theory that some forms of mental illness correspond with the phases of the moon. See also MOON-PHASE STUDIES. —**lunatic** *adj.*, *n.*

**lunatic asylum** see INSANE ASYLUM.

**Lunesta** *n.* a trade name for ESZOPICLONE.

**Lupron** *n.* a trade name for LEUPROLIDE.

**lupus erythematosus (LE)** an autoimmune disorder causing chronic inflammation of connective tissue and characterized by joint pain, a butterfly-shaped rash on the nose and cheeks, and scaly red patches on the skin. The condition may be limited to the skin, or it may also affect internal organs, such as the heart, lungs, and central nervous system (**systemic lupus erythematosus; SLE**), and involve neurological abnormalities, such as seizures and psychosis.

**lurasidone** *n.* an ATYPICAL ANTIPSYCHOTIC of the benzisothiazol derivative class that is thought possibly to exert its effect by acting as a serotonin 5-HT<sub>2A</sub> and dopamine D2

receptor antagonist. It is used in the treatment of schizophrenia. U.S. trade name: **Latuda**.

**lure** *n.* an incorrect item presented among correct items in testing memory, to serve as a **DISTRACTOR**.

**Luria-Nebraska Neuropsychological Battery (LNNB)** a set of tests to assess the cognitive functioning of individuals 15 years and older that is intended to represent a standardized, quantitative version of Alexander LURIA's neuropsychological testing procedures that were initially collected and organized by Danish neuropsychologist Anne-Lise Christensen. The battery is available in two versions (Form I comprising 269 items and Form II comprising 279 items) and includes 11 clinical scales, each representing different aspects of relevant skills: motor functions, tactile functions, visual functions, rhythm, receptive speech, expressive speech, writing, reading, arithmetic, memory, and intellectual processes. Form II also includes an intermediate-term memory scale. Originally developed in 1978 by U.S. clinical psychologists Charles J. Golden (1949– ), Thomas A. Hammeke (1950– ), and Arnold D. Purisch (1951– ), the LNNB became widely used as a stand-alone battery to diagnose general and specific cerebral dysfunction and to localize impaired brain areas. Currently, however, it is used as part of a larger group of other neuropsychological measures. A similar version for children 8 to 12 years old, the **Luria-Nebraska Neuropsychological Battery-Children's Revision (LNNB-C)**, was developed by Charles Golden in the 1980s.

**lurking variable** see **HIDDEN VARIABLE**.

**lust murder** an extreme form of **SEXUAL SADISM** in which an individual experiences sexual arousal from the murder of a partner during the sexual act, often including elaborate staging of the act and mutilation of the victim's body. Also called **erotophonophilia**. See also **HOMICIDOPHILIA**.

**luteal phase** see **MENSTRUAL CYCLE**.

**luteinizing hormone (LH)** a **GONADOTROPIN** secreted by the anterior pituitary gland that, in females, stimulates the rapid growth of a **GRAAFIAN FOLLICLE** in the ovary until it ruptures and releases an ovum (see **MENSTRUAL CYCLE**). In males, it stimulates the interstitial cells of the **TESTIS** to secrete androgens. Also called **interstitial cell-stimulating hormone (ICSH)**.

**luteotropic hormone** see **PROLACTIN**.

**luteotropin** *n.* see **PROLACTIN**.

**Luvox** *n.* a trade name for **FLUVOXAMINE**.

**lux** *n.* the standard unit of **ILLUMINANCE**, equal to the illumination produced by a luminous flux of 1 lm (**LUMEN**) per square meter.

**LVN** abbreviation for licensed vocational nurse. See **LICENSED PRACTICAL NURSE**.

**LVP** abbreviation for lysine **VASOPRESSIN**.

**lycanthropy** *n.* 1. the supposed transformation of a human being into a wolf or other animal (from Greek *lykos*, "wolf"). Belief in lycanthropy reached epidemic proportions in Europe during the 16th century, when 600 supposed lycanthropes were sentenced to death for having committed violent crimes in animal form. Also called **ly-comania**; **zoanthropy**. 2. a condition in which a person has delusions that he or she is or can become a wolf or other animal.

**lygophilia** *n.* an abnormal desire to be in dark or gloomy places.

**Lyme disease** a multisystemic illness caused by spirochete bacteria transmitted through the bite of an infected deer tick. Initial effects are a red rash around the site of the bite as well as flulike symptoms of fever, fatigue, headache, and body aches. If left untreated, the disease can result in arthritis; neurological symptoms (e.g., severe headache, temporary paralysis); mood changes; and problems with memory loss, concentration, and sleep. Its manifestation of physical, cognitive, and psychiatric symptoms makes it difficult to diagnose. The disease was first recognized in 1975 after a large number of children in Lyme, Connecticut, were initially diagnosed with rheumatoid arthritis.

**lymphocyte** *n.* a type of blood cell (see **LEUKOCYTE**) that plays a key role in specific **IMMUNE RESPONSES**. There are two main classes. **B lymphocytes** (or **B cells**), which develop and mature in the bone marrow, are responsible for humoral immunity: They produce circulating antibodies when they bind to an appropriate antigen and are costimulated by certain T cells. **T lymphocytes** (or **T cells**), which mature in the thymus, are responsible for cell-mediated immunity: They are characterized by the presence of particular cell-surface molecules and are capable of antigen recognition. There are two main subclasses: cytotoxic T cells, which release proteins that destroy invading cells, and helper T cells, which assist in this or other aspects of the immune response. See also **NATURAL KILLER CELL**. —**lymphocytic** *adj.*

**lymphokine** *n.* any of a group of proteins, secreted by lymphocytes, that have a role in cell-mediated immunity by inducing other cells of the immune system to divide. See **CYTOKINE**.

**lynching** *n.* an instance of a group or mob of vigilantes killing a person, especially by hanging. The lynch mob often justifies its actions by claiming that the victim is guilty of some crime and the group is administering an appropriate punishment. Most lynchings in the United States were racially motivated acts of violence perpetrated by White Americans against African Americans. The first documented U.S. lynching occurred in 1882; by 1950, lynch mobs had killed more than 3,000 people. —**lynch** *vb.*

**lysergic acid diethylamide** see **LSD**.

**lysine** *n.* an essential **AMINO ACID** that cannot be synthesized by the body and must be supplied in the diet. It is often added to human or nonhuman animal foods to improve their nutritive value.

**lysine vasopressin (LVP)** see **VASOPRESSIN**.

**lysinuric protein intolerance** an autosomal recessive metabolic disorder caused by mutations in the *SLC7A7* gene and characterized by the body's inability to digest and use the amino acids lysine, arginine, and ornithine. Symptoms usually develop after infants begin to eat solid foods. Early signs include nausea and vomiting after ingestion of protein-rich foods. Enlarged liver and spleen, short stature, muscle weakness, osteoporosis, and a life-threatening lung disorder are also associated with this condition.

**lysis** *n.* the gradual subsidence of the symptoms of a disease or disorder. Compare **CRISIS**.

—**lysis** *suffix* dissolution or breaking down (e.g., **PARALYSIS**).

**lysosome** *n.* see **PHAGOCYTOSIS**.

# Mm

**M** abbreviation for memory. See PRIMARY ABILITY.

**M** abbreviation for SAMPLE MEAN.

**MA** abbreviation for MENTAL AGE.

**MacArthur Scale of Subjective Social Status** a measure of an individual's perceived social standing, reflecting his or her impressions of current circumstances, background variables, and future opportunities. The scale consists of two 10-rung ladders on which respondents place an X to indicate their rank relative to others in their community and to others in the general population in terms of typical indicators of SOCIOECONOMIC STATUS, including income, education, and occupational status. The score for each ladder is the number of the rung chosen to represent one's status, with a possible low score of 1 and a high score of 10. Research increasingly suggests that relative social position is an important predictor of overall functioning: High subjective social status has been linked to psychological factors that predispose individuals to better health trajectories and well-being. [developed in 2000 by U.S. psychologist Nancy E. Adler and colleagues]

**mace** *n.* an aromatic spice made from the fibrous seed coat of NUTMEG. Mace has been associated with the euphoric effects produced by nutmeg intoxication, although the active ingredients of nutmeg are concentrated primarily in the oil of the nut.

**Mach bands** an example of a CONTRAST ILLUSION produced by two or more adjacent rectangular gray stimuli or bands that differ in lightness. The part of the light band that borders the dark band appears to be lighter than the rest of the light band, whereas the part of the dark band along the border between the two bands appears to be darker than the rest of the dark band. [Ernst MACH]

**Mach card** a card used to demonstrate the factors that influence the perception of the brightness of a surface. A gray card is folded in half like a book, placed on a surface so that the convex side faces the observer, and then illuminated from either the left or the right. Even though the side closest to the illumination is physically brighter than the other side of the card, both sides appear roughly equal in brightness, an example of BRIGHTNESS CONSTANCY. However, the concave-convex nature of the card is ambiguous when viewed with one eye: When the card is perceived as concave, the side farther from the illumination suddenly appears darker than it does when the card is perceived as convex. [Ernst MACH]

**Mach-Dvorak stereoillusion** an illusion of depth in the motion of a stimulus that moves only in two dimensions, such as a pendulum. The illusion is induced by allowing one eye to view the motion before the other eye and never allowing both eyes to view the motion at the same time. The delay between the signals from the two eyes is interpreted by the visual system as BINOCULAR DISPARITY, a normal DEPTH CUE. Compare PULFRICH EFFECT. [Ernst MACH; Vinko Dvorak (1848–1922), Czech physicist]

**Machian positivism** the subjectivist form of POSITIV-

ISM developed by Ernst MACH. Mach held, with other positivists, that sensory experience is the touchstone of knowledge; however, unlike most other positivists, he held that sensations do not faithfully represent the reality of an EXTERNAL WORLD. Thus, from this antirealist perspective, empirical knowledge is subjective.

**Machiavellian hypothesis** the hypothesis that the evolution of intelligence, especially in its social aspects, was largely dependent on behavior characterized by a desire and striving for power. According to the hypothesis, individuals who are more Machiavellian in their behavior are more likely to be successful in adaptation and thus more likely to spread their genes to future generations. [Niccolò Machiavelli (1469–1527), Italian political theorist]

**Machiavellianism** *n.* a personality trait marked by a calculating attitude toward human relationships and a belief that ends justify means, however ruthless. A **Machiavellian** is one who views other people more or less as objects to be manipulated in pursuit of his or her goals, if necessary through deliberate deception. [Niccolò Machiavelli, who argued that an effective ruler must be prepared to act in this way]

**machine consciousness** **1.** functions simulated by computers or robots as a way of modeling and investigating the behavioral, cognitive, and neural components of human consciousness. **2.** an artificial system (e.g., robot) constructed to have phenomenal consciousness (called **artificial consciousness**). **3.** broadly, the entire interdisciplinary research effort behind both aforementioned senses, involving such areas as artificial intelligence, robotics, computer science, cybernetics, cognitive science, cognitive psychology, philosophy of mind, and neuroscience. See also CHINESE ROOM ARGUMENT; TURING TEST.

**Machover Draw-a-Person Test (DAP Test)** a projective technique based on the interpretation of drawings of human figures. The participant is given a sheet of blank paper and asked first to draw an entire person, without specification of details of age, sex, clothing, and so forth, and then to draw another person, without any specification other than that it must be of opposite sex from the first. The examiner, relying on clinical experience, then interprets the drawings and any verbalizations the participant made while creating them in order to formulate a description of the participant's personality and identify signs of pathology. Various features of the drawings that are assessed include sequence of sex (whether a male or female is drawn first), the order in which body parts are drawn, distortions, omissions, size, and clothing, as well as more structural elements, such as direction of pencil strokes, shadings, and erasures. Analogous to this test is the **Machover Draw-a-House Test (DAH Test)**. [developed in 1949 by Karen Machover (1902–1996), U.S. psychologist]

**mACHR** abbreviation for MUSCARINIC RECEPTOR.

**Mach scale** a measurement of the degree to which individuals condone, tolerate, or condemn the use of manipulation and deceit in pursuit of material or other aims. Persons low in Mach (or MACHIAVELLIANISM) affirm abso-

lute ethical standards; persons high in this quality reveal relative and shifting standards of behavior.

**MacLean's theory of emotion** an extension of PAPEZ'S THEORY OF EMOTION emphasizing the importance of all parts of the LIMBIC SYSTEM, especially the hippocampus and amygdala, in the control of emotional experience. Also called **Papez-MacLean theory of emotion**. See also CANNON-BARD THEORY. [Paul D. **MacLean** (1913–2007), U.S. physician and neuroscientist]

**macro-** (**macr-**) *combining form* large or enlarged.

**macrobiotics** *n.* a theory of nutrition that is based on achieving balance and harmony between foods that are classified, according to the Chinese concept, as either yin or yang (see YIN AND YANG). **Macrobiotic diets** consist mainly of whole grains and vegetables, with fruit and occasional fish; animal products are avoided. Food is prepared and cooked in particular ways to preserve the yin and yang characteristics. [introduced to the West by Japanese educator George Ohsawa (1893–1966)]

**macrocephaly** *n.* a head circumference that is more than two standard deviations above the mean for age, gender, race, and gestation. Although it can be caused by HYDROCEPHALUS or MEGALENCEPHALY, it does not necessarily indicate abnormality. **Benign familial macrocephaly** describes a genetic tendency toward large head size that does not result in cognitive or neurological impairment. Compare MICROCEPHALY. —**macrocephalic** *adj.*

**macroelectrode** *n.* a conductor of electrical current usually with a diameter of a millimeter or more, used, for example, to stimulate or record from tissue. Compare MICROELECTRODE.

**macroergonomics** *n.* an approach to ERGONOMICS that examines any given WORK SYSTEM from a broad perspective in which all of its various elements—physical, organizational, environmental, and cognitive—are given due consideration. Compare MICROERGONOMICS. See also SOCIO-TECHNICAL SYSTEMS APPROACH; SYSTEMS ENGINEERING.

**macroglia** *n.* a relatively large type of nonneuronal central nervous system cell (GLIA), including ASTROCYTES, EPENDYMAL CELLS, and OLIGODENDROCYTES. —**macroglial** *adj.*

**macrogllossia** *n.* an abnormally large tongue, affecting the production of lingual sounds in speech.

**macrogyria** *n.* see LISSENCEPHALY.

**macromastia** *n.* abnormally large breasts in a female.

**macropsia** *n.* a VISUAL ILLUSION in which an object appears to be larger than it is in reality. Also called **megalopsia**. See also METAMORPHOPSIA. Compare MICROPSIA.

**macroskelic** *adj.* denoting a constitutional type of body build in which the most prominent characteristic is abnormally long legs. The macroskelic individual would be classified as the ASTHENIC TYPE in KRETSCHMER TYPOLOGY.

**macrosplanchnic type** a body type in which the trunk is disproportionately large compared with the limbs. Also called **macrosplanchnic build**. [described by Italian physician Giacinto Viola (1870–1943)]

**macrosystem** *n.* **1.** in ECOLOGICAL SYSTEMS THEORY, the level of environmental influence that is most distal to the developing individual and that affects all other systems. It includes the values, traditions, and sociocultural characteristics of the larger society. Compare CHRONOSYSTEM;

EXOSYSTEM; MESOSYSTEM. [introduced by Urie BRONFENBRENNER] **2.** in sociology, any social system or structure.

**macula** *n.* (*pl.* **maculae**) **1.** in hearing, a patch of sensory tissue in the UTRICLE and SACCULE of the inner ear that provides information about the position of the body in relation to gravity. The macula contains sensory HAIR CELLS whose processes (stereocilia) are embedded in a gelatinous matrix (CUPULA) containing calcareous particles (OTOLITHS). When the orientation of the head changes, the relatively dense otoliths respond to gravity, causing the gelatinous mass to shift and the stereocilia to flex. This triggers nerve impulses in the hair-cell fibers, which act as signals to the brain. **2.** in vision, see MACULA LUTEA.

**macula lutea** a small spot in the retina that is in direct alignment with the optics of the eye. It contains a yellow pigment and a central depression, the FOVEA CENTRALIS. Also called **macula**.

**macular degeneration** dystrophy of the MACULA LUTEA, which affects both eyes and causes progressive loss of central vision. Macular degeneration occurs at various ages from birth to old age. **Age-related macular degeneration** is among the most common causes of VISUAL IMPAIRMENT in older people, with an incidence of about 5% in those ages 55 to 64 and up to about 45% in those ages 75 to 84. There are two types: **exudative** (or **wet**) **macular degeneration**, in which blood vessels grow under the retina and hemorrhage in the area of the macula; and **atrophic** (or **dry**) **macular degeneration**, in which one of the retinal layers degenerates or atrophies. Apart from age, other risk factors for the disease include exposure to ultraviolet light, smoking, hypertension, and possibly zinc deficiency in the diet.

**macular sparing** see VISUAL FIELD SPARING.

**macular splitting** see VISUAL FIELD SPARING.

**maculopathy** *n.* damage to the MACULA LUTEA, resulting in deterioration of visual acuity. It is caused by leakage from abnormal retinal capillaries, leading to the formation of hard exudate and edema.

**MADD** abbreviation for MOTHERS AGAINST DRUNK DRIVING.

**Maddox rod test** a test of eye-muscle balance. The individual views a light source through glass rods, which convert it into a line of light: The differential images perceived by the two eyes indicate the degree of HETEROPHORIA. [Ernest Edmund **Maddox** (1860–1933), British ophthalmologist]

**Mad Hatter's disease** a condition caused by chronic mercury poisoning and characterized by changes in mental status, emotional disturbance, gastrointestinal disturbances, and weakness or partial paralysis of the legs. The condition may also cause psychosis, behavioral changes, ERETHISM, and several other symptoms. The name derives from the prevalence of this condition among hatters whose occupation, until the mid-20th century, exposed them to vapors from the mercury used to treat felt for hats. Also called **Mad Hatter's syndrome**.

**madness** *n.* an obsolete name for mental illness or for legal INSANITY.

**MAE** **1.** abbreviation for MOTION AFTEREFFECT. **2.** abbreviation for MULTILINGUAL APHASIA EXAMINATION.

**MAF** abbreviation for MINIMAL AUDIBLE FIELD.

**magazine training** in OPERANT CONDITIONING, the training needed to familiarize an experimental animal with the mechanism (usually a feeder) that delivers the REINFORCER.

**magic** *n.* **1.** a system of practices in which humans attempt to manipulate natural or supernatural forces through such means as rituals, incantations, and spells. Magic had an important social role in many prescientific societies, where its practitioners often held great power and authority. In the modern world, magical belief has survived most obviously as an underground esoteric tradition (see OCCULT) but also in many popular superstitions and New Age practices. Magical rituals can be said to differ from religious rituals in that they involve a direct attempt to control certain physical facts (e.g., the weather), as opposed to a supplication to a higher power or powers. **2.** in some individuals with OBSESSIVE-COMPULSIVE DISORDER, attempts to allay anxiety by invoking certain numbers or performing certain rituals. See also MAGICAL THINKING. —**magical** *adj.*

**magical number** see SEVEN PLUS OR MINUS TWO.

**magical thinking** the belief that events or the behavior of others can be influenced by one's thoughts, wishes, or rituals. Magical thinking is typical of children up to 4 or 5 years of age, after which reality thinking begins to predominate. See also THOUGHT-ACTION FUSION.

**magic circle** a group technique mostly used with children, who gather in a circle and discuss personal issues and concerns. A variation for use in school was developed by U.S. psychiatrist William Glasser (1925–2013) to increase motivation for learning.

**magic mushroom** see PSILOCIN.

**MAGL** abbreviation for monoacylglycerol lipase. See ENDOGENOUS CANNABINOID.

**magnetic resonance imaging (MRI)** a noninvasive diagnostic technique that uses the responses of hydrogen in tissue molecules to strong magnetic impulses to form a three-dimensional picture of body organs and tissues (e.g., the brain) with more accuracy than COMPUTED TOMOGRAPHY. See also FUNCTIONAL MAGNETIC RESONANCE IMAGING.

**magnetic sense** the ability of an organism to orient itself according to the lines of force of a magnet or the magnetic fields of the earth. Some migrating birds tend to follow magnetic fields of the earth with the aid of a sensory apparatus that detects the force of magnetism. Homing pigeons use their magnetic sense as a backup system when solar cues for navigation are lacking, for example, on overcast days.

**magnetic source imaging (MSI)** see MAGNETOENCEPHALOGRAPHY.

**magnetoencephalography (MEG)** *n.* the measurement of the magnetic fields arising from the electrical activity of the brain, using a device called a **magnetoencephalograph (MEG)**. Also called **magnetic source imaging (MSI)**. See also SUPERCONDUCTING QUANTUM INTERFERENCE DEVICE.

**magnification factor** see CORTICAL MAGNIFICATION FACTOR.

**magnification power** see FOCUSING POWER.

**magnitude effect** see BEHAVIORAL ECONOMICS.

**magnitude estimation** a psychophysical procedure in

which participants make subjective judgments of the magnitude of stimuli by assigning them numerical values along a 7- or 10-point scale. The resulting scales often follow a power law (see STEVENS LAW).

**magnitude of effect** see EFFECT SIZE.

**magnitude production** a DIRECT SCALING procedure in which the observer is provided with a number representing the magnitude of a stimulus and is required to adjust the stimulus to produce a sensation that corresponds to this number with reference to a standard stimulus to which a magnitude number has also been assigned. Also called **production method**.

**magnitude scaling of attitudes** a procedure for measuring attitudes and other constructs by representing them as physical stimuli. Participants indicate their attitudes by regulating some perceptual property of a stimulus, such as the brightness of a light, the length of a line, or the pitch of a tone. For example, they might indicate their evaluation of an object by turning a brightness dial on a light, with no light representing an extremely negative attitude and maximum brightness representing an extremely positive attitude. This procedure usually involves reporting the attitude on two different perceptual properties and then validating the measurement procedure by confirming that the mathematical relationship between these two modalities is close to established numerical values for the specific modalities. [primarily developed by U.S. political scientist Milton G. Lodge (1936– )]

**magnocellular system** the part of the visual system that projects to or originates from large neurons in the two most ventral layers (the **magnocellular layers**) of the LATERAL GENICULATE NUCLEUS. It allows the rapid perception of movement, form, and changes in brightness but is relatively insensitive to stimulus location and color. See also M-CELL. Compare PARVOCELLULAR SYSTEM.

**main clause** see CLAUSE.

**main diagonal** the line of values running from the upper left to the lower right of a SQUARE MATRIX. The first value in the main diagonal is the number in the first row and the first column of the matrix, the second value is the number in the second row and second column, and so on.

**main effect** the consistent total effect of a single INDEPENDENT VARIABLE on a DEPENDENT VARIABLE over all other independent variables in an experimental design. It is distinct from, but may be obscured by, an INTERACTION EFFECT between variables.

**mainlining** *n.* slang for taking illicit drugs by intravenous injection. See INTRAVENOUS DRUG USE. —**mainliner** *n.*

**mainstreaming** **n.** **1.** the placement of children with disabilities into regular classroom environments on a part-time basis, such that they attend only some regular education classes during the school day and spend the remaining time in special education classes. The aim is to offer each child the opportunity to learn in an environment that has the highest probability of facilitating rehabilitation efforts and supporting academic growth, although some critics have denounced the practice as requiring that children with disabilities “earn” their opportunity to participate in a regular classroom. See also FULL INCLUSION; LEAST RESTRICTIVE ENVIRONMENT. **2.** the return of recovered or deinstitutionalized patients to the community, where they receive rehabilitative assistance to help them achieve as full and normal a life as possible.

**maintaining cause** an influence in a person's environment that tends to maintain and reinforce maladaptive behavior. An example is the required participation at cocktail parties of a business professional with alcoholism.

**maintenance function** any of the processes that keep an organism's physiological activities in HOMEOSTASIS.

**maintenance rehearsal** repeating items over and over to maintain them in SHORT-TERM MEMORY, as in repeating a telephone number until it has been dialed (see REHEARSAL). According to the LEVELS-OF-PROCESSING MODEL OF MEMORY, maintenance rehearsal does not effectively promote long-term retention because it involves little ELABORATION of the information to be remembered. Also called **rote rehearsal**. See also PHONOLOGICAL LOOP.

**maintenance therapy** treatment or therapy designed to maintain patients in a stable condition and to promote gradual healing or prevent relapse. It usually (but not always) refers to **maintenance drug therapy** (**maintenance pharmacotherapy** or **prophylactic maintenance**). Drug therapy is generally divided into three phases—acute, continuation, and maintenance—roughly corresponding to intervals of 1 month, 6 months, and a year or longer. Patients who respond in the acute and continuation phases may be placed on maintenance pharmacotherapy in the hopes of preventing relapse. Drugs that may be used for maintenance include methadone (see METHADONE MAINTENANCE THERAPY), buprenorphine, antipsychotics, lithium, and antidepressants. Prophylactic maintenance alone, however, does not eliminate relapse; for several conditions, evidence suggests that psychotherapy must also be included to minimize relapse. Although maintenance therapy is often continued indefinitely, patients should be periodically reassessed to determine if such treatment is still necessary.

**major depressive disorder** in *DSM-IV-TR* and *DSM-5*, a mood disorder characterized by persistent sadness and other symptoms of a MAJOR DEPRESSIVE EPISODE but without accompanying episodes of mania or hypomania or mixed episodes of depressive and manic or hypomanic symptoms. Also called **major depression**.

**major depressive episode** in *DSM-IV-TR*, a period in which an individual experiences ANHEDONIA or is persistently sad, pessimistic, or otherwise overly negative. Additional symptoms include poor or increased appetite with significant weight loss or gain; insomnia or excessive sleep; PSYCHOMOTOR AGITATION or PSYCHOMOTOR RETARDATION; loss of energy with fatigue; feelings of worthlessness or inappropriate guilt; reduced ability to concentrate or make decisions; and recurrent thoughts of death, SUICIDAL IDEATION, or ATTEMPTED SUICIDE. *DSM-5* retains these same symptomatic criteria but has removed its predecessor's qualified exclusion of bereavement with respect to major depressive episode and replaced it with a broader advisory (see BEREAVEMENT EXCLUSION). One or more major depressive episodes are a characteristic feature of MAJOR DEPRESSIVE DISORDER and BIPOLAR DISORDER.

**major histocompatibility complex (MHC)** a gene complex that regulates responses of the immune system protecting an organism from disease. The MHC varies greatly among individuals within a species and has been suggested as a basis for MATE SELECTION and KIN RECOGNITION. Mice prefer mates whose MHC differs from their own and can base this choice on differences in individual odors.

**majority influence** social pressure exerted by the

greater part of a group on individual members and smaller factions within the group. The majority tends to push for CONFORMITY and stability, and members usually respond to this either by accepting the majority's position as their own (CONVERSION) or by conforming publicly but retaining their own position privately (COMPLIANCE). Compare MINORITY INFLUENCE.

**majority-minority** *adj.* see MINORITY GROUP.

**majority vote technique** in parapsychology experiments, a technique in which the participant makes several "calls," or guesses, about a single TARGET, the most frequent being considered the participant's response.

**major neurocognitive disorder** in *DSM-5*, a new diagnosis combining and replacing DEMENTIA and AMNESIC DISORDER.

**major tranquilizer** see ANTIPSYCHOTIC.

**mal-** *prefix* **1.** bad or wrong (e.g., MALPRACTICE). **2.** diseased or abnormal (e.g., MALNUTRITION).

**maladaptation** *n.* a condition in which biological traits or behavior patterns are detrimental, counterproductive, or otherwise interfere with optimal functioning in various domains, such as successful interaction with the environment and effectual coping with the challenges and stresses of daily life. Compare ADAPTATION. —**maladaptive** *adj.*

**maladjustment** *n.* **1.** inability to maintain effective relationships, function successfully in various domains, or cope with difficulties and stresses. **2.** any emotional disturbance of a relatively minor nature. —**maladjusted** *adj.*

**malaise** *n.* a vague feeling of general illness, discomfort, or uneasiness.

**malapropism** *n.* a linguistic error in which one word is mistakenly used for another having a similar sound, often to ludicrous effect, as in *She was wearing a cream casserole* (for *camisole*) or *I can't eat pasta without marzipan* (for *parmesan*). The term is named for Mrs. Malaprop, a character in Richard Brinsley Sheridan's play *The Rivals* (1775), whose speech is full of preposterous errors of this kind.

**Malcolm horizon** an improvement in flight instruments, based on ergonomic principles, in which the ground representation of the display is extended across the cockpit. This makes it easier to detect small angular motions. [Richard Malcolm, Canadian aviator]

**mal de ojo** a CULTURE-BOUND SYNDROME, reported in many Mediterranean regions, that is characterized by fever, sleep disturbances, and gastrointestinal problems. It most commonly affects children; the Spanish name translates to EVIL EYE.

**mal de pelea** a CULTURE-BOUND SYNDROME found in Puerto Rico that is similar to AMOK. Individuals experience a period of brooding and then suddenly become violent and attack others around them (the Spanish name literally means "fighting sickness"). Also called **Puerto Rican syndrome**.

**maldevelopment** *n.* the abnormal development of an individual because of genetic, dietary, or external factors.

**male chauvinism** see CHAUVINISM.

**male climacteric** a hypothetical period in some men's lives that has been compared to female menopause (see CLIMACTERIC). Also known as **male menopause**, it occurs some 10 years later than in women and appears to be associated

with declines in the levels of various hormones, such as testosterone. Symptoms, when they occur, include fatigue, problems with memory and concentration, decreased sexual desire, erectile dysfunction, and (in some cases) depression. Also called **andropause**; **male climacterium**. See also GONADOPAUSE.

**male continence** see COITUS RESERVATUS.

**male erectile disorder** in *DSM-IV-TR*, persistent or recurrent inability in a man to achieve or maintain an erection adequate to complete the sex act. It causes marked distress and impairment of interpersonal relations and is not due to the physiological effects of a physical disorder, medication, or a substance of abuse. The disorder may be lifelong or acquired and either situational (occurring only in certain situations or with certain partners) or generalized (occurring in all situations). It is called **erectile disorder** in *DSM-5*. See also ERECTILE DYSFUNCTION; IMPOTENCE.

**male genitalia** see GENITALIA.

**male homosexual prostitution** sexual contact between males for the financial or other gain of one of the participants. Studies indicate that a social hierarchy exists among male prostitutes, as among female prostitutes. Lowest in status are the **street hustlers**, who are usually teenage boys and not necessarily gay themselves; next are the **bar hustlers**; and highest in prestige are the **call boys**, who do not solicit in public.

**male hypoactive sexual desire disorder** see HYPOACTIVE SEXUAL DESIRE DISORDER.

**male-male competition** in species in which the OPERATIONAL SEX RATIO leads to more reproductively active males than females, the rivalry that ensues as males compete over which will be able to mate with receptive females. In some species, such as COOPERATIVE-BREEDING mammals, male parental care is a limiting resource to female reproduction, and there is extensive **female-female competition**.

**male menopause** see MALE CLIMACTERIC.

**maleness** *n.* the quality of being male in the anatomical and physiological sense by virtue of possessing the XY combination of SEX CHROMOSOMES. Compare MASCULINITY.

**male orgasmic disorder** in *DSM-IV-TR*, persistent or recurrent delay in, or absence of, male orgasm during sexual stimulation that produces arousal. The man's age and the quality and duration of stimulation are considered in making this diagnosis, which does not apply if the condition is due only to the effects of drugs or medical conditions. It is identified as **delayed ejaculation** in *DSM-5*. Sometimes also called **retarded ejaculation**.

**male pseudohermaphroditism** see ANDROGEN-INSSENSITIVITY SYNDROME.

**malevolent transformation** the feeling that one lives among enemies and can trust no one. This attitude, purported to be the result of harsh or unfair treatment during childhood, has been posited to be the basis for social withdrawal, hostility, and, in some cases, mental disorder of a persecutory nature. [first described by Harry Stack SULLIVAN]

**malformation** *n.* any abnormality of structure: a DEFORMITY.

**malfunction** *n.* failure to work properly.

**malice aforethought** the mental elements of PREMEDITATION and deliberation or extreme disregard for human

life that are required for a person to be convicted of first-degree murder.

**malignant** *adj.* **1.** describing a disorder that gets progressively worse or is resistant to treatment, eventually causing death. **2.** describing a tumor that invades and destroys tissues and may also spread to other sites (i.e., undergo metastasis). Compare BENIGN.

**malignant hypertension** see HYPERTENSION.

**mali-mali** *n.* a CULTURE-BOUND SYNDROME found in the Philippines, with symptoms similar to those of LATAH.

**malingerer** *n.* the deliberate feigning of an illness or disability to achieve a particular desired outcome. For example, it may take the form of faking mental illness as a defense in a trial, faking physical illness to win compensation, or faking an injury or misinforming people of one's state of rehabilitation to avoid practicing or playing sport. Malingering is distinguished from FACTITIOUS DISORDER in that it involves a specific external factor as the motivating force. —**malingerer** *n.*

**malleation** *n.* a spasmodic tic in which the hands twitch in a hammering motion against the thighs.

**malleus** *n.* see OSSICLES.

**malnutrition** *n.* a state characterized by an unhealthy balance of carbohydrates, fats, proteins, vitamins, and minerals in the diet. Malnutrition may be due to excessive intake of certain food categories, as in OBESITY and hypervitaminosis (see VITAMIN A TOXICITY; VITAMIN D TOXICITY), or inadequate food intake. Dietary deficiencies play a role in many physical and psychological disorders. For example, nicotinic acid deficiency is marked by depression and other mental disturbances (see PELLAGRA). Research suggests that mild nutritional deficiencies have little, if any, effect on intelligence but that moderate and (especially) severe deficiencies can result in intellectual deficits. See also KWASHIORKOR; MARASMUS; THIAMINE; VITAMIN DEFICIENCY.

**malpractice** *n.* professional misconduct or negligent behavior on the part of a practitioner (e.g., psychotherapist, psychiatrist, doctor, lawyer, financial adviser) that may lead to legal action.

**mal puesto** see ROOTWORK.

**Malthusian theory** the doctrine proposed by British economist Thomas Malthus (1766–1834) that exponential increases in population growth would surpass arithmetical increases in food supply with dire consequences, unless population growth was arrested by such means as famine, war, or the control of reproduction through moral restraint. In the Western world, Malthus was proved wrong owing to increased prosperity from industrialization. However, his analysis has remained influential (see NEO-MALTHUSIAN). Also called **Malthusianism**; **Malthus theory**.

**maltreatment** *n.* the ABUSE or NEGLECT of another person, which may involve emotional, sexual, or physical action or inaction, the severity or chronicity of which can result in significant harm or injury. Maltreatment also includes such actions as exploitation and denial of basic needs (e.g., food, shelter, medical attention).

**malum** *n.* a painful degenerative state of a joint as a result of aging.

**malum in se** in law, an action that is considered wrong because it is “evil in itself,” such as murder. Compare MALUM PROHIBITUM.



**malum prohibitum** in law, an action that is considered wrong because it is against the law, such as driving without a valid license. Compare MALUM IN SE.

**mammalingus** *n.* the act of suckling the breast during sexual intercourse, particularly in terms of the concept, proposed by British psychoanalyst Ernest Jones (1879–1958), that the act represents a type of fellatio. Mammalingus is distinguished from the normal interest and pleasure derived from caressing or orally stimulating the breasts as a part of sexual activity.

**mammary gland** any of the glands in female mammals that secrete milk. In humans, the mammary glands are called BREASTS.

**mammillary body** either of a pair of small, spherical nuclei at the base of the brain, slightly posterior to the infundibulum (pituitary stalk), that are components of the LIMBIC SYSTEM. Also called **corpus mammillare**.

**mammillothalamic tract** the TRACT that connects the mammillary bodies to the thalamus at the base of the brain.

**mammography** *n.* a diagnostic procedure that uses low-dose X-ray photography to detect breast tumors or other abnormalities, either noncancerous (BENIGN) or cancerous (MALIGNANT). The X-ray negative produced is called a **mammogram**.

**managed behavioral health organization** (MBHO) a health maintenance organization (see HMO) that specializes in the management, administration, and provision of health care benefits with an emphasis on BEHAVIORAL HEALTH.

**managed care** any system of health care delivery that regulates the use of member benefits to contain expenses. The term originally referred to prepaid health plans (e.g., HMOs) but is now applied to many different kinds of reimbursement and UTILIZATION REVIEW mechanisms. It is also used to denote the organization of health care services and facilities into groups to increase cost-effectiveness.

**Managed care organizations** (MCOs) include HMOs, PPOs (preferred provider organizations), point-of-service plans (POSSs), exclusive provider organizations (EPOs), PHYSICIAN–HOSPITAL ORGANIZATIONS (PHOs), INTEGRATED DELIVERY SYSTEMS (IDSs), and INDEPENDENT PRACTICE ASSOCIATIONS (IPAs).

**management by objectives** (MBO) a type of ORGANIZATIONAL DEVELOPMENT program that focuses on the setting of goals and objectives and the evaluation of performance on the basis of their achievement. Such programs may also involve the introduction of new INCENTIVE SYSTEMS, PARTICIPATIVE DECISION MAKING, and a process of JOB DESIGN.

**management development** programs used to improve the effectiveness with which people in managerial or executive positions perform their roles. Management development can involve a variety of interventions, including classroom training, counseling, mentoring, and EXECUTIVE COACHING as well as BUSINESS GAMES and other role-play techniques. See also ORGANIZATIONAL DEVELOPMENT; PERSONNEL TRAINING.

**management fashion** management practices that are currently popular but not necessarily well-grounded in either theory or practice. [defined in 1996 by U.S. management theorist Eric Abrahamson (1958– )]

**management information systems** (MIS) systems that combine information technology, data, procedures for processing the data, and people who collect and use the data with the objective of helping managers to make informed decisions.

**management psychology** see MANAGERIAL PSYCHOLOGY. See also INDUSTRIAL AND ORGANIZATIONAL PSYCHOLOGY.

**management-simulation game** see BUSINESS GAME.

**managerial grid** see BLAKE–MOUTON MANAGERIAL GRID.

**managerial psychology** the application of a knowledge of human behavior to issues that arise in the management of organizations, especially with regard to decision making, problem solving, leadership, and human relations in the workplace. Although often used synonymously with INDUSTRIAL AND ORGANIZATIONAL PSYCHOLOGY, the term suggests an approach that adopts the perspective of the employer. Also called **management psychology**.

**MANCOVA** acronym for MULTIVARIATE ANALYSIS OF COVARIANCE.

**mand** *n.* in linguistics, a category of UTTERANCES in which the speaker makes demands on the hearer, as in *Listen to me* or *Pass the salt, please*. According to the behaviorist analysis of language, this form of VERBAL BEHAVIOR is reinforced by the compliance of the listener. See BEHAVIORISM. [coined by B. F. SKINNER from *command* and *demand*]

**mandated reporting** the legal requirement in the United States that psychologists and other human services personnel (e.g., social workers, nurses) report any suspected or known cases of abuse or neglect of a child, a dependent adult, or an older person. Those who fail to report such cases may be subject to legal and professional sanctions.

**mandate phenomenon** a tendency for leaders to overstep the bounds of their authority when they feel they have the overwhelming support of the group. As the number of people favoring a particular person for leadership increases, that leader is less likely to anticipate criticism for his or her actions, is less concerned about dissenting others, and may even attach invulnerability to his or her decisions.

**mandibular reflex** see JAW JERK.

**mandibulofacial dysostosis** see TREACHER COLLINS SYNDROME.

**mandrake** *n.* the root or other parts of the plant *Mandragora officinarum*, traditionally used as an anesthetic, aphrodisiac, hallucinogen, and folk remedy for asthma, whooping cough, stomach ulcers, and other conditions. The name derives from the supposed resemblance of the root to the human form; *-drake* (from the Old English word for dragon) alludes to the alleged magical powers of the plant. A member of the nightshade family, it contains the anticholinergic alkaloids scopolamine, mandragorine, and hyoscyamine, which are poisonous and potentially fatal. Symptoms of poisoning include flushing, pupillary dilation, dry mucous membranes, and dry mouth, progressing to visual disturbances, hallucinations, restlessness, agitation, delirium, and possibly death from respiratory failure.

**mania** *n.* **1.** generally, a state of excitement, overactivity, and PSYCHOMOTOR AGITATION, often accompanied by over-optimism, grandiosity, or impaired judgment. **2.** more specifically, a MANIC EPISODE or, sometimes, a HYPOMANIC

**EPISODE. 3.** preoccupation with a particular activity or idea, especially when used as a suffix (e.g., KLEPTOMANIA, PYROMANIA).

**mania a potu** see IDIOSYNCRATIC INTOXICATION.

**maniac** *n.* **1.** a lay term for a mentally or emotionally disturbed person, particularly one who is considered dangerous to others. **2.** an obsolete name for a person who experiences MANIA.

**manic** **1.** *adj.* relating to MANIA. **2.** *n.* an obsolete name for a person experiencing a MANIC EPISODE.

**manic-depressive illness** see BIPOLAR DISORDER.

**manic episode** a period characterized by elevated, expansive, or irritable mood, often with several of the following symptoms: an increase in activity or PSYCHOMOTOR AGITATION; talkativeness or PRESSURED SPEECH; FLIGHT OF IDEAS or racing thoughts; inflated self-esteem or grandiosity; a decreased need for sleep; extreme distractibility; and intense pursuit of activities that are likely to have unfortunate consequences (e.g., buying sprees, sexual indiscretions). In *DSM-IV-TR* and *DSM-5*, a distinguishing criterion between a manic and a HYPOMANIC EPISODE is their duration, with manic episodes lasting at least a week and hypomanic episodes lasting at least 4 consecutive days. One or more manic episodes are characteristic of BIPOLAR DISORDER. See also MIXED EPISODE.

**manifest anxiety** in psychoanalysis, anxiety with overt symptoms that indicate underlying emotional conflict or repression.

**Manifest Anxiety Scale** see CHILDREN'S MANIFEST ANXIETY SCALE; TAYLOR MANIFEST ANXIETY SCALE.

**manifestation** *n.* an observable expression, indication, or sign of a physical or psychological condition.

**manifest content** **1.** the matter that is overtly expressed and consciously intended in any utterance or other form of communication. **2.** in psychoanalytic theory, the images and events of a dream or fantasy as experienced and recalled by the dreamer or fantasist, as opposed to the LATENT CONTENT, which is posited to contain the hidden meaning. See also DREAM ANALYSIS; DREAM CENSORSHIP; DREAM-WORK.

**manifest goal** in evaluation research, an openly stated, objectively defined goal of an organization or program. Manifest goals are specified by indicators of success and assessed in an evaluation program. Compare LATENT GOAL.

**manifest variable** a variable whose values can be directly observed or measured, as opposed to one whose values must be inferred. In STRUCTURAL EQUATION MODELING and FACTOR ANALYSIS, manifest variables are used to study LATENT VARIABLES. Also called **indicator variable**.

**manipulandum** *n.* (*pl.* **manipulanda**) an object designed to be manipulated in a psychological test or experiment.

**manipulation** *n.* **1.** behavior designed to exploit, control, or otherwise influence others to one's advantage. **2.** in an EXPERIMENTAL DESIGN, the researcher's adjustment of an independent variable such that one or more groups of participants are exposed to specific treatments while one or more other groups experience a CONTROL CONDITION. For example, a health researcher could introduce a manipulation so that a portion of the participants in a study randomly receive a new drug, whereas the remaining

participants receive only a PLACEBO. See EXPERIMENTAL VARIABLE.

**manipulation check** any means by which an experimenter evaluates the efficacy of an EXPERIMENTAL VARIABLE, that is, verifies that a manipulation affected the participants as intended.

**man-machine system** see HUMAN-MACHINE SYSTEM.

**mannerism** *n.* a gesture, facial expression, or verbal habit peculiar to the individual.

**manners** *pl. n.* respectful, polite, and socially acceptable ways of behaving. Codes of manners vary greatly from one culture to another and may also vary between classes or subcultures in a society.

**manning theory** see STAFFING THEORY.

**Mann-Whitney *U* test** a NONPARAMETRIC TEST of centrality for ORDINAL DATA that contrasts scores from two INDEPENDENT SAMPLES to assess whether there are significant differences between the two sets of rankings. The statistic obtained from this test, *U*, is calculated by summing the number of ranks in one group that are smaller than each of the ranks in the other group. A Mann-Whitney *U* test is analogous to a ONE-WAY ANALYSIS OF VARIANCE, except that the former is conducted with ranked data and the latter is conducted with CONTINUOUS data. See also WILCOXON-MANN-WHITNEY TEST. [Henry Berthold **Mann** (1905–2000), Austrian-born U.S. mathematician; Donald Ransom **Whitney** (1915–2001), U.S. statistician]

**manoptoscope** *n.* a hollow cone used for measuring EYE DOMINANCE. The observer views a small target by placing the base of the cone near the eyes and then viewing the target through the small end of the cone while closing first one eye and then the other. The eye through which the target is actually seen is the dominant eye.

**MANOVA** acronym for MULTIVARIATE ANALYSIS OF VARIANCE.

**mantle layer** in neuroanatomy, the middle layer of the embryonic NEURAL PLATE, which develops into cerebral GRAY MATTER.

**mantra** *n.* **1.** in Hinduism and Buddhism, a sacred utterance, such as a syllable, phrase, or hymn (often in Sanskrit). **2.** any verbal formula used for spiritual, religious, or meditative purposes to help block out extraneous thoughts and induce a state of relaxation that enables the individual to reach a deeper level of consciousness. See also CONCENTRATIVE MEDITATION; TRANSCENDENTAL MEDITATION. Compare YANTRA.

**manual arts therapy** training in industrial arts, such as woodworking and metalworking, for therapeutic purposes as part of the rehabilitation process. See also OCCUPATIONAL THERAPY.

**manual-assisted therapy** see MANUALIZED THERAPY.

**manual-based therapy** see MANUALIZED THERAPY.

**manual communication** communication with the hands rather than by speech. Manual communication encompasses SIGN LANGUAGE and FINGERSPELLING and is used primarily with or between people who are deaf or have severe hearing loss.

**manual-control effects** in the manual control of aircraft or spacecraft, the effects on human performance of the nature and complexity of the task, G forces (accelera-

tion levels), and the aerodynamic characteristics of the vehicle.

**manual dominance** see HANDEDNESS.

**manualism** *n.* a method of instruction for people with severe hearing impairment that depends on the use of SIGN LANGUAGE and FINGERSPELLING for communication. Also called **manual method**.

**manualized therapy** interventions that are performed according to specific guidelines for administration, maximizing the probability of therapy being conducted consistently across settings, therapists, and clients. Also called **manual-assisted therapy**; **manual-based therapy**.

**MAO** abbreviation for MONOAMINE OXIDASE.

**MAOI (MAO inhibitor)** abbreviation for MONOAMINE OXIDASE INHIBITOR.

**MAP 1.** abbreviation for MINIMAL AUDIBLE PRESSURE. **2.** abbreviation for MODAL ACTION PATTERN.

**maple-syrup urine disease (MSUD)** an autosomal recessive disorder of amino acid metabolism involving a deficiency of enzymes required for processing leucine, isoleucine, and valine. The urine and sweat of affected individuals have a distinctive maple-syrup odor. Other characteristics include developmental delay, HYPERTONIA, altered reflexes, vomiting, lethargy, and convulsions. If untreated with special diets, dialysis, and transfusions, among other therapeutic measures, the disorder can be fatal.

**maprotiline** *n.* a tetracyclic antidepressant closely related to the TRICYCLIC ANTIDEPRESSANTS. Like the tricyclic agents, it can cause adverse ANTICHOLINERGIC EFFECTS and serious disturbances in heart rhythm; its use has therefore declined, and it is rarely encountered in modern clinical practice. U.S. trade name: **Ludiomil**.

**map-tracing test** a test of the ability to visualize spatial relations and to orient oneself in space. It is used, for example, to test a pilot's ability to distinguish up from down when no obvious reference point, such as the horizon, is available.

**MAR** abbreviation for MISSING AT RANDOM.

**marasmus** *n.* a condition (from Greek *marasmos*, "consumption"), usually occurring in infancy, that is characterized by apathy, withdrawal, and emaciation resulting from severe malnutrition. If left untreated, it can result in delayed physical and cognitive development and, in some cases, death. Marasmus tends to occur mostly in developing countries, often as a result of famine, premature or abrupt weaning, or vitamin insufficiency due to limitations in food variety. It can, however, occur in developed nations as well—for example, in children living in poor rural and urban areas, children with chronic disease, and children who are institutionalized. See also KWASHIORKOR.

**marathon group** an ENCOUNTER GROUP that meets in seclusion for a single extended session, usually varying from 6 hours to several days, on the theory that this will elicit more intense interactions, foster a greater sense of intimacy and sharing, and encourage a freer expression of feelings as the time elapses than would a series of shorter, interrupted sessions. Such groups are often organized around addressing a single issue or related set of issues. See also TIME-EXTENDED THERAPY.

**Marbe's law** in WORD-ASSOCIATION TESTS, the finding that the speed of making an association is proportional to

the number of people who make that association. [Karl **Marbe** (1869–1953), German psychologist]

**marche à petits pas** a shuffling, progressively accelerating gait commonly seen in PARKINSON'S DISEASE. See FESTINATING GAIT. [French, literally: "walking in little steps"]

**Marfan's syndrome** an autosomal dominant disorder (see DOMINANT ALLELE) of the connective tissue in the body, affecting the blood vessels, skeleton, and eyes. Common symptoms of the disorder include an unusually tall frame, long fingers and toes, loose joints, curvature of the spine, protruding breastbone (pectus carinatum), and dislocation of the lens of the eye. The aorta of the heart may also be enlarged, and there may be leakage in the aortal valve. [Antoine Bernard-Jean **Marfan** (1858–1942), French pediatrician]

**marginal 1.** *adj.* borderline or on the periphery. **2.** *n.* in statistics, see MARGINAL FREQUENCY.

**marginal consciousness** contents of CONSCIOUSNESS that are not at the center of attention. Marginal stimuli are not equivalent to subliminal stimuli. See FRINGE CONSCIOUSNESS; SUBLIMINAL PERCEPTION.

**marginal frequency** the sum of any one of the rows or columns in a data matrix. For example, in a table of students classified by sex and area of study, the number of female students, regardless of area of study, would be one marginal frequency, and the number of students enrolled in a specific area of study, regardless of sex, would be another.

**marginal group** in a relatively homogeneous country or community, a distinct group that is not assimilated into the social mainstream because it differs (or is viewed as differing) in one or more significant ways, as in its religious or cultural beliefs. Also called **marginalized group**.

**marginal intelligence** an intelligence level between average and mental disability.

**marginalization** *n.* a reciprocal process through which an individual or group with distinctive qualities, such as idiosyncratic values or customs, becomes identified as one that is not accepted fully into the larger group. See also ACCULTURATION STRATEGIES. —**marginalize** *vb.*

**marginal sulcus** a branch of the CINGULATE SULCUS that turns upward between the paracentral lobule and superior frontal gyrus on the surface of each cerebral hemisphere.

**marginal value theorem** a part of OPTIMAL FORAGING THEORY that predicts when an organism should leave one food source and travel to the next. Decisions are based on the benefits and costs of staying in a location where food sources are known but declining compared with the costs and benefits of traveling to a new, unknown food source. In experimental work, the time and effort needed to travel to a new area appears to regulate how long animals remain foraging in the current area.

**margin of error (MOE)** a statistic expressing the CONFIDENCE INTERVAL associated with a given measurement; it is an allowance for a slight miscalculation or an acceptable deviation. The larger the margin of error for the sample data, the less confidence one has that the results obtained are accurate for the entire population of interest.

**marianismo** *n.* in many Latin American or Hispanic cultures, an idealized traditional feminine gender role characterized by submissiveness, selflessness, chastity, hyperfemininity, and acceptance of machismo in males. Although

clearly derived from the traditional ideal of the Virgin Mary, marianismo is not to be confused with a specific religious practice of the Roman Catholic Church.

**marijuana** (**marihuana**) *n.* see CANNABIS.

**Marinesco–Sjögren syndrome** an autosomal recessive hereditary disorder marked by cataracts, short stature, CEREBELLAR ATAXIA (incoordination of voluntary movements), and mild to moderate intellectual disability. Affected individuals may live well past middle age but often lose their ability to walk because of progressive muscle weakness. [reported in the 1930s by Georges **Marinesco** (1864–1938), Romanian neurologist, and Torsten **Sjögren** (1896–1974), Swedish physician]

**Marinol** *n.* a trade name for dronabinol. See TETRAHYDROCANNABINOL.

**marital adjustment** the process by which married couples attain mutual gratification and achieve common goals while maintaining an appropriate degree of individuality. Especially important to marital adjustment are (a) the sharing of experiences, interests, and values; (b) respect for the partner's individual needs, aims, and temperament; (c) maintenance of open lines of communication and expression of feeling; (d) clarification of roles and responsibilities; (e) cooperation in decision making, problem solving, and rearing of children; and (f) attainment of mutual sexual gratification.

**marital conflict** open or latent antagonism between marriage partners. The nature and intensity of conflicts vary greatly, but studies indicate that the prime sources are often sexual disagreement, child-rearing differences, temperamental differences (particularly the tendency of one partner to dominate), and, to a lesser extent, religious differences, differences in values and interests, and disagreements over money management.

**marital counseling** see MARRIAGE COUNSELING.

**marital schism** a condition of open discord between marital partners that puts a strain on the marriage and may lead to separation or divorce.

**marital separation** the situation in which a previously cohabiting married couple stops living together and instead maintains individual residences, finances, and so forth. When the couple has children, the term **parental separation** is often used. Separation may be informal via mutual agreement or legally arranged via an official, enforceable document. In both cases, the partners remain married, which distinguishes separation from DIVORCE. Increasingly common in Western societies, separation has the potential for significant consequences, including diminished psychosocial functioning, deterioration of the parent–child relationship, and long-term emotional disturbances and mental health problems (e.g., anxiety, depression).

**marital skew** an unhealthy pattern in which the pathological behavior of the dominant partner in a couple is accepted by the other partner. See also COLLUSIONAL MARRIAGE.

**marital subsystem** the relationship between two spouses or partners in a family and their particular interactional rules for cooperation, conflict, and conflict resolution over marital issues (e.g., child rearing).

**marital therapy** see COUPLES THERAPY.

**mark-and-recapture sampling** see CAPTURE–TAG–RECAPTURE SAMPLING.

**marker** *n.* **1.** a detectable sign, as in a GENETIC MARKER or CLINICAL MARKER. **2.** any variation in a process or characteristic that is associated with a condition, event, or other object of interest. For example, enlarged perivascular spaces are a promising neuroimaging marker of small vessel disease. See BIOCHEMICAL MARKER; BIOLOGICAL MARKER.

**marketing orientation** in the existential psychoanalysis of Erich FROMM, a character pattern in which the individual regards people as commodities and evaluates personal worth in terms of salability. Attributes perceived as leading to business or social success are valued more than knowledge, creativity, integrity, or dedication. According to Fromm, the marketing orientation contributes to shallow relationships and alienation from self and society. Also called **marketing character**. Compare EXPLOITATIVE ORIENTATION; HOARDING ORIENTATION.

**market research** research undertaken to understand the size and nature of a particular market, together with any significant trends or challenges. This may involve interviews to assess the relative positions of various suppliers in the minds of consumers. For example, a comparison may be made between restaurants that are perceived to offer good service and high-quality food at a low price with those perceived to provide good service and high-quality food at a high price. The term **marketing research** is used more specifically to mean research into the effectiveness of marketing techniques.

**Markov chain** a sequence of steps or events in which the probability of each transition depends only on the immediately preceding step and not on any earlier step. For example, when a person considers a behavior change such as losing weight he or she experiences certain stages: The individual could move from not thinking about losing weight (precontemplation) to considering a weight loss plan (contemplation), through to sustaining a reasonable weight (maintenance), and conceivably back to not wanting to think about weight loss. This process could be described as a Markov chain. Also called **Markov process**. Compare RANDOM WALK. [Andrei **Markov** (1856–1922), Russian mathematician]

**Marlowe–Crowne Social Desirability Scale (M–C SDS)** a widely used research scale that attempts to assess the degree to which participants answer questions in such a manner as to present themselves in a favorable light. Test scores are often used in research wherein people might be inclined to bias their behavior in a socially desirable direction, rather than being perfectly frank. Although currently available in a variety of forms, the Marlowe–Crowne scale as it was originally developed in 1960 consisted of 33 self-descriptive statements (e.g., “I am sometimes irritated by people who ask favors of me”) to which participants responded *true* or *false*. [David **Marlowe** (1931–1990) and Douglas P. **Crowne** (1928– ), U.S. psychologists]

**Maroteaux–Lamy syndrome** an inherited disorder of connective tissue and skeletal development: one of the MUCOPOLYSACCHARIDOSES. It is marked by dwarfism of the trunk and extremities and in some cases delayed closure of the cranial sutures, maldevelopment of the facial bones, and hearing loss. Also called **mucopolysaccharidosis VI; systemic mucopolysaccharidosis**. [Pierre **Maroteaux** (1926– ), French geneticist; Maurice **Lamy** (1895–1975), French physician]

**Marplan** *n.* a trade name for ISOCARBOXAZID.

**marriage** *n.* the social institution in which two (or, less frequently, more) people commit themselves to a socially sanctioned relationship in which sexual intercourse is legitimated and there is legally recognized responsibility for any offspring as well as for each other. Although there are exceptions, the marital partners typically live together in the same residence. See also COMMON-LAW MARRIAGE; DOMESTIC PARTNERSHIP; GROUP MARRIAGE; SAME-SEX MARRIAGE. —**marital** *adj.*

**marriage counseling** COUPLES COUNSELING with partners who are married. Also called **marital counseling**.

**marriage-enrichment group** a support or therapy group in which married couples meet under the guidance of a professional or nonprofessional leader to discuss marriage-related problems and issues. See also COUPLES THERAPY.

**marsupial** *n.* a nonplacental animal of the subclass Metatheria, such as the opossum or Tasmanian devil. Marsupials are born at a very early developmental stage and spend a prolonged period of development in the maternal pouch. Most marsupials are found in the southern hemisphere, particularly in Australia, New Guinea, and nearby islands.

**Marxism** *n.* a philosophical position and economic theory drawn directly or indirectly from the works of Karl MARX. Although there is much debate about the true nature of Marxism, there is general agreement that it emphasizes the role of economics (control of the means of production) in subtly determining other social institutions, the importance of labor as the foundation of all economies, the failings of capitalism as an economic system, and a utopian vision of social equality. Marxism has spawned, or been appropriated by, a number of social revolutionary and communist movements, including communism. See also CLASS THEORY; DIALECTICAL MATERIALISM. —**Marxist** *adj., n.*

**Marxist feminism** a branch of FEMINISM that locates the oppression of women in the context of a Marxist analysis of the oppression of the working class, thus viewing the oppression as systemic and ubiquitous. Marxist feminism concentrates on the economic aspects of women's oppression and advocates remedies largely consonant with Marxist principles. See MARXISM; RADICAL FEMINISM.

**masculinity** *n.* possession of social role behaviors that are presumed to be characteristic of a boy or man, as contrasted with MALENESS, which is genetically determined. —**masculine** *adj.*

**masculinity-femininity test** any test designed to measure the degree of masculinity or femininity in participants. The earliest was the Terman-Miles Attitude-Interest Analysis Test (1938); others, usually in inventory form, are the MINNESOTA MULTIPHASIC PERSONALITY INVENTORY, the GUILFORD-ZIMMERMAN TEMPERAMENT SURVEY, and the Gough Femininity Scale. The BEM SEX ROLE INVENTORY is one of the few masculinity-femininity tests to include androgyny.

**masculinization** *n.* see VIRILISM.

**masked audiogram** see MASKING PATTERN.

**masked depression** a condition in which an individual experiencing a MAJOR DEPRESSIVE EPISODE complains of physical symptoms (e.g., headache, backache) rather than

mood disturbance, and no biological cause of the physical symptoms can be found.

**masking** *n.* **1.** in perception, the partial or complete obscuring of one stimulus (the target) by another (the masker). The stimuli may be sounds (see AUDITORY MASKING), visual images (see VISUAL MASKING), tastes, odorants, or tactile stimuli. **Forward masking** occurs when the masker is presented a short time before the target stimulus, **backward masking** occurs when it is presented shortly afterward, and **simultaneous masking** occurs when the two stimuli are presented at the same instant. Also called **perceptual masking**. **2.** in statistics, the obscuring of the effect of one variable by the effect of another variable. For example, a researcher interested in whether risky sexual behavior is related to alcohol use might find that an experience of sexual abuse exerts a stronger influence on sexual behavior, thus masking the effect of alcohol use. —**mask** *vb.*

**masking level difference (MLD)** a change in detection threshold for auditory stimuli produced by changes in the interaural characteristics of the masker or the signal (see AUDITORY MASKING). The typical reference is the signal threshold in the DIOTIC condition (NOS0), in which a pure-tone signal and noise masker are both presented in phase at the ears. For a DICHOTIC condition, such as NOS $\pi$  (noise in phase, signal 180° out of phase), the detection threshold may be 15 dB lower. The MLD and related phenomena have provided valuable insights into the mechanisms involved in BINAURAL hearing and sound localization (see AUDITORY LOCALIZATION). Also called **binaural masking level difference (BMLD)**.

**masking pattern** the detection thresholds as a function of frequency for a pure-tone signal masked by a sound whose spectral characteristics and level are fixed. The *y*-axis may be either the level of the signal at threshold (in DECIBELS sound-pressure level) or the amount of masking. Also called **masked audiogram**. See AUDITORY MASKING.

**Maslach Burnout Inventory (MBI)** a method for the evaluation of BURNOUT on three dimensions: emotional exhaustion, DEPERSONALIZATION, and reduced personal accomplishment. It consists of 22 statements about feelings and attitudes to which participants respond in terms of frequency on a 7-point scale ranging from *never to every day*. [Christina Maslach (1946– ), U.S. psychologist]

**Maslow's motivational hierarchy** the hierarchy of human motives, or needs, as described by Abraham MASLOW, which he developed in part as a reaction against the determinism of the theories of Sigmund FREUD and B. F. SKINNER. PHYSIOLOGICAL NEEDS (air, water, food, sleep, sex, etc.) are at the base; followed by safety and security (the SAFETY NEEDS); then love, affection, and gregariousness (the LOVE NEEDS); then prestige, competence, and power (the ESTEEM NEEDS); and, at the highest level, aesthetic needs, the need for knowing, and SELF-ACTUALIZATION (the METANEEDS).

**Maslow's theory of human motivation** the humanistic view of motivation proposed by Abraham MASLOW, in which the higher human needs for understanding, aesthetic values, self-realization, and PEAK EXPERIENCES are emphasized. Maslow contrasted the METAMOTIVATION arising from such METANEEDS with the DEFICIENCY MOTIVATION arising from physical needs, insecurity, and alienation.

**masochism** *n.* the derivation of pleasure from experiencing pain and humiliation. The term generally denotes SEX-

UAL MASOCHISM but is also applied to experiences not involving sex, such as martyrdom, religious flagellation, or asceticism. In classical psychoanalytic theory, masochism is interpreted as resulting from the DEATH INSTINCT or from aggression turned inward because of excessive guilt feelings. [Leopold Sacher **Masoch** (1835–1895), Austrian writer] —**masochist** *n.* —**masochistic** *adj.*

**masochistic fantasies** fantasies of being whipped, choked, or otherwise hurt or abused as an expression of masochistic tendencies, particularly as a means of achieving sexual excitement. See SEXUAL MASOCHISM.

**masochistic personality disorder** a personality disorder in which individuals persistently and characteristically obtain gratification or freedom from guilt feelings as a consequence of humiliation, self-derogation, self-sacrifice, wallowing in misery, and, in some instances, submitting to physically sadistic acts. This disorder was listed in *DSM-III-R* as SELF-DEFEATING PERSONALITY DISORDER but was deleted from *DSM-IV-TR*. The term is controversial because many believe that in some cases it blames the victim of abuse.

**mass action** Karl S. LASHLEY's generalization that the size of a cortical lesion, rather than its specific location, determines the extent of any resulting performance decrement. Proposed in 1929 following experimental observations of the effects of different brain lesions on rats' ability to learn a complex maze, the concept reflects Lashley's belief that large areas of the cortex function together in learning and other complex processes. This concept is no longer considered completely valid. Also called **law of mass action**; **principle of mass action**. See also EQUIPOTENTIALITY.

**massage** *n.* the structured stroking or kneading of a body area or of the entire body by hand or by a mechanical or electrical device. Manual massage is usually administered for therapeutic and rehabilitative purposes because the hands can detect abnormalities, such as swellings or muscle spasms. Among the benefits of massage are improved circulation, reduced pain, the promotion of relaxation and healing from injury, and release from tension and psychological stress.

**massa intermedia** see INTERTHALAMIC ADHESION.

**mass contagion** a form of SOCIAL CONTAGION in which behaviors, attitudes, or affect rapidly spread throughout large groups or populations, including those who are widely dispersed across a large area. See also BEHAVIORAL CONTAGION; EMOTIONAL CONTAGION.

**massed practice** a learning procedure in which practice trials occur close together in time, either in a single lengthy session or in sessions separated by short intervals. Massed practice is often found to be less effective than DISTRIBUTED PRACTICE.

**massed repetition** see REPETITION EFFECT.

**masseter reflex** see JAW JERK.

**mass hysteria** see COLLECTIVE HYSTERIA.

**mass media** sources of public communication to a wide audience, traditionally including news and entertainment publications (primarily newspapers and magazines) and radio and television broadcasts intended for the general public, but now also including the Internet.

**mass murder** the act of killing several to many people.

The mass murder of an entire population (e.g., a racial or ethnic group) is called GENOCIDE. See also SPREE MURDER.

**Masson disk** a device for measuring the threshold of brightness vision. The disk is white with a black segmented line along one radius. When it is rotated, varying shades of gray are seen, the darkest at the center. The point at which the disk becomes indistinguishable from the background provides the required measurement. [Antoine-Philibert **Masson** (1806–1860), French physicist]

**mass psychology** **1.** the mental and emotional states and processes that occur in a large body of individuals who, although they may not have any common characteristics, are considered as a whole. **2.** the scientific study of these phenomena, including the study of mass movements, COLLECTIVE HYSTERIA, and the effects of the media.

**mass reflex** **1.** an indiscriminate response of many body effectors to a single stimulus, as in "freezing" with fear. **2.** a life-threatening condition associated with spinal cord injury in which uncontrolled activation of both autonomic and somatic motor systems occurs.

**mass-spring model** see EQUILIBRIUM-POINT MODEL.

**mass suicide** the deliberate ending of the lives of all or most of the members of an intact social group or aggregate by the members themselves, either directly through self-injurious behavior or indirectly by choosing a course of action that will likely be fatal. Examples include extremely hazardous missions undertaken by combat units (see ALTRUISTIC SUICIDE) and the suicides of the more than 900 members of the People's Temple in Jonestown, Guyana, in 1978; the 70 members of the Order of the Solar Temple in Europe and Canada between 1994 and 1997; and the 39 Heaven's Gate followers of Marshall Applewhite in San Diego in 1997. Mass suicide often occurs at the command of a charismatic leader and may be provoked not by despair but by the desire to seek a "higher state of existence" promised by the leader. Also called **collective suicide**. Compare CLUSTER SUICIDE.

**mass-to-specific development** in fetal and infantile development, progression from gross, random movements involving the whole body to more refined movements of body parts.

**MAST** acronym for MICHIGAN ALCOHOLISM SCREENING TEST.

**mastery goal** see LEARNING GOAL.

**mastery learning** **1.** the process of gaining knowledge in a certain subject or domain, with the intent of understanding the full scope of that subject area. **2.** a theory of education in which students learn material in several different ways over a series of study sessions until they understand the material well enough to teach it to others. **3.** the acquisition of material beyond basic recognition, recall, and understanding to a point of thorough cognitive integration at a conceptual level.

**mastery orientation** an adaptive pattern of achievement behavior in which individuals enjoy and seek challenge, persist in the face of obstacles, and tend to view their failings as due to lack of effort or poor use of strategy rather than to lack of ability.

**mastery play** play that leads to mastering new skills, such as language and intellectual abilities.

**mastery tests** assessments used to determine acquisi-

tion of the full scope of knowledge in a particular subject area or to evaluate ongoing progress and comprehension.

**mastery training** experimental or real-world training that prepares individuals for aversive situations or conflict by teaching them methods of assertion and constructive control over environmental conditions.

**mastoid** *n.* a projection from the anterior part of the temporal bone containing air spaces that communicate with the cavity of the middle ear.

**masturbation** *n.* manipulation of one's own genital organs, typically the penis or clitoris, for purposes of sexual gratification. The act is usually accompanied by sexual fantasies or erotic literature, pictures, or videos. Masturbation may also include the use of mechanical devices (e.g., a VIBRATOR) or self-stimulation of other organs, such as the anus or nipples. —**masturbate** *vb.*

**masturbatory reconditioning** see ORGASMIC RECONDITIONING.

**masturbatory satiation** a behavioral treatment aimed at altering the deviant sexual preferences of individuals who commit SEX OFFENSES, including rape, pedophilia, and child molestation. The technique has been inappropriately applied to alter homosexual behavior as well. In one version of masturbatory satiation, participants masturbate for prolonged periods of time—continuing even after orgasm—so that the act eventually becomes unsatisfying. In another version, known as **verbal satiation**, participants voice their deviant sexual fantasies while masturbating past orgasm, continuing until the deviant sexual imagery is no longer arousing. In a third version, participants masturbate to orgasm using appropriate sexual fantasies and afterward continue masturbating to their deviant sexual fantasies in order to pair the pleasurable experience of orgasm with appropriate stimuli and the deviant behavior with excessive, unsatisfying masturbation. All three forms of masturbatory satiation lack a sound empirical basis for effectiveness.

**MAT** abbreviation for MILLER ANALOGIES TEST.

**mata elap** see AMOK.

**matched-pairs design** a study involving two groups of participants in which each member of one group is paired with a similar person in the other group, that is, someone who matches them on one or more variables that are not the main focus of the study but nonetheless could influence its outcome. For example, a researcher evaluating the effectiveness of a new drug in treating Alzheimer's disease might identify pairs of individuals of the same age and intelligence and then randomly assign one person from each pair to the treatment condition that will receive the drug and the other to the control condition that will not. A **matched-groups design** (**matched-samples design**; **matched-subjects design**) is a similar approach but broader in that it allows for the inclusion of more than two groups of participants.

**matched-pairs *t* test** a statistical procedure used to test for significant differences between the two sets of data obtained from a MATCHED-PAIRS DESIGN. For example, a researcher could use a matched-pairs *t* test to assess whether relationship satisfaction significantly differs between two sets of individuals who have been matched for age and gender, where one set has been married for 5 years and the other for 10 years. Also called **paired-samples *t* test**.

**matched samples** two or more sets of study partici-

pants that are equivalent to one another with respect to certain relevant variables.

**matching** *n.* a procedure for ensuring that participants in different study conditions are comparable at the beginning of the research on one or more key variables that have the potential to influence results. After multiple sets of matched individuals are created, one member of each set is assigned at random to the EXPERIMENTAL GROUP and the other to the CONTROL GROUP. For example, a researcher could create two groups whose members are of the same sex and have the same family history of a disease; one group would be given a treatment whereas the other would not. Such an approach would enable the researcher to rule out sex and family history as potential explanations of the study outcome, thereby allowing greater validity to attributing any changes between the groups to the treatment. See also MATCHED-PAIRS DESIGN.

**Matching Familiar Figures Test (MFF)** a visual test in which the participant is asked to identify from among a group of six similar figures the one that matches a given sample. Items are scored for response time to first selection, number of correct first-choice selections, and number of errors. The test is used to measure CONCEPTUAL TEMPO, that is, the relative speed with which an individual makes decisions on complex tasks (see REFLECTION-IMPULSIVITY). [originally published in 1965 by Jerome KAGAN]

**matching hypothesis** the proposition that people tend to form relationships with individuals who have a similar level of social value, often with an emphasis on equality in physical attractiveness. Research indicates that this similarity tends to be greater for couples having a romantic relationship than for friends.

**matching law** in OPERANT CONDITIONING, a law that describes the distribution of responses when numerous task options are available. It states that the proportion of responses allocated to an alternative will match the proportion of reinforcement obtained from that alternative. For example, if a pigeon receives two thirds of its food allocation from Alternative A and one third from Alternative B, it will make two thirds of its responses (and give two thirds of its time) to Alternative A. If the pigeon makes fewer than two thirds of its responses to Alternative A—that is, has less sensitivity to reinforcement than the law predicts—then **undermatching** has occurred. If, however, the pigeon makes more than two thirds—that is, has greater sensitivity to reinforcement than the law predicts—then **overmatching** has occurred. See also GENERALIZED MATCHING LAW.

**matching patients** the process of prescribing specific interventions or choosing specific therapists for particular patients or diagnostic groups of patients to improve adherence with or effectiveness of treatment. The process is based on the diagnoses, needs, problems, and characteristics of particular patients; on therapist variables, such as race, ethnicity, and experience levels; and on setting variables, such as inpatient or outpatient clinics. Also called **psychotherapy matching**.

**matching to sample** a CONDITIONAL-DISCRIMINATION procedure that involves both SUCCESSIVE DISCRIMINATION and SIMULTANEOUS DISCRIMINATION. Each trial begins with presentation of a sample stimulus. Once the organism responds to that sample, two or more additional stimuli appear, only one of which matches the sample. Reinforcement is contingent on responding to the stimulus that

matches. See also **ARBITRARY MATCHING TO SAMPLE**; **DELAYED MATCHING TO SAMPLE**; **ODDITY FROM SAMPLE**.

**mate guarding** a method of preventing a mate from reproducing with others. In nonhuman animals, a male stays close to its mate immediately after copulation and prevents other males from approaching or mating with the female until such time as additional mating will not result in fertilization. In some cases, a **copulatory lock** literally keeps mates connected for several minutes or hours. See also **MATE POACHING**; **SPERM COMPETITION**.

**mate poaching** behavior that is intended to sexually attract someone who is involved in a committed romantic relationship with another partner. In evolutionary theorizing, mate poaching is one of several evolved adaptations, or strategies, for increasing or improving one's reproductive opportunities. Partners in committed romantic relationships often engage in **MATE GUARDING** to thwart the possibility of mate poaching. Research shows that mate-poaching attempts are commonplace in most cultures in the world. Among nonhuman animals, **SNEAK MATING** is a somewhat similar behavior in some males.

**material cause** see **CAUSE**.

**material feminism** a movement in 19th-century and early 20th-century **FEMINISM** that concentrated on improving the material conditions of women's lives. Campaigners in this tradition sought to end women's legal, educational, and employment disabilities and to ease the burden of their domestic duties.

**materialism** *n.* **1.** the philosophical position that everything, including mental events, is composed of physical matter and is thus subject to the laws of physics. From this perspective, the mind is considered to exist solely as a set of brain processes (see **MIND-BODY PROBLEM**). Such philosophies can be traced back to ancient times but gained a new impetus from advances in the physical sciences beginning in the 17th century. A particular form of materialism is the **DIALECTICAL MATERIALISM** of classical **MARXISM**. **2.** the position that the causes of behavior are to be found in the material of the body, particularly the nervous system. It is nearly always associated with **HARD DETERMINISM**. See also **IDENTITY THEORY**; **PHYSICALISM**. Compare **IDEALISM**; **IMMATERIALISM**. **3.** a value system that emphasizes the pursuit and acquisition of material goods and luxuries, typically perceived by the individual as a measure of personal worth and achievement, often at the expense of moral, psychological, and social considerations. —**materialist** *adj.*, *n.* —**materialistic** *adj.*

**materialization** *n.* in **SPIRITUALISM**, the alleged production of a spirit in bodily form during a seance or of some other physical object by apparently supernatural means (see **APPORT**). See also **ECTOPLASM**. —**materialize** *vb.*

**material self** see **EMPIRICAL SELF**.

**maternal aggression** a form of aggression in nonhuman animals in which females defend their offspring against potential threats from intruders by means of **THREAT DISPLAYS** or **ATTACK BEHAVIOR**.

**maternal attitudes** attitudes of the mother toward her children, particularly those attitudes that play an important role in her children's health, character formation, emotional adjustment, and self-image, as well as in her own self-perception as a mother.

**maternal behavior** the actions of females associated with caring for their young. These can range from feeding

or **NURSING** to protection, thermoregulation, and teaching skills to the young. Its exact expression, however, depends on a number of factors, including the developmental status of the young at birth, levels of various hormones (e.g., **ESTROGEN**, **OXYTOCIN**, **PROGESTERONE**, **PROLACTIN**), and environmental influences. The analogous male behavior is known as **PATERNAL BEHAVIOR**. See also **PARENTAL BEHAVIOR**.

**maternal brain** in the mammalian female nervous system, the expression of inherent neuroplasticity that is associated with and necessary for reproduction and in which multilevel changes to neurons and neuronal activity occur that enhance a mother's cognition and behavior toward her young during the pre- and postnatal period.

**maternal deprivation** lack of adequate nurturing for a young animal or child due to the absence or premature loss of, or neglect by, its mother or primary caregiver, postulated to affect an individual's early behavioral, physical, social, and emotional development negatively. See also **FAILURE TO THRIVE**; **MARASMUS**.

**maternal drive** the motivation of female animals to care for offspring.

**maternal environment** conditions in the uterus of a pregnant woman that affect fetal development and are hypothesized to have long-term postnatal effects on the health of the child. See **FETAL PROGRAMMING**.

**maternal memory** the long-term retention of memory for maternal behavior. Once a female animal has experienced a pregnancy and interaction with her offspring, she retains the memory of the requisite behaviors for their care. For example, a female rat that has already had pups will be quicker to display maternal behavior when placed with foster pups than will a female rat that has not experienced pregnancy and pup-rearing. See also **MATERNAL BRAIN**.

**maternal PKU** a condition in women who have **PHENYLKETONURIA** (PKU) and become pregnant. Expectant mothers with high levels of blood phenylalanine—**HYPER-PHENYLALANINEMIA**—are at risk of giving birth to offspring with high rates of congenital heart defects, intrauterine growth retardation, intellectual disability, and microcephaly (a small head). Treatment entails dietary management for the expectant mother before and during pregnancy to reduce blood levels of phenylalanine.

**maternal reverie** a mother's capacity to understand what her infant is feeling and to ameliorate the infant's anxiety and distress. See also **ATTUNEMENT**; **PRIMARY MATERNAL PREOCCUPATION**. [first described in 1962 by British psychoanalyst Wilfred Bion (1897–1979)]

**maternity blues** see **BABY BLUES**.

**mate selection** the choice of an appropriate partner for reproduction. In species where female **PARENTAL INVESTMENT** is high, females are thought to be more careful in their choice of mates than males. However, in species where parental contribution to survival of offspring is more nearly equal, mate selection is shown by both sexes. Mate selection may be based on (a) behavioral traits, such as the ability to defend a territory or to be dominant over others; (b) exaggerated signals of quality, such as bright tail plumage in the peacock; or (c) evaluations made during **COURTSHIP**. In species where females are smaller than males, females may mate with several males, either selectively keeping the sperm of only one or two or mating with



the most dominant male at the time closest to possible conception (see CRYPTIC FEMALE CHOICE; SEXUAL AGGRESSION). See also SEXUAL SELECTION. Compare RANDOM MATING.

**mate swapping** see PARTNER SWAPPING.

**mate value** an overall assessment of a person's desirability as a romantic or reproductive partner. Many factors contribute to a person's mate value, such as youthfulness, physical attractiveness, status, and wealth. The higher a person's mate value, the more selective he or she can be when choosing a partner. The concept of mate value was proposed by evolutionary theorists on the basis of ethological research with nonhuman animals, although it is now used by researchers with diverse approaches. Research has demonstrated that people generally form committed relationships with others who have roughly similar levels of mate value.

**mathematical ability** the ability used to solve various kinds of quantitative problems, such as mathematical word problems, computational problems, and number-concept problems. It comprises a number of distinct skills.

**mathematical biology** a branch of biology that deals with the development of mathematical models of biological phenomena, such as conditioning and nerve conduction.

**mathematical learning theory** any of a variety of theories that use quantitative terms to characterize the learning of individuals or groups or the results of learning trials. An important example is the STIMULUS SAMPLING THEORY.

**mathematical model** the representation of a psychological or physiological function, or other process, in mathematical terms, such as formulas or equations (e.g., FECHNER'S LAW).

**mathematical psychology** an approach to psychological phenomena that uses mathematical techniques to model the underlying processes and to predict the outcomes of these processes. Closely related to PSYCHOMETRICS and STATISTICS, it is used across several major subdisciplines, especially cognitive psychology, psychophysics, and perception.

**mathematical statistics** see THEORETICAL STATISTICS.

**mathematico-deductive method** **1.** the use of postulates and corollaries in mathematical form to develop a system or theory. **2.** see HYPOTHETICO-DEDUCTIVE METHOD.

**mathematics anxiety** apprehensiveness and tension associated with the performance of arithmetic and other mathematical tasks. Often thought to be related to TEST ANXIETY, mathematics anxiety has been proposed as an important factor undermining the development of mathematical skills: It frequently causes distress, disrupts the use of working memory for maintaining task focus, negatively affects achievement scores, and potentially results in dislike and avoidance of all math-related tasks. It is seen in students of all ages, regardless of their actual math abilities, and is considered more prevalent in females than males. A number of factors are related to the phenomenon, including low SELF-ESTEEM and SELF-EFFICACY, lack of confidence, TRAIT ANXIETY, perfectionism, and previous negative experiences with the subject material. Teacher-based instruction that encourages students as they work through a math problem, teaches them effective skills in solving such problems, and demonstrates positive attitudes toward mathematics can reduce this type of anxiety. COOPERATIVE

LEARNING, COMPUTER-ASSISTED INSTRUCTION, and the use of mathematical games to make the learning process more relaxed are also effective.

**mathematics disorder** in DSM-IV-TR, a LEARNING DISORDER in which mathematical ability is substantially below what is expected given the person's chronological age, education, and measured intelligence. It may involve (among other problems) difficulties in counting, learning multiplication tables, understanding mathematical problems and performing mathematical operations, reading numerical symbols, and copying numbers. In DSM-5, the disorder has been subsumed within a category labeled **specific learning disorder** and is no longer considered a distinct entity.

**mating behavior** the activities that are involved in reproduction, including COURTSHIP, MATE SELECTION, and COPULATION. Mating behavior varies with the species and may have several functions in addition to successful conception: preparing both mates physiologically, providing cues for mate selection, and coordinating behavior of mates for NEST BUILDING and subsequent care of young.

**mating system** the organization of typical mating patterns within a species. Mating systems include MONOGAMY, in which two individuals mate exclusively with each other; POLYGYNY, in which a male mates with multiple females; POLYANDRY, in which a female mates with multiple males; and POLYGYNANDRY, in which both sexes mate with multiple partners.

**matriarchy** *n.* **1.** a society in which descent and inheritance is **matrilineal**, that is, traced through the female only. See UNILATERAL DESCENT. **2.** more loosely, a family, group, or society in which women are dominant. Compare PATRIARCHY. —**matriarchal** *adj.*

**matricide** *n.* **1.** the killing of one's own mother. **2.** a person who kills his or her own mother. Compare PATRICIDE. —**matricidal** *adj.*

**matrifocal** *adj.* describing a family centered on the mother or a culture in which the role of the mother is central.

**matrilineal** *adj.* see MATRIARCHY.

**matrilocal** *adj.* denoting a living arrangement in which a married couple resides with or in proximity to the wife's mother or relatives, or a culture in which this is the norm. Also called **uxorilocal**. Compare NEOLOCAL; PATRILOCAL.

**matrix** *n.* **1.** a context or environment within which something else is enclosed, embedded, originates, or develops. **2.** a rectangular ordered arrangement (ARRAY) of numbers in rows and columns. Individual items in a matrix are called ELEMENTS or entries. Many different types of matrices are used in statistics, such as the CORRELATION MATRIX and the COVARIANCE MATRIX.

**matrix algebra** a set of mathematical rules for analyzing large numbers of variables arranged in matrices. Matrix algebra procedures may involve basic calculations, such as adding and subtracting matrices, and also more complex processes, such as multiplying and dividing matrices.

**matrix organization** a complex type of organizational structure in which employees are grouped not only by the function they perform (e.g., marketing, production, research and development, engineering) but also by the product or project on which they are working. Employees

working within a matrix organization report to both a functional boss and a product or project boss. Compare UNITY OF COMMAND.

**Matthew effect** **1.** a phenomenon in the sociology of science whereby established researchers receive more credit for a discovery than less well known researchers who may have made an equal or greater contribution. [first described by U.S. sociologist Robert K. Merton (1910–2003) and named for a verse in the Gospel according to St. Matthew: “For to everyone who has will be given, and he will have abundance, but from him who doesn’t have, even that which he has will be taken away” (25:29)] **2.** in child development, the tendency for the difference between high and low performers (e.g., good and poor readers) to increase over time. Also called **accumulated advantage**. [described by Canadian psychologist Keith E. Stanovich]

**maturation** **n.** **1.** the biological processes involved in an organism’s becoming functional or fully developed. **2.** naturally occurring time-related changes in a participant (e.g., growth, aging, fatigue, boredom, attention shifts) that pose a threat to the INTERNAL VALIDITY of a study, particularly a longitudinal one. These processes—as opposed to the specific treatment or intervention—may explain any changes in participants during the experiment. For example, a researcher may study substance use in a set of individuals from early adolescence to late adulthood. In the study, substance use may naturally decline as a function of the development of the participants rather than because of the influence of an experimental intervention. Thus, the investigator would want to assess and possibly control for this **maturation effect** in order to maintain the internal validity of the study.

**maturation crisis** a life-changing event, such as marriage or retirement, that often is encountered during the typical course of development and that requires significant psychological, behavioral, or other adjustments. Also called **developmental crisis**; **normative crisis**.

**maturation lag** slowness or delay in some aspects of neurological development that may affect cognition, perception, and behavior.

**maturation hypothesis** a generalization that some behaviors and processes, such as language acquisition, are innate but do not appear until appropriate organs and neural systems have matured.

**maturity** **n.** a state of completed growth or development, as in adulthood. See DEVELOPMENTAL LEVELS.

**Maximally Discriminative Facial Movement Coding System (MAX)** a system for coding facial configurations theorized to correspond to universally recognized facial expressions of emotion. For example, lowered, knitted eyebrows would be coded to correspond to anger. MAX is primarily used in research on emotional expressions in infants and young children. Compare FACIAL ACTION CODING SYSTEM. [developed in 1979 by Carroll E. IZARD]

**maximin strategy** in GAME THEORY or decision making, a tactic in which an individual chooses the best of a set of worst possible outcomes or payoffs. For example, participants in a study may need to choose whichever outcome would best maximize a minimum advantage: withdrawing from a scenario in which they are currently performing poorly, or continuing and possibly doing even worse. Compare MINIMAX STRATEGY.

**maximizer** **n.** a type of consumer who wishes to make the very best decision. For example, a maximizer on a shopping trip in a grocery store is likely to carefully examine every single cereal before buying one. Generally, maximizers are considered more susceptible than the converse SATISFICERS to all forms of regret leading to buyer’s remorse. [coined in 2002 by U.S. psychologist Barry Schwartz (1946– )]

**maximum likelihood** a statistical technique in which the set of possible values for the PARAMETERS of a distribution is estimated based on the most probable sample of observations that one might have obtained from that population. The values derived from this procedure are referred to as **maximum likelihood parameter estimates** or **maximum likelihood estimates** and can be used to obtain an overall estimate of how well a given model fits the data. Maximum likelihood techniques are used in several statistical methods, such as LOGISTIC REGRESSION, HIERARCHICAL LINEAR MODELING, and STRUCTURAL EQUATION MODELING. Also called **maximum likelihood estimation (MLE)**.

**maximum-security unit** a section of a mental institution reserved for patients who are likely to harm themselves or others.

**Maxwell disks** a series of slotted color disks on a rotating spindle, used as a COLOR MIXER. [James Clerk Maxwell (1831–1879), British physicist]

**Maxwellian view** an optical arrangement that causes a visual stimulus to be confined to the center of the pupil. The alternative, a **Newtonian view**, allows light to pass through all parts of the pupil. [James Clerk Maxwell]

**maze** **n.** a system of intersecting paths and blind alleys that must be navigated from an entrance to an exit. Various types of mazes are used in experiments with both human and nonhuman animals. They are often used, for example, in studies of animal cognition that investigate spatial learning and memory (see MORRIS WATER MAZE; RADIAL MAZE), organization of cognitive maps, and the foraging strategies of predators searching for prey. A common human maze is a printed paper pattern on which the participant traces the correct pathway with a pencil; an example is the PORTEUS MAZE TEST, which tests planning and problem-solving ability. See also ALLEY MAZE; ELEVATED MAZE; T MAZE; Y MAZE.

**maze-bright and maze-dull rats** two groups of rats that were separated based on their performance in a standardized maze problem. Those that performed best were bred with each other, as were those that performed most poorly. Over relatively few generations, there was a complete separation in performance, with none of the maze-bright rats overlapping in scores with maze-dull rats. However, the selective breeding appeared to be specific to the maze tests that were used and did not affect learning ability more generally; moreover, maze-dull rats reared in an enriched environment (see ENRICHMENT) could perform as well as maze-bright rats.

**maze learning** learning to reach the goal object or objects in a maze by starting from a designated point and following various paths, some of which do not lead to the goal. The maze-learning process usually involves multiple trials and is regarded as successful when the participant can reach the goal in the most direct way with minimal errors.

**maze task** a measure of visual planning in which partic-

ipants must trace a route through a series of progressively more complex mazes without entering blind alleys. An example of this type of test is the PORTEUS MAZE TEST.

**MBD** abbreviation for MINIMAL BRAIN DYSFUNCTION.

**MBE** abbreviation for mind–brain–education. See NEUROEDUCATION.

**MBHO** abbreviation for MANAGED BEHAVIORAL HEALTH ORGANIZATION.

**MBI** abbreviation for MASLACH BURNOUT INVENTORY.

**MBO** abbreviation for MANAGEMENT BY OBJECTIVES.

**MBT** abbreviation for mentalization-based treatment. See MENTALIZATION.

**MBTI** abbreviation for MYERS–BRIGGS TYPE INDICATOR.

**MCA** abbreviation for multiple classification analysis. See MULTIPLE DISCRIMINANT ANALYSIS.

**M-Cat** *n.* see MEPHEDRONE.

**McCarthy Scales of Children's Abilities** a comprehensive instrument used to measure the cognitive and motor abilities of children between 2½ and 8½ years of age, comprising 18 subtests on 6 overlapping scales: Verbal, Perceptual-Performance, Quantitative, General Cognitive, Memory, and Motor. [developed in 1972 by Dorothea McCarthy (1906–1974), U.S. developmental psychologist]

**McCarthy Screening Test (MST)** an assessment that predicts the ability of a child to cope with schoolwork at an early age. It comprises six subtests (verbal memory, right–left orientation, leg coordination, draw-a-design, numeric memory, and conceptual grouping) designed to measure the cognitive and sensorimotor functions needed to successfully perform school tasks. Poor performance on this assessment may indicate the need for further evaluation and the possible presence of a learning disability. [originally developed in 1978 by Dorothea McCarthy]

**McCullough effect** see CONTINGENT AFTEREFFECT. [Celeste McCullough (1926– ), U.S. psychologist]

**MCE** abbreviation for MEDICAL CARE EVALUATION.

**M-cell** *n.* any of various large neurons in the two most ventral layers of the LATERAL GENICULATE NUCLEUS. M-cells are the origin of the MAGNOCELLULAR SYSTEM. The large RETINAL GANGLION CELLS that provide input to the M-cells of the lateral geniculate nucleus are called **M-ganglion cells**. See also P-CELL.

**MC4-R** abbreviation for MELANOCORTIN-4 RECEPTOR.

**MCI** abbreviation for MILD COGNITIVE IMPAIRMENT.

**MCL** abbreviation for MOST COMFORTABLE LOUDNESS.

**MCM** abbreviation for METACOGNITIVE MODEL OF ATTITUDES.

**MCMI** abbreviation for MILLON CLINICAL MULTIAXIAL INVENTORY.

**McNaughton rule (McNaghten rule; McNaughten rule)** see M'NAGHTEN RULE.

**MCO** abbreviation for managed care organization. See MANAGED CARE.

**MCS** abbreviation for MINIMALLY CONSCIOUS STATE.

**M–C SDS** abbreviation for MARLOWE–CROWNE SOCIAL DESIRABILITY SCALE.

**MD** abbreviation for MUSCULAR DYSTROPHY.

**MDA** *n.* **1.** 3,4-methylenedioxamphetamine: a synthetic HALLUCINOGEN of the phenylisopropylamine family (see PHENYLETHYLAMINE). Because at low doses it acts as a CNS STIMULANT and euphoriant, MDA was once proposed as an aid to psychotherapy, but this use has not been supported. It is thought that MDA's psychostimulant properties occur through enhanced neurotransmission of norepinephrine and its hallucinogenic action through augmentation of serotonin transmission. MDA is a metabolite of MDMA and may be responsible for much of MDMA's action; there is some concern that these drugs and other synthetic amphetamine derivatives cause neuronal degeneration. **2.** abbreviation for MULTIPLE DISCRIMINANT ANALYSIS.

**MDMA** *n.* 3,4-methylenedioxymethamphetamine: a substituted PHENYLETHYLAMINE that, like its analog MDA, is a catecholamine-like HALLUCINOGEN with amphetamine-like stimulant properties that may produce visual disturbances and hallucinations at high doses. It is among the most commonly used illicit drugs, generally sold under the name **Ecstasy**. Taken orally, onset of effects is rapid; the high lasts several hours, and residual effects can be experienced for several days. Intoxication is characterized by euphoria, feelings of closeness and spirituality, and diverse symptoms of autonomic arousal. Widespread illicit use of MDMA as a CLUB DRUG has caused increasing concern as nerve damage and serotonin dysfunction have been established as resulting from prolonged use. Persistent memory dysfunction and impaired decision making and self-control as well as depressed mood have been well documented. When used during periods of intense activity (as often occurs during rave parties), it may be toxic or fatal. It may, however, have some beneficial clinical use and is being studied as a possible treatment for posttraumatic stress disorder.

**MDS** abbreviation for MULTIDIMENSIONAL SCALING.

**me** *pron.* the objective pronoun referring to the self. In William JAMES's psychology, the “me” is the EMPIRICAL SELF.

**mean** *n.* the numerical average of a set of scores, computed as the sum of all scores divided by the number of scores. For example, suppose a health researcher sampled five individuals and found their numbers of hours of exercise per week to be 3, 1, 5, 4, and 7, respectively. The mean number of exercise hours per week thus would be  $(3 + 1 + 5 + 4 + 7)/5 = 20/5 = 4$ . The mean is the most widely used statistic for describing CENTRAL TENDENCY. Also called **arithmetic mean; arithmetic average**. See also GEOMETRIC MEAN; HARMONIC MEAN.

**mean deviation** for a set of numbers, a measure of dispersion or spread equal to the average of the differences between each number and the mean value. It is given by  $(\sum |x_i - \mu|)/n$ , where  $\mu$  is the mean value and  $n$  the number of values.

**mean difference** a measure of variability in a data set calculated as the average of the distances between each score and each of the other scores, disregarding whether the deviation is positive or negative. For example, consider the following three scores: 1, 3, and 9. The mean difference would be calculated as  $(|1-3| + |1-9| + |3-1| + |3-9| + |9-1| + |9-3|)/6 = (2 + 8 + 2 + 6 + 8 + 6)/6 = 32/6 = 5.33$ .

**mean effect size** in a META-ANALYSIS, a measure of the average EFFECT SIZE across multiple studies. For example, an investigator analyzing several studies assessing a new

treatment may determine a mean effect size by calculating the average standardized difference between treatment and control groups over all of the studies. Calculations of mean effect size often take variance and RELIABILITY into account by assigning different WEIGHTS to the values derived from different studies. A study with a large sample, for instance, or one that uses more precise measurement techniques may be weighted to have a greater impact in determining the mean effect size.

**mean-gradation method** see METHOD OF EQUAL-APPEARING INTERVALS.

**meaning** *n.* the cognitive or emotional significance of a word or sequence of words, or of a concept, sign, or symbolic act. This may include a range of implied or associated ideas (connotative meaning) as well as a literal significance (denotative meaning). The study of meaning in language is SEMANTICS, and that of meaning in symbolic systems generally is SEMIOTICS. —**mean** *vb.* —**meaningful** *adj.*

**meaning-centered therapy** see LOGOTHERAPY.

**meaningful learning** learning new material or information by relating it to the learner's experience or existing knowledge base, as contrasted with the ROTE LEARNING of material that has less relevance. See also READINESS.

**meaninglessness** *n.* a pervasive sense of the absence of significance, direction, or purpose. A sense of meaninglessness regarding one's life or life in general is sometimes a focal issue in psychotherapy. The perception of meaninglessness poses the central problem that the existential approach attempts to solve or accommodate. See also EXISTENTIAL PSYCHOTHERAPY; LOGOTHERAPY; WILL TO MEANING.

**mean length of utterance (MLU)** a measure of language development in young children based on the average length of UTTERANCES in their spontaneous speech. It is usually calculated by counting MORPHEMES rather than words and is based on at least 100 successive utterances. [introduced in 1973 by Roger BROWN to characterize the different stages of early language development]

**means–ends analysis** **1.** in ARTIFICIAL INTELLIGENCE, a technique to solve problems that sets up subgoals as means to achieve the goals (ends) and compares subgoals and goals using a recursive goal-reduction search procedure. See GENERAL PROBLEM SOLVER. **2.** more generally, any problem-solving strategy that assesses the difference between the current state and a desired end state and attempts to discover means to reduce that difference. Such a strategy would not discard means to the end that appear to be “blocked,” but it would consider possible ways to overcome any such intermediate problem.

**means object** in PURPOSIVE BEHAVIORISM, any object, response, event, or condition that contributes to an organism's progress toward a GOAL. Also called **means situation**.

**mean square** (symbol: *MS*) an estimator of variance calculated as a SUM OF SQUARES divided by its DEGREES OF FREEDOM. It is used primarily in the ANALYSIS OF VARIANCE, in which an *F* RATIO is obtained by dividing the mean square between groups by the mean square within groups. The mean square also is used to determine the accuracy of REGRESSION ANALYSIS models, indicating the amount of variance explained by a model ( $MS_{\text{regression}}$ ) compared to the amount of error or unexplained variance ( $MS_{\text{residual}}$ ).

**mean square error** (symbol: *MSE*) the average

amount of ERROR VARIANCE within a data set, given as the typical squared distance of a score from the mean score for the set. Mean square error may be calculated in both ANALYSIS OF VARIANCE and REGRESSION ANALYSIS. In the former it is referred to more specifically as the **within-groups mean square** and used as the denominator when calculating an *F* RATIO; in the latter it is known as a **residual mean square** (or **mean square residual**) and gives the mean difference between actual scores and those predicted by a regression model. A large mean square error indicates that scores are not homogeneous within groups or are not consistent with prediction, such that there is more “noise” than “signal.” For example, a large mean square error in gender research would show no significant differences between groups of males and groups of females.

**mean square residual** (symbol: *MSR*) see MEAN SQUARE ERROR.

**measure** *n.* an item or set of items that provides an indication of the quantity or nature of the phenomenon under study. It is sometimes necessary in research to have more than one measure for each of the main variables of interest.

**measurement** *n.* the act of appraising the extent of some amount, dimension, or criterion—or the resultant descriptive or quantified appraisal itself. A measurement is often, but not always, expressed as a numerical value.

**measurement error** in CLASSICAL TEST THEORY, any difference between an observed score and the TRUE SCORE. Measurement error may arise from flaws in the assessment instrument, mistakes in using the instrument, or random or chance factors. For example, an investigator may obtain biased results from a survey because of problems with question wording or response options, question order, variability in administration, and so forth.

**measurement invariance** the situation in which a scale or construct provides the same results across several different samples or populations. For example, an intelligence test could be said to have measurement invariance if it yields similar results for individuals of varying gender, ethnicity, or age. Measurement invariance may apply to a single relevant characteristic (e.g., gender only), several characteristics (e.g., gender and ethnicity), or all possible characteristics and situations. Compare SELECTION INVARIANCE.

**measurement level** the degree of specificity, accuracy, and precision in a particular set of observations or scores, as reflected in the MEASUREMENT SCALE used.

**measurement model** in STRUCTURAL EQUATION MODELING, a model that quantifies the association between observations obtained during research (indicators) and theoretical underlying constructs or factors. When carrying out a CONFIRMATORY FACTOR ANALYSIS, for example, one assesses a hypothesized measurement model that specifies the relationships between observed indicators and the LATENT VARIABLES that support or affect them.

**measurement scale** any of four common methods for quantifying attributes of variables during the course of research, listed in order of increasing power and complexity: NOMINAL SCALE, ORDINAL SCALE, INTERVAL SCALE, and RATIO SCALE. More specifically, nominal scales consist of named categories with no numerical meaning (e.g., gender, birthplace), ordinal scales comprise rankings from highest to lowest or vice versa (e.g., birth order, contest winners), interval scales provide equal distance between numerical val-

ues but have an arbitrary zero point (e.g., degrees Fahrenheit, checkbook balance), and ratio scales provide equal distance between numerical values with an exact zero point (e.g., height, weight).

**measurement theory** a field of study that examines the attribution of values to traits, characteristics, or constructs. Measurement theory focuses on assessing the TRUE SCORE of an attribute, such that an obtained value has a close correspondence with the actual quantity, with high RELIABILITY and little MEASUREMENT ERROR. See also CLASSICAL TEST THEORY.

**measure of association** any of various indices of the degree to which two or more variables are related. One of the most common measures of association is the CORRELATION COEFFICIENT.

**measures of intelligence** a series of norm-referenced tests used to determine an individual's ability to learn, reason, understand concepts, and acquire knowledge. See EEG MEASURES OF INTELLIGENCE; ERP MEASURES OF INTELLIGENCE; FMRI MEASURES OF INTELLIGENCE. See also ASSESSMENT OF INTELLIGENCE.

**mecamylamine** *n.* a GANGLIONIC BLOCKING AGENT formerly widely used in the treatment of hypertension. Because of the severity of its side effects, which include tremor, sedation, and movement disorders, this use is now rare. However, because mecamylamine has preferential antagonistic action at NICOTINIC RECEPTORS, it has been investigated as a possible antismoking agent. It has also been used in the treatment of Tourette's disorder and is being studied as an augmenting agent to SSRIs for the treatment of depression. U.S. trade name: **Inversine**.

**mechanical aptitude** an ability to comprehend and deal with machines or mechanisms and the principles underlying their construction and function.

**mechanical-aptitude test** any of various tests designed to measure abilities related to mechanical work, such as mechanical knowledge, spatial relations, perceptual skills, understanding of mechanical principles, mechanical assembly, and manual dexterity.

**mechanical causality** a construct that explains the causes of things and events, including behaviors, in terms of the causal relations among the parts of a machine. Such an explanation will nearly always be one of LINEAR CAUSATION. Mechanical causality is a type of HARD DETERMINISM. See MECHANISTIC THEORY.

**mechanical-comprehension test** **1.** an assessment that measures an individual's aptitude to learn mechanical skills. It requires a grasp of the principles underlying the operation and repair of complex devices. **2.** an assessment used to determine understanding of concepts relating to machinery or tools.

**mechanical intelligence** the ability to understand and manage concrete objects.

**mechanical-man concept** the idea that human beings can be understood as living machines subject only to physical processes and not subject to nonphysical phenomena, such as consciousness. This is often cited as a model for the image of human beings proposed by BEHAVIORISM and similar deterministic and naturalistic theories. See also MECHANICAL CAUSALITY; MECHANISTIC THEORY.

**mechanism** *n.* **1.** in general, a device or physical property by which something is accomplished, or an explana-

tion that relies on such a device or property. **2.** a philosophical position, similar to that of MATERIALISM, that provides explanations in terms of underlying physical properties. See MECHANICAL CAUSALITY; MECHANISTIC THEORY. **3.** the concept of the human being as a machine. See MECHANICAL-MAN CONCEPT. [credited to Julien Offray de LA METTRIE] **4.** in psychodynamics, see MENTAL MECHANISM.

**mechanistic interactionism** a theory that considers both individual (dispositional) and situational variables in the determination of behavior. The relative weight assigned to dispositional and situational factors may be affected by certain moderating variables, including the nature of a situation: A highly structured situation may influence behavior more than will dispositional factors, and a highly ambiguous situation may allow dispositional factors to play a larger role in determining behavior.

**mechanistic theory** the assumption that psychological processes and behaviors ultimately can be understood in the same way that mechanical or physiological processes are understood. Its explanations of human behavior are based on the model or metaphor of a machine and invoke MECHANICAL CAUSALITY, reducing complex psychological phenomena to simpler physical phenomena. Also called **mechanistic approach**. See REDUCTIONISM.

**mechanoreceptor** *n.* a receptor that is sensitive to mechanical forms of stimuli. Examples of mechanoreceptors are the receptors in the ear that translate sound waves into nerve impulses, the touch receptors in the skin, and the receptors in the joints and muscles (see PROPRIOCEPTOR).

**Meckel's syndrome** a congenital disorder marked by MICROCEPHALY; eye, ear, and olfactory abnormalities; and varying degrees of brain-tissue anomalies. Some affected children show premature closure of skull sutures. The patients either are stillborn or die in early infancy. [Johann Friedrich **Meckel** (1781–1833), German anatomist]

**Medea complex** a mother's wish to kill her children as a means of revenge against the father. The term is derived from Greek mythology, in which Medea killed her children fathered by Jason after he deserted her for a younger woman. See also FILICIDE.

**medial** *adj.* toward or at the middle of the body or of an organ. Compare LATERAL. —**medially** *adv.*

**medial amygdala** a portion of the AMYGDALA that receives olfactory and pheromonal information and participates in fear responses.

**medial bundle** a group of sensory fibers located in the middle portion of a body structure. For example, there is a medial bundle in the knee.

**medial forebrain bundle** a collection of nerve fibers passing through the midline of the forebrain to the hypothalamus. It includes tracts originating in the LOCUS CERULEUS, SUBSTANTIA NIGRA, and VENTRAL TEGMENTAL AREA and provides the chief pathway for reciprocal connections between the hypothalamus and the BIOGENIC AMINE systems of the brainstem.

**medial geniculate nucleus** either of a pair of nuclei in the THALAMUS, toward the middle of the LATERAL GENICULATE NUCLEUS, that receive, process, and relay auditory information. Each nucleus receives input from the INFERIOR COLLICULUS and sends output to the AUDITORY CORTEX. Also called **medial geniculate body**.

**medial lemniscus** either of a pair of somatosensory

tracts in the midbrain carrying fibers from the spinal cord that communicate with the thalamus. They form part of the LEMNISCAL SYSTEM.

**medial prefrontal cortex** the midline region of the PREFRONTAL CORTEX, roughly the frontal third of the two inner walls of the cortical hemispheres. This region plays a prominent role in executive functions, conflict resolution, and mood regulation.

**medial preoptic area (mPOA)** a region of the anterior hypothalamus implicated in the regulation of many behaviors, including thermoregulation, sexual behavior, parenting behavior, and gonadotropin secretion (see SEXUALLY DIMORPHIC NUCLEUS).

**medial rectus** an extrinsic EYE MUSCLE that rotates the eye medially (i.e., toward the midline).

**medial temporal amnesia** anterograde and retrograde AMNESIA caused by damage to the MEDIAL TEMPORAL LOBE. Causes of the damage include infarction of the posterior cerebral artery, anoxia, encephalitis, temporal lobectomy, and trauma. See AMNESTIC DISORDER.

**medial temporal gyrus (median temporal gyrus)** see MIDDLE TEMPORAL GYRUS.

**medial temporal lobe** the region toward the middle of the temporal lobe of each cerebral hemisphere. It contains the PYRIFORM AREA, the AMYGDALA, and the HIPPOCAMPUS. It is involved particularly in learning and memory.

**medial temporal lobe epilepsy** see LIMBIC EPILEPSY.

**median** *n.* the midpoint in a distribution, that is, the score or value that divides it into two equal-sized halves. The median is a measure of CENTRAL TENDENCY that is particularly useful when analyzing data that have SKEWNESS (i.e., lopsidedness), because it is more resistant to the influence of extreme values.

**median-cleft-face syndrome** see FRONTAL NASAL DYSPLASIA.

**median effective dose** see EFFECTIVE DOSE.

**median lethal dose** see LETHAL DOSE.

**median nerve** a nerve that supplies sensory and motor fibers to the arm and hand. Its fibers run through the BRACHIAL PLEXUS.

**median test** a NONPARAMETRIC method that assesses the equality of the midpoints (MEDIANs) in two or more samples of data to determine whether they come from the same population. Although previously used to indicate any of several alternative procedures, the term generally is used now to refer to the WILCOXON-MANN-WHITNEY TEST.

**media psychology** a subspecialty in psychology that studies the influence of television, film, radio, the Internet, social media, advertising, mobile communications, and various other media on people's thoughts, perceptions, emotions, beliefs, behaviors, and relationships.

**media richness** the relative intensity and complexity of a communication channel. Face-to-face communication is a good example of a **rich medium**, as it involves a complex interaction of verbal and nonverbal cues; by contrast, communication exclusively via written messages is a **lean medium**. [proposed in 1984 by U.S. organizational and management theorists Richard L. Daft and Robert H. Lengel]

**mediated generalization** a type of STIMULUS GENER-

ALIZATION in which a CONDITIONED RESPONSE is elicited by a new stimulus that is notably different from, but in some way associated with, the original CONDITIONED STIMULUS. For example, a person conditioned to feel anxious on hearing a bell may also become anxious on hearing the word *bell*. See STIMULUS EQUIVALENCE.

**mediated response** a response that is elicited by a stimulus and is subsequently responsible for the initiation of a behavior.

**mediate experience** conscious awareness and interpretation of external events and stimuli. Mediate experience provides meaning and additional information not contained in the event or stimulus itself. It is contrasted with **immediate experience**, the elements or characteristics of the event or stimuli as perceived directly and without interpretation. INTROSPECTION makes use of immediate experience in analyzing the contents of mediate experience. [defined by Wilhelm WUNDT]

**mediating behavior** behavior that improves either the rate or the probability of reinforcement of a target behavior for which reinforcement is arranged. Compare ADJUNCTIVE BEHAVIOR; COLLATERAL BEHAVIOR; INTERIM BEHAVIOR.

**mediation** *n.* in dispute resolution, use of a neutral outside person—the MEDIATOR—to help the contending parties communicate and reach a compromise. The process of mediation has gained popularity, particularly for couples involved in separation or divorce proceedings (see DIVORCE MEDIATION).

**mediational deficiency** in problem solving, a person's inability to make use of a particular strategy to benefit task performance even if it has been taught to him or her. Compare PRODUCTION DEFICIENCY; UTILIZATION DEFICIENCY.

**mediational learning** a form of learning that involves the use of MEDIATORS to bridge the association between two or more events that are not directly contiguous in space or time. The mediators are events or processes that serve as CUES.

**mediation process** any of the COGNITIVE PROCESSES that are presumed to occur in the mind between reception of a stimulus and initiation of a response. These may include interpretation of sense data, retrieval of stored information, judgments and evaluations, computations, reasoning, and other mental operations.

**mediation theory** the hypothesis that stimuli affect behavior indirectly through an intervening process, as opposed to a simpler stimulus-response model. For example, cognitive therapists maintain that the effect an external event has on an individual is influenced by the individual's thoughts and perceptions of that event.

**mediator** *n.* **1.** an unseen process, event, or system that exists between a stimulus and a response, between the source and destination of a neural impulse, or between the transmitter and receiver of communications. **2.** a person—for example, a lawyer or psychologist—who helps contending parties communicate and reach a compromise. See also DIVORCE MEDIATION. **3.** in statistical analyses, an intermediary or intervening variable that accounts for an observed relation between two other variables. For example, a researcher may posit a model involving an INDEPENDENT VARIABLE of ability, a mediator of self-efficacy, and a DEPENDENT VARIABLE of achievement. Thus, ability is hypothesized to influence self-efficacy, which in turn is thought to influence achievement.

**Medicaid** *n.* a joint federal and state program, instituted by law in 1965 (Title XIX of the Social Security Act), that provides medical benefits for people with low income and limited resources. Medicaid programs follow broad federal guidelines, but each state determines specific benefits and amounts of payments.

**Medicaid Waiver** see HOME AND COMMUNITY-BASED SERVICES.

**medical anthropology** a subdiscipline in cultural ANTHROPOLOGY that applies anthropological theory and research methodology to the study of topics relating to health, health care, disease, and other medical areas.

**medical audit** a systematic evaluation of the effectiveness of diagnostic and treatment procedures. A **retrospective medical audit** is based on a review of a patient's charts after he or she has been discharged; a **concurrent medical audit** is conducted while the patient is still under treatment.

**medical care evaluation (MCE)** a health care review in which an assessment of the quality of care and its utilization is made. It will include an investigation of any suspected problems, analysis of the problems identified, and a plan for corrective action.

**medical family therapy** a form of psychotherapy that combines a BIOPSYCHOSOCIAL systems approach with FAMILY SYSTEMS THEORY to help families deal with the health problems of a family member. This therapy emphasizes collaboration with others—physicians, nurses, occupational therapists, nutritionists, and the like—in the individual family member's health care team.

**medical food** a product specifically developed to meet the nutritional needs of a person who cannot eat or digest ordinary foods or who has a condition that precludes receiving sufficient nutrition from ordinary foods. Medical foods are taken under medical supervision.

**medical history** the portion of the developmental history, or ANAMNESIS, that focuses on the patient's health throughout life, including congenital or acquired illnesses and disorders. The object is to uncover, where possible, clues to the cause of the patient's current condition.

**medical home** see HEALTH HOME.

**medical model** **1.** the concept that mental and emotional problems are analogous to biological problems—that is, they have detectable, specific, physiological causes (e.g., an abnormal gene or damaged cell) and are amenable to cure or improvement by specific treatment. **2.** in evaluation research, a systems-analysis approach to evaluation that considers the interrelatedness of all the factors that may affect performance and monitors possible side effects of treatment. Compare ENGINEERING MODEL.

**medical psychology** **1.** an area of applied psychology devoted to psychological questions arising in the practice of medicine, including emotional reactions to illness, treatment adherence, attitudes toward terminal illness and impending death, psychological means of relieving pain (e.g., hypnotic suggestion), and reactions to disability. See also HEALTH PSYCHOLOGY. **2.** see PRESCRIBING PSYCHOLOGY.

**medical psychotherapy** psychotherapy that makes use of medication and other medical techniques in the treatment of mental illness.

**medical rehabilitation** the process of restoring to the

fullest possible degree the physical functioning of an individual who has a physiological or anatomical impairment.

**medical social worker** a licensed social worker, usually with a master's degree in social work, who assists patients and their families with health-related problems in such areas as employment, finances, living arrangements, marriage, child care, social life, and emotional adjustment.

**medical tourism** travel to another country or location to obtain surgery (e.g., hip replacement) or other medical treatment (e.g., alternative cancer therapy) that is more expensive or unavailable in the country or location where the patient lives.

**Medicare** *n.* a federal program of HEALTH INSURANCE operated by the Centers for Medicare and Medicaid Services of the U.S. Department of Health and Human Services for those over 65, certain younger people with disabilities, and people with end-stage renal disease. Monies from payroll taxes and premiums from subscribers are deposited in trust funds to meet the expenses of the insured. Medicare consists of two basic programs: Part A includes inpatient costs and Part B provides supplementary medical insurance. Other options include a Medicare Advantage plan (Part C), in which medical services are covered by private health insurance companies in contract with Medicare, and an outpatient prescription drug plan (Part D).

**medication** *n.* any drug available by prescription or over the counter to aid in the treatment of an illness, disease, disorder, or condition. Medications specifically used to treat mental health disorders tend to be prescribed therapeutic agents with psychoactive effects (see PSYCHOACTIVE DRUG). **Overmedication**—the taking of more than the prescribed dose of a drug or drugs—may occur when medication is not properly monitored. **Self-medication** is usually associated with individuals who use drugs or alcohol inappropriately to alleviate emotional problems. See also PRESCRIBING PSYCHOLOGY.

**medication-induced movement disorder** any movement disorder that occurs as an adverse effect of medication. It may involve rigidity, tremor, hypertonia (increased muscle tone), and other motor symptoms and is commonly seen after treatment with antipsychotic drugs. See TARDIVE DYSKINESIA.

**mediodorsal nucleus** see DORSOMEDIAL NUCLEUS.

**meditation** *n.* profound and extended contemplation or reflection in order to achieve focused attention or an otherwise ALTERED STATE OF CONSCIOUSNESS and to gain insight into oneself and the world. Traditionally associated with spiritual and religious exercises, meditation is now also used to provide relaxation and relief from stress; treat such symptoms as high blood pressure, pain, and insomnia; and promote overall health and well-being. See also CONCENTRATIVE MEDITATION; MINDFULNESS MEDITATION; TRANSCENDENTAL MEDITATION.

**medium** *n.* **1.** the state of being in the middle of or between two factors or conditions or midway on some scale. **2.** (*pl. media*) any means or agency through which messages are transmitted or information is diffused (e.g., the medium of television). **3.** (*pl. media*) a substance, such as air or water, that serves to transmit a physical effect, such as sound or light. **4.** (*pl. media*) a nutritive substance in which molds or other organisms are grown in a laboratory. **5.** in SPIRITUALISM, a person who functions as the instrument of alleged communication between the living and the

dead. Some mediums often claim paranormal abilities, such as CLAIRVOYANCE, ASTRAL PROJECTION, or powers of PSYCHIC HEALING.

**medium trance** see TRANCE.

**medium-wavelength pigment** the PHOTOPIGMENT, present in one of the three populations of RETINAL CONES, that has maximum sensitivity to a wavelength of 531 nm. The absence of the gene for the medium-wavelength pigment causes DEUTERANOPIA (red–green color blindness). See also LONG-WAVELENGTH PIGMENT; SHORT-WAVELENGTH PIGMENT.

**medulla** *n.* **1.** the central or innermost region of an organ, such as the adrenal medulla, the central portion of the ADRENAL GLAND. Compare CORTEX. **2.** see MEDULLA OBLONGATA. —**medullary** *adj.*

**medulla oblongata** the most inferior (lowest), or caudal (tailward), part of the HINDBRAIN. It contains many nerve tracts that conduct impulses between the spinal cord and higher brain centers, as well as autonomic nuclei involved in the control of breathing, heartbeat, and blood pressure. Also called **myelencephalon**.

**medullary reticular formation** the hindmost portion of the brainstem RETICULAR FORMATION, implicated in motor control and copulatory behavior.

**medullary sheath** see MYELIN SHEATH.

**medullation** *n.* see MYELINATION.

**mefloquine** *n.* a chemical analog of quinine used in the treatment of malarial infections and prevention of malaria. It has been associated with seizures or psychological disturbances, including sleep disturbance, depression, panic attacks, and psychotic symptoms. Although such reactions are rare, mefloquine should not be taken by individuals with histories of depression, generalized anxiety disorder, psychosis, or seizure disorders. U.S. trade name: **Lariam**.

**MEG** abbreviation for MAGNETOENCEPHALOGRAPHY or magnetoencephalograph.

**mega-** *combining form* great or very large.

**megadose pharmacotherapy** a dosing strategy popular in the 1970s and 1980s in the United States and other countries, generally involving the rapid administration of very high doses of an antipsychotic drug in the hope that this would hasten an antipsychotic response. It was based on the presumption that rapid blockade of postsynaptic dopamine D2 receptors would lead to faster resolution of psychotic symptoms. This strategy was largely ineffective in producing a more rapid response and had numerous adverse effects, such as severe movement disorders and death due to NEUROLEPTIC MALIGNANT SYNDROME. Research published in the late 1980s showed that lower doses were as effective as higher doses and had fewer adverse consequences. Because of the lack of clinical benefit and the high incidence of adverse side effects associated with megadose pharmacotherapy, it has fallen into disuse. Also called **rapid neuroleptization**.

**megalencephaly** *n.* an abnormally large, heavy, and usually malfunctioning brain. Large head size (MACROCEPHALY) may be present at birth, or the head may become enlarged in early childhood. Symptoms of megalencephaly can include delayed development, seizures, and corticospinal (brain cortex and spinal cord) dysfunction. **Hemimegalencephaly** is a rare condition that is characterized by the

enlargement of one side of the brain. Children with hemimegalencephaly may have a large and asymmetrical head, seizures, partial paralysis, and intellectual disability. Also called **megaloccephaly**. —**megalencephalic** *adj.*

**megalomania** *n.* a highly inflated conception of one's importance, power, or capabilities, as can be observed in many individuals with mania and paranoid schizophrenia. In the latter, megalomania is often accompanied or preceded by delusions of persecution. See DELUSION OF GRANDEUR.

**megalopsia** *n.* see MACROPSIA.

**Megan's law** an amendment to the Jacob Wetterling Crimes Against Children and Sexually Violent Offender Registration Act requiring that state registries of convicted but released sex offenders be disseminated to the public so that communities will be notified of offenders' presence in a particular neighborhood. More formally known as the **Community Notification Act**, it was initially passed in New Jersey in 1994 after a repeat sex offender murdered a 7-year-old girl named Megan Nicole Kanka; it became a federal law in 1996.

**megavitamin therapy** the use of very high doses of vitamins and mineral supplements, particularly vitamin C (ascorbic acid), nicotinic acid (niacin), vitamin B<sub>6</sub> (pyridoxine), and magnesium, to treat certain mental disorders. Such an approach has not been widely adopted, and effectiveness is uncertain.

**meiosis** *n.* a special type of division of the cell nucleus that occurs during the formation of the sex cells (ova and spermatozoa). During meiosis, a parental cell in the gonad produces four daughter cells that are all HAPLOID; that is, they possess only one of each chromosome, instead of the normal DIPLOID complement of homologous pairs of chromosomes. During the process of fertilization, the ova and spermatozoa undergo fusion, which restores the double set of chromosomes within the nucleus of the zygote thus formed. Compare MITOSIS.

**Meissner's corpuscle** a type of small, oval sensory-nerve ending that is sensitive to touch. Meissner's corpuscles are abundant in the fingertips, nipples, lips, and the tip of the tongue. [Georg **Meissner** (1829–1905), German anatomist and physiologist]

**mel** *n.* a unit designed to measure the subjective extent of PITCH. By definition, the pitch of a 1000 Hz tone presented at 40 dB SPL (40 phons) is 1000 mels. A tone whose frequency is judged to produce a pitch twice that of a 1000 mel tone has a pitch of 2000 mels, and so on. Across the range of orchestral instruments, the mel scale corresponds closely to the basic unit of the musical scale, the OCTAVE, so that doubling the frequency of a tone approximately doubles the number of mels.

**melancholia** *n.* an archaic name for depression. —**melancholic** *adj.*

**melancholia agitata** a 19th-century term for CATASTONIC EXCITEMENT. It is occasionally still used for AGITATED DEPRESSION.

**melancholic features** in *DSM-IV-TR*, characteristics that may be associated with a MAJOR DEPRESSIVE EPISODE, including loss of pleasure in activities, sadness that worsens in the morning, early morning awakening, psychomotor agitation or retardation, loss of appetite or weight, and excessive guilt.



**melancholic type** the morose personality type that GALEN attributed to an excess of black bile. See HUMORAL THEORY.

**melano-** (**melan-**) *combining form* black or dark.

**melanocortin-4 receptor (MC4-R)** a RECEPTOR that is activated by ALPHA-MELANOCYTE STIMULATING HORMONE. It may play a role in the regulation of eating and body weight.

**melanocyte-stimulating hormone (MSH)** a hormone secreted by the anterior pituitary gland that stimulates dispersal of melanin granules within pigment cells (melanophores) of the skin of certain vertebrates (e.g., amphibians), thereby darkening the skin. In mammals, it may play a role in regulating eating behavior (see ALPHA-MELANOCYTE STIMULATING HORMONE).

**melatonin** *n.* an AMINE HORMONE, produced mainly by the PINEAL GLAND as a metabolic product of the neurotransmitter serotonin, that helps to regulate seasonal changes in physiology and may also influence puberty. It is implicated in the initiation of sleep and in the regulation of the sleep–wake cycle. Melatonin has been investigated in clinical studies as a hypnotic and for the management of CIRCADIAN RHYTHM SLEEP DISORDERS. Although these studies are as yet inconclusive, melatonin is widely available as an over-the-counter medication.

**melioration** *n.* in behavioral studies, allocating time to two or more activities such that local rates of REINFORCEMENT (i.e., reinforcers obtained per unit of time for each activity) are equal.

**Mellaril** *n.* a trade name for THIORIDAZINE.

**Melnick–Needles syndrome** see OTOPALATODIGITAL SPECTRUM DISORDERS.

**melodic intonation therapy (MIT)** speech therapy that uses melody to regain or improve speech in individuals with certain kinds of APHASIA, MOTOR SPEECH DISORDER, or EXPRESSIVE LANGUAGE DISORDER. Based on the theory of right-hemisphere dominance for music, MIT trains the speaker to intone, or “sing,” text in pitches and rhythms that parallel natural spoken prosody. MIT is primarily an auxiliary to other forms of speech therapy.

**member check** a procedure used in QUALITATIVE RESEARCH whereby a researcher returns to a participant and requests feedback on his or her original responses as recorded and sometimes on their interpretation by others. Conducting a member check is intended to ensure the accuracy and INTERNAL VALIDITY of a qualitative study. However, some researchers question the merit of the process, viewing it as inconsistent with qualitative research in that it assumes participants’ experiences are objective and finite. Also called **member validation**; **respondent validation**.

**membership group** a social body or organization to which people belong as members, especially when they feel that the group has formally or informally accepted them into its ranks. Such groups, which include clubs, societies, cliques, teams, and political parties, often explicitly distinguish between individuals who belong to the group and those who do not. Compare ASPIRATIONAL GROUP; REFERENCE GROUP.

**membrane** *n.* a thin layer of tissue that covers a surface, lines a cavity, or connects or divides anatomical spaces or organs. One of the fundamental functions of a membrane

is to contain the components within it. In cells, the membrane surrounds the cytoplasm and is composed of proteins and lipids. It is semipermeable and acts to control the passage of substances in and out of the cell (see ION CHANNEL).

**membrane potential** a difference in electric potential across a membrane, especially the plasma membrane of a cell. At rest, the membrane potential intracellularly is usually negative; that is, the inside of a cell membrane is comparatively negative versus the outside. See also RESTING POTENTIAL.

**membranous labyrinth** see LABYRINTH.

**meme** *n.* a unit of practice or belief through which a society or culture evolves and that passes from one generation (or even one person) to the next. In this sense, the term—coined in 1976 by British biologist Richard Dawkins (1941– ) and derived from the Greek word for “imitation”—is a kind of metaphorical parallel to the term GENE. Relatedly, an **Internet meme** is an idea (e.g., a word or phrase, hashtag, hyperlink, picture, or video), usually rooted in popular culture, that is widely popularized and distributed on the World Wide Web, for example, via social networks, blogs, e-mail, and news sources.

**memorandum as a whole** see OBJECTIVE PSYCHOTHERAPY.

**memorize** *vb.* to commit to memory. Memorizing usually implies ROTE LEARNING or DRILL as the method of learning, although use of an active MNEMONIC strategy is likely to be more effective. —**memorization** *n.*

**memory** *n.* **1.** the ability to retain information or a representation of past experience, based on the mental processes of learning or ENCODING, RETENTION across some interval of time, and RETRIEVAL or reactivation of the memory. **2.** specific information or a specific past experience that is recalled. **3.** the hypothesized part of the brain where traces of information and past experiences are stored. See MEMORY STORAGE; MEMORY SYSTEM. See also EXPLICIT MEMORY; IMMEDIATE MEMORY; IMPLICIT MEMORY; LONG-TERM MEMORY; SHORT-TERM MEMORY.

**memory abilities** abilities involved in remembering information, as assessed by tests of FREE RECALL (recall of words in any order), SERIAL RECALL (recall of words in a fixed order), PAIRED-ASSOCIATES LEARNING (recall of a word paired with the word presented), and RECOGNITION memory (skill in stating correctly whether a presented word was previously presented on some list). Psychometric data suggest that, typically, various memory abilities are only weakly related to each other. Moreover, IMPLICIT MEMORY is largely independent of EXPLICIT MEMORY.

**memory aid** see MNEMONIC.

**memory attribution** the ascribing of a memory to a source (e.g., a previously experienced event, another person, one’s imagination), depending on the source details retained in memory. Misattributions of memory can occur due to a number of factors (e.g., nonconscious influence of attitudes), resulting in a SOURCE MONITORING error. Common examples of misattributions include CRYPTOMNESIA and FALSE MEMORY.

**memory color** any object’s color as modified in memory. The quality of remembered color often differs substantially from the actual hue. Color perception is considered to be a compromise between the memory color and present sensory input.

**memory consolidation** see CONSOLIDATION; PERSEVERATION—CONSOLIDATION HYPOTHESIS.

**memory curve** see RETENTION CURVE.

**memory decay** see DECAY THEORY.

**memory disorder** any impairment in the ability to encode, retain, or retrieve information or representations of experiences. A notable example is AMNESIA. Memory disorders may be partial or global, mild or severe, permanent or transitory, and anterograde (pertaining to difficulty with new information) or retrograde (pertaining to difficulty with previously known information). The causes include medical conditions leading to structural lesions of the brain or metabolic disruption of brain function, aging, psychological trauma, fugue states, or intrapsychic conflicts.

**memory distortion** any inaccurate or illusory recall or recognition, such as DÉJÀ VU, a FALSE MEMORY, or a MEMORY ILLUSION.

**memory drum** a device formerly used to present items in memory experiments. The drum turned at a given speed, allowing one item at a time to be seen through an opening. The memory drum has been replaced by presentation of items on a computer screen.

**memory-enhancing drug** see COGNITIVE ENHANCER.

**memory illusion** a distortion in remembering, analogous to a perceptual illusion, in which one remembers inaccurately or remembers something that in fact did not occur. The DEESE—ROEDIGER—MCDERMOTT PARADIGM is a memory illusion. See FALSE MEMORY.

**memory impairment** the loss of memory associated with a MEMORY DISORDER.

**memory-operating characteristic curve (MOCC)** a graphic representation of the proportion of items accurately remembered against the proportion mistakenly remembered (called false positives).

**memory retraining** strategies to help individuals with neurological deficits improve their ability to process information in WORKING MEMORY. These strategies are typically applied with patients with brain injury or dementia and those with HIV/AIDS who are experiencing memory problems.

**memory span** the number of items that can be recalled immediately after one presentation. Usually, the items consist of letters, words, numbers, or syllables that the participant must reproduce in order. A distinction may be drawn between **visual memory span** and AUDITORY MEMORY SPAN, depending on the nature of the presentation. See also DIGIT SPAN; OPERATION SPAN.

**memory storage** the retention of memories in an organism. Historically, explanations of this process have included the continuous operation or “reverberation” of loops of neurons in cell assemblies (see CELL ASSEMBLY; REVERBERATING CIRCUIT), the growth of new nerve endings grouped in synaptic knobs, and the encoding of information in complex molecules, such as RNA. Contemporary biological research suggests changes in synaptic efficiency as the basis of memory storage, as postulated in the research of Austrian-born U.S. neuroscientist Eric Kandel (1929– ).

**memory system** any of several different kinds of memory that are hypothesized to be located in separate brain

areas and employed primarily in different sorts of memory tasks. Examples of hypothesized systems include WORKING MEMORY (a temporary store used in manipulating information), SEMANTIC MEMORY (general knowledge), EPISODIC MEMORY (memories of one’s personal past), and PROCEDURAL MEMORY (habits and skills). See also PERCEPTUAL REPRESENTATION SYSTEM.

**memory trace** a hypothetical modification of the nervous system that encodes a representation of information or a learning experience. See ENGRAM.

**menacme** *n.* the period of a woman’s life cycle in which she experiences menstrual activity (i.e., from puberty to menopause).

**ménage à trois** **1.** a sexual relationship involving three people who are members of the same household. **2.** three people having sex together (see TROILISM).

**menarche** *n.* the first incidence of MENSTRUATION in a female, marking the onset of puberty. The age at which menarche occurs varies among individuals and cultures: It tends to occur earlier in Western countries, possibly associated with better nutrition. —**menarcheal** *adj.*

**Mendelian inheritance** a type of inheritance that conforms to the basic principles developed around 1865 by Austrian monk Gregor Mendel (1822–1884), regarded as the founder of genetics. Mendelian inheritance is essentially determined by genes located on chromosomes, which are transmitted from both parents to their offspring. It includes autosomal dominant, autosomal recessive, and SEX-LINKED inheritance. Mendel proposed two principles. The **principle of segregation**, or **Mendel’s first law**, states that recessive traits are neither modified nor lost in future generations as both DOMINANT ALLELES and RECESSIVE ALLELES are independently transmitted and so are able to segregate independently during the formation of sex cells. The **principle of independent assortment**, or **Mendel’s second law**, states that there is no tendency for genes of one parent to stay together in future offspring.

**Ménière’s disease** a disorder of balance and hearing due to excessive fluid in the inner ear, resulting in dizziness, nausea, TINNITUS, and progressive DEAFNESS. [Prosper Ménière (1799–1862), French physician]

**meninges** *pl. n. (sing. meninx)* the three membranous layers that provide a protective cover for the brain and spinal cord. They consist of a tough outer DURA MATER, a middle ARACHNOID MATER, and a thin, transparent PIA MATER, which fits over the various contours and fissures of the cerebral cortex.

**meningioma** *n.* a benign BRAIN TUMOR that develops in the arachnoid layer of the MENINGES, accounting for 15% to 25% of all tumors of the brain and spinal cord. Meningiomas are typically slow growing and cause damage mainly by pressure against the brain. Patients may complain of headaches or seizures as first symptoms.

**meningitis** *n.* inflammation of the meninges, the three membranous layers that cover the brain and spinal cord, usually due to infection by bacteria, viruses, or fungi. Symptoms include high fever, nausea, vomiting, stiff neck, and headache. BACTERIAL MENINGITIS includes meningococcal meningitis and TUBERCULOUS MENINGITIS. **Viral** (or **aseptic**) **meningitis** is a milder nonbacterial disease; causes include the mumps, poliomyelitis, herpes viruses, and the ECHOVIRUSES (which mainly affect young children during the summer). If untreated or not treated promptly, many

types of meningitis can result in confusion, lethargy, coma, and eventually death.

**meningocele** *n.* a congenital herniation (protrusion) of the meninges (the three membranous layers that cover the brain and spinal cord) through an abnormal opening in the skull or spinal cord, with seepage of cerebrospinal fluid into the protrusion. The disorder is sometimes associated with HYDROCEPHALUS or other neurological defects, which reduces the chances of a favorable prognosis. If the herniation contains neural tissue, the condition is identified as an ENCEPHALOCELE.

**meningococcal meningitis** see BACTERIAL MENINGITIS.

**meningoencephalitis** *n.* inflammation of the brain and the meninges covering it.

**meningomyelocele** *n.* protrusion of the spinal cord and its covering meninges through a defect in the spinal column. This results in an external sac containing cerebrospinal fluid, poorly formed meninges, and a malformed spinal cord. Also called **myelomeningocele**. See SPINA BIFIDA.

**menkeiti** *n.* see MYRIACHIT.

**menopausal depression** severe DYSPHORIA occurring during the female CLIMACTERIC (menopause) or immediately before menopause (i.e., perimenopause), particularly among women who have had a prior tendency to depression.

**menopause** *n.* see CLIMACTERIC. —**menopausal** *adj.*

**menorrhagia** *n.* excessive bleeding during menstruation. Also called **epimenorrhagia**.

**Mensa** *n.* an organization of individuals whose sole admission requirement is an IQ in the upper 2% of the population.

**menses** *pl. n.* see MENSTRUATION.

**men's liberation movement** a variety of social movements and positions united only by taking men and masculinity as their topic of interest. Some positions acknowledge the justice of feminist critiques of male dominance and recommend measures whereby men can overcome exploitation of women by men. Others aim to liberate men from stereotypical attitudes, particularly attitudes that prevent their expressing emotions and forming attachments to other men. A quite different type of movement seeks to help men rediscover traditional forms of masculinity and to become more responsible husbands and fathers. Yet another is essentially antifeminist, arguing that men are now subject to various injustices in education, employment, and the law (e.g., in divorce settlements and child-custody agreements). No one area of emphasis has become dominant under the rubric of men's liberation.

**mens rea** the malicious or blameworthy state of mind (Latin, "guilty mind") that must be proved in addition to the ACTUS REUS to establish CRIMINAL RESPONSIBILITY and secure a conviction. It involves a conscious disregard for the law, which is presumed to be known by the defendant. For some crimes, the mens rea may be recklessness or negligence rather than a deliberate intention to bring about certain consequences. Also called **criminal intent**.

**menstrual age** the age of a fetus calculated from the beginning of the mother's last MENSTRUATION. At full term, it

is normally 280 days or 40 weeks—that is, usually 2 weeks longer than the GESTATIONAL AGE.

**menstrual cycle** a modified ESTROUS CYCLE that occurs in most primates, including humans (in which it averages 28 days). The events of the cycle are dependent on cyclical changes in the concentrations of GONADOTROPINS secreted by the anterior pituitary gland, under the control of GONADOTROPIN-RELEASING HORMONE, and can be divided into two phases. In the follicular phase, FOLLICLE-STIMULATING HORMONE (FSH) and LUTEINIZING HORMONE (LH) stimulate development of an ovum and secretion of estrogen within the ovary, in a GRAAFIAN FOLLICLE, culminating in OVULATION, which occurs halfway through the cycle. The estrogen stimulates thickening of the ENDOMETRIUM of the uterus in preparation to receive a fertilized ovum. The luteal phase begins immediately after ovulation, when the ruptured follicle becomes the CORPUS LUTEUM and secretes progesterone, which inhibits further secretion of releasing hormone (and hence of FSH and LH). If fertilization does not occur, this phase ends with menstruation and a repeat of the follicular phase.

**menstrual synchrony** the similar timing thought to occur in the menstrual cycles of women who live together or spend a lot of time together. Whether this phenomenon actually occurs is controversial.

**menstrual taboo** any culture-bound prohibition associated with menstruating women, typically involving physical separation from men, abstinence from sexual intercourse, or the exclusion of women from certain daily activities (e.g., the preparation of food).

**menstruation** *n.* a periodic discharge of blood and endometrial tissue from the uterus through the vagina that occurs in women as part of the MENSTRUAL CYCLE. Also called **menses**; **menstrual** (or **monthly**) **period**.

**mental** *adj.* **1.** of or referring to the MIND or to processes of the mind, such as thinking, feeling, sensing, and the like. **2.** phenomenal or consciously experienced. In contrast to physiological or physical, which refer to objective events or processes, mental denotes events known only privately and subjectively; it may refer to the COGNITIVE PROCESSES involved in these events, to differentiate them from physiological processes.

**mental aberration** a pathological deviation from normal thinking, particularly as a symptom of a mental or emotional disorder.

**mental abilities** abilities as measured by tests of an individual's spatial visualization, perceptual speed, number facility, verbal comprehension, word fluency, memory, inductive reasoning, and so forth, depending on the theory or test. See also PRIMARY ABILITY.

**mental accounting** a cognitive process in which individuals track and evaluate their income and expenditures by grouping them into consumption categories or mental accounts: This in turn affects future transactions by influencing how economic activities are perceived. The topical organization of mental accounts leads people to evaluate gains and losses in relative rather than in absolute terms. For example, a person who finds that a \$10 bill is missing while waiting in line to buy a \$10 theater ticket is likely to buy the ticket anyway, whereas the same person might be unwilling to spend another \$10 to repurchase a new theater ticket to replace one he or she lost. In such a case, going to the theater is viewed as a transaction in which the

cost of the ticket is exchanged for the experience of seeing the play, so that buying a second ticket increases the cost of seeing the play to an unacceptable level; by contrast, the loss of the cash is not posted to the account of the play and it affects the purchase of a ticket only by making the individual feel slightly less affluent. Mental accounting is derived from PROSPECT THEORY and is one of several theoretical approaches to financial decision making. See BEHAVIORAL FINANCE.

**mental age (MA)** a numerical scale unit derived by dividing an individual's results in an intelligence test by the average score for other people of the same age. Thus, a 4-year-old child who scored 150 on an IQ test would have a mental age of 6 (the age-appropriate average score is 100; therefore,  $MA = (150/100) \times 4 = 6$ ). The MA measure of performance is not effective beyond the age of 14.

**mental apparatus** see PSYCHIC APPARATUS.

**mental asymmetry** an imbalance in mental abilities, as in individuals with WILLIAMS SYNDROME, who may exhibit severe impairment in visuospatial abilities but possess good to exceptional language abilities.

**mental ataxia** see INTRAPSYCHIC ATAXIA.

**mental balance** INTEGRATION of mental processes.

**mental block** see BLOCK.

**mental chemistry** a concept proposed by John Stuart MILL as an alternative to the MENTAL MECHANICS described by his father, James MILL. The concept is modeled on a common phenomenon in physical chemistry, in which two chemical substances combine to form a compound with properties not present in either of the components. Similarly, Mill held that compound ideas were not merely combinations of simpler ideas but that they possessed other qualities not present in any of the constituent ideas. Thus, such an idea could be an essentially new one. See ASSOCIATIONISM; ASSOCIATION OF IDEAS.

**mental chronometry** see CHRONOMETRIC ANALYSIS.

**mental claudication** a temporary interruption of blood flow to a portion of the brain that results in brief episodes of mental status changes.

**mental coaching** in education, a field of teaching expertise, used mainly for counseling, business, and sports, that is focused on the direct cognitive features of behavior. It can improve overall performance, restore confidence, enhance motivation, reduce mental errors, and upgrade underperformance. It can also teach how to enhance concentration, overcome a slump or block in performance, focus better under pressure, and perform more consistently.

**mental combination** in PIAGETIAN THEORY, a type of cognitive processing typical of the final subphase of the SENSORIMOTOR STAGE, in which children of 18 to 24 months of age begin to use mental images to represent objects and to engage in mental problem solving. It facilitates the transition between the action-oriented world of the infant and the symbol-oriented world of the child. Also called **invention of new means through mental combination**.

**mental confusion** see CONFUSION.

**mental defective** an obsolete name for a person with an intellectual disability or learning disability.

**mental deficiency** another (and now seldom used) name for intellectual disability, sometimes referring to se-

vere or profound intellectual disability with known biological causes.

**mental development** the progressive changes in mental processes due to maturation, learning, and experience. See COGNITIVE DEVELOPMENT.

**mental diplopia** the experience of illusions, hallucinations, or false memories with concurrent awareness that these experiences are not real and are an abnormal occurrence.

**mental disease** an obsolete name for a MENTAL DISORDER.

**mental disorder** any condition characterized by cognitive and emotional disturbances, abnormal behaviors, impaired functioning, or any combination of these. Such disorders cannot be accounted for solely by environmental circumstances and may involve physiological, genetic, chemical, social, and other factors. Specific classifications of mental disorders are elaborated in the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders* (see DSM-IV-TR; DSM-5) and the World Health Organization's INTERNATIONAL CLASSIFICATION OF DISEASES. Also called **mental illness**; **psychiatric disorder**; **psychiatric illness**; **psychological disorder**. See also PSYCHOPATHOLOGY.

**mental effort** the amount of cognitive work required by a given task. See also COGNITIVE LOAD; EFFORTFUL PROCESSING.

**mental energy** see PSYCHIC ENERGY.

**mentalese** *n.* a hypothetical language of thought that combines cognitive and semantic systems and operates on concepts and propositions.

**mental examination** a comprehensive evaluation of an individual's behavior, attitudes, and intellectual abilities for the purpose of establishing or ruling out pathology.

**mental faculty** see COGNITIVE FACULTY; FACULTY PSYCHOLOGY.

**mental fog** see CLOUDING OF CONSCIOUSNESS.

**mental function** any cognitive process or activity, such as thinking, sensing, or reasoning.

**mental growth** the incremental improvement in a mental function, usually intelligence, with increasing age.

**mental handicap** impaired cognitive ability that interferes with independent functioning in the community. Use of the term is now generally discouraged in preference to INTELLECTUAL DISABILITY.

**mental healing** the process of alleviating or attempting to alleviate mental or physical illness through the power of the mind, typically using such methods as visualization, suggestion, and the conscious manipulation of energy flow. See also FAITH HEALING; PSYCHIC HEALING.

**mental health** a state of mind characterized by emotional well-being, good behavioral adjustment, relative freedom from anxiety and disabling symptoms, and a capacity to establish constructive relationships and cope with the ordinary demands and stresses of life. See also FLOURISHING; NORMALITY.

**Mental Health America (MHA)** a U.S. nonprofit organization that addresses all aspects of mental health and illness. Established in 1909, its mission is to promote mental health and to overcome mental disorders and substance

abuse through advocacy, education, research, and service. Formerly known as the **National Mental Health Association**, MHA adopted its present name in 2007.

**mental health care** a category of health care service and delivery provided by several fields involved in psychological assessment and intervention (psychology, psychiatry, neurology, social work, etc.). This type of care includes but is not limited to psychological screening and testing, psychotherapy and family therapy, and neuropsychological rehabilitation. Also called **behavioral health care**. See also MENTAL HEALTH SERVICES.

**mental health clinic** an outpatient facility for the diagnosis and treatment of psychological and behavioral problems.

**mental health consultation** a model of mental health service provision to communities or specific settings (e.g., schools, organizations) in which a clinically trained mental health specialist acts as a consultant to assist and guide an individual or group of individuals (known as **consultees**; including professionals, such as teachers, nurses, primary care doctors, peer counselors, and employers, and nonprofessionals, such as parents or caregivers) in addressing a problem presented by clients under the consultees' supervision or care (such as students, patients, employees, or family members). There is often a dual purpose to mental health consultation: (a) problem solving with a consultee on a specific mental health issue with a client and (b) giving the consultee added skills and insights that will enhance his or her future functioning in dealing with a client's problems. Mental health consultation has several subtypes, including **client-centered consultation**, which focuses the consultant's attention on effective intervention for the client; and **consultee-centered consultation**, in which the consultant focuses on remedying shortcomings in the consultee instead of solely addressing the problems of the client. See also BEHAVIORAL CONSULTATION; CONSULTING PSYCHOLOGY. [developed by British physician Gerald Caplan (1917–2008)]

**mental health counselor** a certified mental health professional who provides counseling services either independently or as part of a treatment team.

**mental health nursing** see PSYCHIATRIC NURSING.

**mental health parity** in U.S. health care law, the mandate that the treatment limits and financial requirements that insurers apply to benefits for treatment of mental health and substance use disorders must not be more restrictive than those applied to medical and surgical benefits in group health plans that provide all such benefits to more than 50 employees.

**mental health program** a treatment, prevention, rehabilitation, or educational service offered by a community mental health center or other entity for the purpose of maintaining or improving the mental health of an individual or community.

**mental health services** any interventions—assessment, diagnosis, treatment, or counseling—offered in private, public, inpatient, or outpatient settings for the maintenance or enhancement of mental health or the treatment of mental or behavioral disorders in individual and group contexts.

**mental health support organization** any organization established to give support to individuals living with mental illness. Such organizations provide access to MU-

TUAL SUPPORT GROUPS and may also advocate for improved delivery of mental health services and improved access to such services, raise money for mental health research, and work to increase public awareness of mental health issues. The NATIONAL ALLIANCE ON MENTAL ILLNESS is an example. See also EX-PATIENT CLUB.

**mental health worker** a member of a mental health treatment team who assists professional staff in a wide range of services.

**mental history** a record of information relating to a person's mental health (see CASE HISTORY). A mental history, which may be compiled by means of structured or unstructured interviews, usually covers the history of both the individual and family members.

**mental hospital** see PSYCHIATRIC HOSPITAL. See also MENTAL INSTITUTION; PRIVATE MENTAL HOSPITAL; PUBLIC MENTAL HOSPITAL.

**mental housecleaning hypothesis** the hypothesis that dreams support the reorganization of material learned during the prior waking period, particularly by simplifying and reducing overlapping information. [developed by U.S. psychiatrist J. Allan Hobson (1933– )]

**mental hygiene** a general approach aimed at maintaining mental health and preventing mental disorder through such means as educational programs, promotion of a stable emotional and family life, prophylactic and early treatment services (see PRIMARY PREVENTION), and public health measures. The term itself is now less widely used than formerly.

**mental illness** see MENTAL DISORDER.

**mental imagery** see IMAGERY.

**mental institution** a treatment-oriented facility in which patients with severe psychological disorder are provided with supervised general care and therapy by trained psychologists and psychiatrists as well as auxiliary staff. The patients of a mental institution will generally be those who are unable to function independently as outpatients when supported by psychoactive drugs. See also PSYCHIATRIC HOSPITAL.

**mentalism** *n.* a position that insists on the reality of explicitly mental phenomena, such as thinking and feeling. It holds that mental phenomena cannot be reduced to physical or physiological phenomena (see REDUCTIONISM). The term is often used as a synonym for IDEALISM, but some forms of mentalism may hold that mental events, although not reducible to physical substances, are nonetheless grounded in physical processes. Most modern cognitive theories are examples of this latter type of mentalism. Compare ELIMINATIVISM; IDENTITY THEORY. See also CONSCIOUS MENTALISM. —**mentalist** *adj.*

**mentality** *n.* **1.** the capacity for thought. **2.** an attitude or way of thinking, especially one that is seen as limited in some way.

**mentalization** *n.* the ability to understand one's own and others' mental states, thereby comprehending one's own and others' intentions and affects. It has been theorized that this ability is a component of healthy PERSONALITY DEVELOPMENT and is achieved through a child's secure attachment to the parent. The concept has had particular application in the understanding and treatment of BORDERLINE PERSONALITY DISORDER (BPD), characterized in this context as a disorder marked in part by an inability to men-

talize due to poor attachment in early life. **Mentalization-based treatment (MBT)** is a psychodynamically oriented psychotherapy that was developed specifically to address mentalization deficits in patients with BPD; by mitigating these deficits, MBT aims to decrease the problems with impulse control and affect regulation that are common to such patients and to improve their interpersonal functioning. Also called **reflective functioning**. [proposed in 1996 by Hungarian-born British psychoanalyst Peter Fonagy (1952– )] —**mentalize** *vb*.

**mental lexicon** the set of words that a person uses regularly (see PRODUCTIVE VOCABULARY) or recognizes when used by others (see RECEPTIVE VOCABULARY). Psycholinguistics has proposed various models for such a lexicon, in which words are mentally organized with respect to such features as meaning, lexical category (e.g., noun, verb), frequency, length, and sound. Also called **lexical memory**.

**mental load** see COGNITIVE LOAD.

**mentally defective** **1.** in some legal jurisdictions in the United States, a descriptor for persons who have a mental disorder or neurological deficit that renders them incapable of appraising the nature of their conduct. **2.** an obsolete and pejorative descriptor for a person with intellectual disability.

**mental map** **1.** a mental representation of the world or some part of it based on subjective perceptions rather than objective geographical knowledge. Such a map will normally prioritize the individual's neighborhood, city, and nation and give prominence to more distant places according to personal experience (e.g., vacations), cultural connections (e.g., family history or language links), and the level of coverage in the mass media. The map will also incorporate the individual's negative or positive feelings about these places, which will often reflect conventional ideas or stereotypes. Research suggests that mental maps vary widely with nationality, region, ethnicity, gender, education, and socioeconomic class. **2.** any internal representation of two-dimensional or three-dimensional space. See COGNITIVE MAP.

**mental maturity** the fully developed mental functioning of an average adult.

**mental measurement** the use of quantitative scales and methods in measuring psychological processes. Also called **mental testing**. See PSYCHOMETRICS.

**mental mechanics** the concept, named and described by James MILL but common to most earlier associationist positions, that all complex ideas are merely agglomerations of simpler ideas combined according to the laws of association. Also called **mental physics**. Compare MENTAL CHEMISTRY. See also ASSOCIATIONISM; ASSOCIATION OF IDEAS.

**mental mechanism** in PSYCHODYNAMICS, the psychological functions, collectively, that help individuals meet environmental demands, protect the ego, satisfy inner needs, and alleviate internal and external conflicts and tensions. Among them are (a) language, which enables expression of thoughts; (b) memory, which stores information needed in solving problems; and (c) perception, which involves recognition and interpretation of phenomena. In addition, in psychoanalytic and psychodynamic theory, various defense mechanisms, such as RATIONALIZATION and COMPENSATION, help to prevent anxiety and protect self-esteem.

**mental model** any internal representation of the rela-

tions between a set of elements, as, for example, between workers in an office or department, the elements of a mathematics or physics problem, the terms of a syllogism, or the configuration of objects in a space. Such models may contain perceptual qualities and may be abstract in nature. They can be manipulated to provide dynamic simulations of possible scenarios and are thought to be key components in decision making. In the context of ergonomics, for example, a mental model of a system or product would include its various attributes, rules for operation and handling, and expectations regarding use and consequences and would be used to guide the individual's interactions with the system or product in question. See also SHARED MENTAL MODEL.

**mental paper-folding test** a test that requires the participant to indicate what sheets of paper, with directions for folding, will look like once folded to form a three-dimensional shape. The test measures three-dimensional spatial visualization ability.

**mental practice** the use of IMAGERY to practice a specific skill whereby the performance of a task (e.g., a double lutz in figure skating) is visualized but not carried out.

**mental process** any process that takes place in the mind. This term is often used synonymously with COGNITIVE PROCESS. See also HIGHER MENTAL PROCESS.

**mental rehearsal** the use of IMAGERY to practice behavioral patterns or skills, for example, reacting without impatience to a request that seems unnecessary or performing a defensive play in basketball.

**mental representation** a hypothetical entity that is presumed to stand for a perception, thought, memory, or the like during cognitive operations. For example, when doing mental arithmetic, one presumably operates on mental representations that correspond to digits and numerical operators; when one imagines looking at the reverse side of an object, one presumably operates on a mental representation of that object; when one repeats a phone number aloud while dialing it, one presumably operates on mental representations of the names of the digits. However, there is no consensus yet as to what mental representations might be. See THINKING.

**mental retardation (MR)** in *DSM-IV-TR*, a disorder characterized by intellectual function that is significantly, below average: specifically, that of an individual with a measured IQ of 70 or below on tests with a standard deviation of 15, whose ADAPTIVE BEHAVIOR is impaired and in whom the condition is manifested during the developmental period, defined variously as below the ages of 18 or 22. In infants, diagnosis is based on clinical judgment. The disorder may be the result of brain injury, disease, or genetic causes and is typically characterized by an impairment of educational, social, and vocational abilities. It is now more commonly known, and is identified in *DSM-5*, as INTELLECTUAL DISABILITY. See also MILD MENTAL RETARDATION; MODERATE MENTAL RETARDATION; PROFOUND MENTAL RETARDATION; SEVERE MENTAL RETARDATION; UNSPECIFIED MENTAL RETARDATION.

**mental rotation** the ability to mentally manipulate stimuli some degree clockwise or counterclockwise from their normal orientations. This ability was originally measured using a laboratory task, developed by U.S. psychologist Roger Newland Shepard (1929– ), that required participants to make judgments about stimuli that had been rotated out of their normal orientation.

**Mental scale** see BAYLEY SCALES OF INFANT AND TODDLER DEVELOPMENT.

**mental set 1.** a temporary readiness to perform certain psychological functions that influences the response to a situation or stimulus, such as the tendency to apply a previously successful technique in solving a new problem. It is often determined by instructions but need not be. Essentially synonymous with the older term *EINSTELLUNG*, mental set is the embodiment of the earlier concepts of *AUFGABE* and *DETERMINING TENDENCY*. **2.** the situation in which a preparedness to perform one type of task causes a decrement in the ability to perform on some other category of task. See *TASK SWITCHING*.

**mental shift** a switch from one MENTAL SET to another, as in moving from an arithmetic-based problem to one involving a simple numerical code. Research has shown that efficiency suffers noticeably when tasks require abrupt or frequent mental shifts.

**mental status** the global assessment of an individual's cognitive, affective, and behavioral state as revealed by a MENTAL EXAMINATION that covers such factors as general health, appearance, mood, speech, sociability, cooperativeness, facial expression, motor activity, mental activity, emotional state, trend of thought, sensory awareness, orientation, memory, information level, general intelligence level, abstraction and interpretation ability, and judgment.

**mental status examination (MSE)** a comprehensive WORKUP of a patient, based on interviews, tests, and other sources of information and including details of mental status, personality characteristics, diagnosis, prognosis, and treatment options.

**mental synthesis** the process by which ideas and images are combined and formed into objects of thought, or by which objects of consciousness are brought together into meaningful wholes.

**mental test 1.** any test that measures one or more cognitive abilities. **2.** an intelligence test.

**mental testing** see MENTAL MEASUREMENT.

**mental topography** see TOPOGRAPHICAL PSYCHOLOGY.

**mental workload** see COGNITIVE LOAD.

**mentation** *n.* thinking or mental activity in general.

**mentor** *n.* an experienced person who provides instruction, encouragement, guidance, advice, and other support to, and helps develop the skills of, a less experienced person.

**mentoring** *n.* the provision of instruction, encouragement, and other support to an individual (e.g., student, youth, colleague) to aid his or her overall growth and development or pursuit of greater learning skills, a career, or other educational or work-related goals. Numerous **mentoring programs** exist within occupational, educational, and other settings; they use frequent communication and contact between mentors and their respective protégés as well as a variety of techniques and procedures to develop productive relationships.

**meperidine** *n.* a synthetic opioid used in the acute management of moderate to severe pain (see OPIOID ANALGESIC). It is an agonist at the mu OPIOID RECEPTOR and has the side effects of other opioid analgesics. Fatal reactions have resulted when meperidine is administered to patients taking monoamine oxidase inhibitors (MAOIs), and it should

therefore not be used in patients who have taken MAOIs within 14 days. Patients taking phenothiazine antipsychotics or tricyclic antidepressants concurrently with meperidine may experience severe respiratory depression. Also called **pethidine**. U.S. trade name (among others); **Demerol**.

**mephedrone (4-methyl-N-methylcathinone)** *n.* an illegal recreational drug related to METHAMPHETAMINE that can be taken orally, injected, or inhaled. Effects may include euphoria, hallucinations, agitation, panic attacks, reduced motor control, and increased heart rate. Also called **drone** and **M-Cat**, among other colloquialisms.

**mephenytoin** *n.* see HYDANTOIN.

**meprobamate** *n.* one of the drugs introduced into the U.S. market in the early 1950s as an alternative to the BARBITURATES. It was commonly and widely prescribed in the 1950s and 1960s for daytime sedation and the treatment of anxiety. Meprobamate is a less potent respiratory depressant than the barbiturates unless taken in combination with other CNS depressants, such as alcohol and OPIOIDS. Like the barbiturates, use of meprobamate has been almost completely supplanted by the benzodiazepines. U.S. trade name: **Miltown**. See also SEDATIVE, HYPNOTIC, AND ANXIOLYTIC DRUG.

**mercury switch** an on-off interface between a device and the user that comprises a glass tube containing mercury with electrodes at one end. It can be attached to the hand, wrist, arm, or other body part of users with severe upper extremity disabilities and is activated by slight body movements that tilt it from a neutral position.

**mercy** *n.* kindness, compassion, or leniency toward a transgressor, toward someone over whom one has power or authority, or toward someone in distress.

**mercy killing** a direct action intended to end what would otherwise be the prolonged agony of a dying person or animal. The concept has been known since ancient times: Warriors often were expected to kill a desperately wounded comrade or enemy. Severely injured animals are also put out of their misery by mercy killing. See also ASSISTED DEATH; EUTHANASIA.

**mere-exposure effect** the finding that individuals show an increased preference (or liking) for a stimulus as a consequence of repeated exposure to that stimulus. This effect is most likely to occur when there is no preexisting negative attitude toward the stimulus object, and it tends to be strongest when the person is not consciously aware of the stimulus presentations. [identified in 1968 by Robert B. ZAJONC]

**mere-thought polarization** the finding that merely thinking about an attitude can result in polarization in the direction of that attitude. For example, thinking about a moderately positive attitude can result in that attitude becoming extremely positive. [originally demonstrated by U.S. psychologist Abraham Tesser (1941– )]

**Meridia** *n.* a former trade name for SIBUTRAMINE.

**meridional amblyopia** an abnormal condition, caused by ASTIGMATISM, in which contours of oblique orientation appear sharply focused whereas other orientations (vertical and horizontal) appear blurred, even when the astigmatism is optically corrected. This indicates that the astigmatism, prior to optical correction, altered orientation-selective mechanisms in the visual cortex in a direction favoring oblique over horizontal and vertical

orientations. Presumably, individuals with meridional amblyopia have a paucity of cortical cells tuned to vertical and horizontal orientations.

**Merital** *n.* a former trade name for NOMIFENSINE.

**meritocracy** *n.* a political or social system in which rewards are given to individuals on the basis of their accomplishments. —**meritocratic** *adj.*

**Meritor Savings Bank v. Vinson** a case resulting in an influential 1986 U.S. Supreme Court ruling that a HOSTILE WORK ENVIRONMENT constitutes SEXUAL HARASSMENT and that victims do not bear the burden of demonstrating they were harmed by the harassment.

**Merkel's corpuscle** see MERKEL'S TACTILE DISK.

**Merkel's law** the principle that equal suprathreshold (above-threshold) differences in sensation correlate with equal differences in stimuli intensity. [Julius **Merkel** (1834–1900), German psychologist]

**Merkel's tactile disk** a type of sensory-nerve ending in the GLABROUS SKIN of the hands and feet and in the hairy skin. Also called **Merkel's corpuscle**; **Grandry–Merkel corpuscle**. [Friedrich Siegmund **Merkel** (1845–1919), German anatomist; M. **Grandry**, 19th-century Belgian physician]

**merycism** *n.* see RUMINATION.

**mescal buttons** see PEYOTE.

**mescaline** *n.* a HALLUCINOGEN derived from the PEYOTE cactus and long used by indigenous peoples of the southwestern United States and Central America as part of certain religious ceremonies. Its effects often include nausea and vomiting as well as visual hallucinations involving lights and colors; they have a slower onset than those of LSD and usually last 1 to 2 hours. Mescaline is the oldest classic hallucinogen known to Western science; its pharmacology was defined in 1896, and its structure was verified by synthesis in 1919. It is a substituted PHENYLETHYLAMINE, and its likely mechanism of action is via serotonin and dopamine receptors. Mescaline is classified by the U.S. Drug Enforcement Administration as a Schedule I controlled substance (see SCHEDULED DRUG).

**mesencephalic nucleus** one of the three nuclei of the TRIGEMINAL NERVE. It extends through the PONS into the lower part of the MIDBRAIN (mesencephalon), and its fibers innervate the muscles and joints of the head.

**mesencephalic tegmentum** a region of the dorsal MIDBRAIN (mesencephalon) with neural connections between the cerebrum, spinal cord, thalamus, and subthalamus, forming an indirect corticospinal tract.

**mesencephalon** *n.* see MIDBRAIN. —**mesencephalic** *adj.*

**mesial temporal lobe epilepsy** see LIMBIC EPILEPSY.

**mesmerism** *n.* a therapeutic technique popularized in the late 18th century by Franz Anton MESMER, who claimed to effect cures through the use of a vitalistic principle that he termed ANIMAL MAGNETISM. The procedure involved the application of magnets to ailing parts of a patient's body and the induction of a trance-like state by gazing into the patient's eyes, making certain "magnetic passes" over him or her with the hands, and so forth. Variants of mesmerism remained popular for much of the 19th century, when they were gradually superseded by HYPNOSIS. —**mesmerist** *n.* —**mesmeric** *adj.* —**mesmerize** *vb.*

**meso-** (**mes-**) *combining form* middle or medium.

**mesocephalic** *adj.* see CEPHALIC INDEX. —**mesocephaly** *n.*

**mesocortical system** a network of DOPAMINERGIC neurons in the brain that consists of the medial PREFRONTAL CORTEX and the ANTERIOR CINGULATE CORTEX. It has connections to other parts of the limbic system, including the NUCLEUS ACCUMBENS, nuclei of the STRIA TERMINALIS, and AMYGDALA. It receives input from the VENTRAL TEGMENTAL AREA, and its activity is related to emotion, reward, and substance abuse.

**mesoderm** *n.* the middle of the three primary GERM LAYERS of an animal embryo at the GASTRULA stage, lying between the ectoderm and endoderm. It develops into cartilage and bone, connective tissue, muscle, blood vessels and blood cells, the lymphatic system, gonads, and the excretory system. —**mesodermal** *adj.*

**mesokurtic** *adj.* describing a FREQUENCY DISTRIBUTION that is neither flatter nor more peaked than the NORMAL DISTRIBUTION. That is, a mesokurtic arrangement of values follows a bell-shaped curve, with the majority of scores clustered around a value at the midpoint and a few extreme scores tapering off on either side. See also PLATYKURTIC; LEPTOKURTIC.

**mesolimbic system** a network of DOPAMINERGIC neurons in the brain consisting of the NUCLEUS ACCUMBENS, AMYGDALA, and OLEFACTORY TUBERCLE. It receives input from the VENTRAL TEGMENTAL AREA and its activity is related to emotion, reward, and substance abuse.

**mesomorph** *n.* a constitutional type (SOMATOTYPE) in SHELDON'S CONSTITUTIONAL THEORY OF PERSONALITY characterized by a muscular, athletic physique, which—according to this theory—is highly correlated with SOMATOTONIA. Also called **mesomorphic body type**. See also BODY-BUILD INDEX. —**mesomorphic** *adj.* —**mesomorphy** *n.*

**mesontomorph** *n.* a constitutional body type characterized by a broad, stocky body, roughly equivalent to a MESOMORPH. —**mesontomorphic** *adj.*

**mesopic vision** vision that involves aspects of both PHOTOPIC VISION and SCOTOPIC VISION, thus being mediated by both rods and cones.

**mesoridazine** *n.* a conventional ANTIPSYCHOTIC of the piperidine PHENOTHIAZINE class. Mesoridazine is a low-potency agent that is a metabolic product of THIORIDAZINE. Like the latter drug, its use is associated with life-threatening disturbances in heart rhythm (prolongation of the Q-T interval potentially leading to torsades de pointes syndrome; see ELECTROCARDIOGRAPHIC EFFECT). It should not be administered to individuals taking other drugs that prolong the Q-T interval or who have a history of heart rhythm disturbances, and it is appropriate for the treatment of schizophrenia only in individuals who have not responded to other antipsychotic agents. U.S. trade name: **Serentil**.

**mesoskelic** *adj.* denoting a constitutional body type that is intermediate between brachyskelic (see BRACHYSKELETAL) and MACROSKELEIC and roughly equivalent to the ATHLETIC TYPE in KRETSCHEMER TYPOLOGY. [described by French physician L. P. Manouvrier (1850–1927)]

**mesosomatic** *adj.* denoting an individual whose body build is within one standard deviation of the mean after



scores for height and chest measurements have been multiplied (see BODY-BUILD INDEX).

**mesostriatal system** a set of DOPAMINERGIC neurons whose axons arise from the midbrain and innervate the BASAL GANGLIA. It includes neurons connecting the substantia nigra to the striatum (see NIGROSTRIATAL TRACT).

**mesosystem** *n.* in ECOLOGICAL SYSTEMS THEORY, the groups and institutions outside the home (e.g., day care, school, a child's peer group) that influence the child's development and interact with aspects of the **microsystem** (e.g., relations in the home). Compare CHRONOSYSTEM; EXOSYSTEM; MACROSYSTEM. [introduced by Urie BRONFENBRENNER]

**message factors** characteristics of a persuasive message that can influence the effectiveness of the message itself. Such characteristics include whether the message is one-sided or two-sided (see ONE-SIDED MESSAGE) and whether or not it is a RHETORICAL-QUESTION MESSAGE.

**message-learning approach** a theory that conceptualizes ATTITUDE CHANGE as a type of learning process in which the extent of attitude change is determined by how well the ARGUMENTS in a persuasive message are learned. This process is seen as having five steps: exposure, attention, comprehension, yielding, and retention. The theory postulates that performance of these steps can be affected by four different types of variables: SOURCE FACTORS, MESSAGE FACTORS, CHANNEL FACTORS, and RECIPIENT FACTORS. Also called **Hovland model**; **Yale model**. [originally developed by Carl I. HOVLAND and his colleagues at Yale University]

**messenger RNA (mRNA)** a type of RNA that carries instructions from a cell's genetic material (usually DNA) to the protein-manufacturing apparatus elsewhere in the cell and directs the assembly of protein components in precise accord with those instructions. The instructions are embodied in the sequence of bases in the mRNA, according to the GENETIC CODE.

**Messiah complex** the desire and compulsion to redeem or save others or the world. The individual may harbor the delusion of being divine. See also JEHOVAH COMPLEX.

**Mestinon** *n.* a trade name for PYRIDOSTIGMINE.

**MET** symbol for METABOLIC EQUIVALENT.

**meta-** (**met-**) *prefix* **1.** beyond or behind (e.g., METAPHYSICS). **2.** change or alteration (e.g., METABOLISM).

**meta-analysis** *n.* a quantitative technique for synthesizing the results of multiple studies of a phenomenon into a single result by combining the EFFECT SIZE estimates from each study into a single estimate of the combined effect size or into a DISTRIBUTION of effect sizes. For example, a researcher could conduct a meta-analysis of several studies on the association between self-efficacy and achievement, integrating the findings into an overall correlation. Although meta-analysis is ideally suited for summarizing a body of literature in terms of its impact, limitations, and implications, there are conditions that limit its applicability. For example, there is no minimum number of studies nor participants required, and information of potential interest may be missing from the original research reports upon which the procedure must rely.

**meta-attention** *n.* awareness of the factors that influence one's attention.

**metabolic anomaly** see INBORN ERROR OF METABOLISM.

**metabolic defect** any deficiency in the structure or enzymatic function of protein molecules or in the transport of substances across cell membranes due to INBORN ERRORS OF METABOLISM or disturbances caused by toxic agents or dietary excesses (e.g., alcoholism, cholesterol-rich foods).

**metabolic disorder** a disruption in the body's physical and chemical processing of food into energy (see METABOLISM), caused when one or more organs (e.g., liver, pancreas) do not function properly. Metabolic disorders may be congenital (e.g., cystic fibrosis, sickle-cell anemia, Tay-Sachs disease) or acquired (e.g., some cases of nonalcoholic fatty liver disease).

**metabolic encephalopathy** a form of ENCEPHALOPATHY arising from a metabolic disorder. Also called **toxic-metabolic encephalopathy**.

**metabolic equivalent** (symbol: MET) a unit of measurement of heat, or energy, produced by the body: 1 MET = 50 kcal/h/m<sup>2</sup> body surface. MET units are used to assess the expenditure of oxygen in a given activity; for example, 1 MET indicates that the body is at rest, 3 to 5 units would indicate light work, and more than 9 units indicates heavy work.

**metabolic-nutritional model** a system of studying mental disorders in which the emphasis is on long-term assessments of the influence of such factors as toxins and deprivations in populations.

**metabolic rate** the rate of use of energy of an organism during a given period. It is measured in kilojoules or kilocalories per day. See also BASAL METABOLISM.

**metabolic screening** examination procedures used in predicting or diagnosing a possible INBORN ERROR OF METABOLISM (e.g., phenylketonuria). The procedures include routine blood tests for newborns, GENETIC COUNSELING of parents with known familial metabolic deficiencies, and AMNIOCENTESIS.

**metabolic syndrome** a collection of conditions that increases an individual's risk for cardiovascular disease, stroke, and Type 2 diabetes. These include hypertension, elevated insulin levels, nonalcoholic fatty liver disease, and obesity. Metabolic syndrome may be congenital, acquired, or both.

**metabolic tolerance** see PHARMACODYNAMIC TOLERANCE.

**metabolism** *n.* the physical and chemical processes within a living cell or organism that are necessary to maintain life. It includes **catabolism**, the breaking down of complex molecules into simpler ones, often with the release of energy; and **anabolism**, the synthesis of complex molecules from simple ones. See also BASAL METABOLISM; CARBOHYDRATE METABOLISM; FAT METABOLISM; PROTEIN METABOLISM. [term coined by German physiologist Theodor Schwann (1810–1882)] —**metabolic** *adj.*

**metabolite** *n.* a substance necessary for, involved in, or produced by METABOLISM.

**metabotropic receptor** a neurotransmitter RECEPTOR that does not itself contain an ION CHANNEL but may use a G PROTEIN to open a nearby ion channel. See GLUTAMATE RECEPTOR. Compare IONOTROPIC RECEPTOR.

**metachromatic leukodystrophy** an autosomal recessive disorder (see RECESSIVE ALLELE) characterized by deficiency or absence of the enzyme arylsulfatase A, which results in loss of myelin in the nervous system and accu-

mulation of cerebroside sulfate (a type of myelin lipid) within the white matter of the central nervous system. Loss of motor function and deterioration in mental ability most commonly develop after the 1st year of life (late infantile form), but symptoms may also appear between 3 and 10 years of age (juvenile form) or around age 30 (adult form).

**metacognition** *n.* awareness of one's own cognitive processes, often involving a conscious attempt to control them. The TIP-OF-THE-TONGUE PHENOMENON, in which one struggles to retrieve something that one knows one knows, provides an interesting and common example of metacognition. —**metacognitive** *adj.*

**metacognitive model of attitudes (MCM)** a model postulating that people associate an ATTITUDE OBJECT not only with positive and negative evaluations but also with true or false assessments known as **validity tags**. The model proposes that responses to deliberative attitude measures (i.e., EXPLICIT ATTITUDE MEASURES) are influenced by these tags, whereas responses to nondeliberative attitude measures (i.e., IMPLICIT ATTITUDE MEASURES) are relatively uninfluenced by them. [proposed by U.S. psychologist Richard E. Petty (1951– ), Spanish psychologist Pablo Briñol, and U.S. psychologist Kenneth G. DeMarree]

**metacommunication** *n.* auxiliary or covert messages, usually conveyed in the form of subtle gestures, movements, and facial expressions, about the procedural aspects or the dynamics (rather than the actual content) of communication between two or more parties. For example, a manager may respond to an employee's request for help by looking annoyed, thus indicating displeasure that the employee could not handle the situation alone.

**metacounter** *n.* a form of backward MASKING in which the perception of a visible stimulus (the target) is altered by the subsequent presentation of a second visual stimulus (the mask) in a different spatial location. The target is often a small dot, while the mask is a ring that surrounds it. Each stimulus is presented very briefly (10–100 ms), at intervals that are varied systematically, and the quality of the target's percept is measured. Compare PARACOUNTER.

**metacriterion** *n.* a suggested criterion, proposed by Hungarian-born philosopher Imre Lakatos (1922–1974), for evaluating competing understandings of science. Lakatos derived his metacriterion from the use of similar criteria in the evaluation of competing philosophical theories and proposed it as an alternative to both the FALSIFICATIONISM of Austrian-born British philosopher Karl Popper (1902–1994) and the historical theories of science of U.S. philosopher Thomas Kuhn (1922–1996). According to the metacriterion, a theory of science should be preferred to its competitors if it (a) makes more rational sense of the history of scientific practice and findings and (b) can be shown to lead to the discovery of more novel historical facts.

**Metadate** *n.* a trade name for METHYLPHENIDATE.

**metaemotion** *n.* one's awareness of and attitude toward one's own and others' emotions. For example, some people have negative attitudes toward anger in themselves or anyone else; others like to encourage anger. Some are ashamed of being too happy; others strive for such a state.

**metaesthetic range** the range of weak pain sensations just below the level of obvious, unmistakable pain.

**metaethics** *n.* see ETHICS.

**metaevaluation** *n.* in evaluation research, an attempt to make judgments on the worth of an evaluation process with regard to its value and usefulness and its reliance on accepted evaluation standards. This involves a systematic evaluation that focuses on assessing methodological rigor, utility, cost, relevance, scope, importance, credibility, timeliness, and pervasiveness of dissemination.

**metagnomy** *n.* the divination of knowledge of the past or present by means other than the five senses, such as EX-TRASENSORY PERCEPTION.

**metalanguage** *n.* **1.** a language or set of symbols that is used to describe another language or set of symbols. Examples are English words used in teaching a foreign language, the instructions that accompany a computer program, and the use of mathematical symbols to analyze the logic of an argument (see SYMBOLIC LOGIC). Also called **second-order language**. **2.** any use of language to discuss or analyze language, as in formal linguistic study, literary criticism, or the attempts of speakers to make sure that they understand one another correctly (e.g., "When you said the book was unreadable, were you referring to the print quality or the author's style?").

**metalinguistic awareness** a conscious awareness of the formal properties of language as well as its functional and semantic properties. It is associated with a mature stage in language and metacognitive development (see METACOGNITION) and does not usually develop until around age 8. The arrival of metalinguistic awareness is often signaled by an interest in PUNS and word games. Also called **linguistic awareness**.

**metamemory** *n.* awareness of one's own memory processes, often involving a conscious attempt to direct or control them. It is an aspect of METACOGNITION.

**metamorphopsia** *n.* a visual disorder in which objects appear to be distorted in size (see MICROPSIA; MACROPSIA), contour (e.g., irregular wavy edges), position (e.g., tilted), distance (see TELEOPSIA), and color (e.g., fading of colors). Metamorphopsia can result from a variety of causes but frequently is due to displacement of the retina.

**metamorphosis** *n.* a change in form or structure, typically from one developmental stage to another. See also SEXUAL METAMORPHOSIS. —**metamorphose** *vb.*

**metamotivation** *n.* in the humanistic psychology of Abraham MASLOW, those motives that impel an individual to "character growth, character expression, maturation, and development," operating on the level of SELF-ACTUALIZATION and transcendence in the hierarchy of needs (see MASLOW'S MOTIVATIONAL HIERARCHY). In Maslow's view, metamotivation is distinct from the motivation operating in the lower level needs, which he calls DEFICIENCY MOTIVATION, and it emerges after the lower needs are satisfied. Also called **being motivation**; **B-motivation**; **growth motivation**. See also MASLOW'S THEORY OF HUMAN MOTIVATION.

**metaneed** *n.* in the humanistic psychology of Abraham MASLOW, the highest level of need that comes into play primarily after the lower level needs have been met. Metaneeds constitute the goals of self-actualizers and include the needs for knowledge, beauty, and creativity. In Maslow's view, the inability to fulfill them results in METAPATHOLOGY. Also called **being value**; **B-value**. See also MASLOW'S MOTIVATIONAL HIERARCHY; MASLOW'S THEORY OF HUMAN MOTIVATION.

**metapathology** *n.* in the humanistic psychology of Abraham MASLOW, the state of vague frustration or discontent experienced by individuals who are unable to satisfy their METANEEDS (e.g., specific creative, intellectual, or aesthetic needs). See also METAMOTIVATION; MASLOW'S THEORY OF HUMAN MOTIVATION.

**metaphor** *n.* a figure of speech (see FIGURATIVE LANGUAGE) in which a word or phrase is applied to an object, person, or action that it does not literally denote (e.g., *the journey of life*) for the purpose of creating a forceful analogy. If the analogy is explicitly stated as such (e.g., *life is like a journey*), the figure is not a metaphor but a **simile**. —**metaphorical** or **metaphoric** *adj.*

**metaphoric symbolism** see CRYPTOPHORIC SYMBOLISM.

**metaphor therapy** a system that focuses on the symbolic meaning of language and the use of metaphors in therapy. It is theorized that metaphors may provide means for restructuring thinking and approaches to problem solving in treatment. See also CRYPTOPHORIC SYMBOLISM. [developed by U.S. psychotherapist Richard R. Kopp (1942–2012)]

**metaphysics** *n.* the branch of philosophy that deals with the question of the nature of ultimate reality; as such, it is considered to be the most abstract and speculative branch of philosophy. Metaphysics was the founding project of Greek philosophy and thus of the Western intellectual tradition as a whole. The term derives from the Greek, meaning “above (or beyond) the physical.” Early metaphysical philosophy, most notably that of PLATO, suggested a reality above the physical world that accounts for and gives rise to physical reality (see PLATONIC IDEALISM). Later metaphysical conceptions have emphasized, as the ultimate foundation of reality, constructs as varied as mind, spirit, abstract principles, and physical matter. Since the time of René DESCARTES, the main focus of Western philosophy has shifted from metaphysics to EPISTEMOLOGY, the study of the nature and limitations of knowledge; this shift is largely owing to a recognition that meaningful answers to questions of ultimate reality depend upon the working out of criteria (an epistemology) by which such answers can be judged as true. Nevertheless, any scholarly discipline, including psychology, that makes a claim of discovering or explaining the ultimate nature or origin of a phenomenon may be said to be engaged in metaphysics. —**metaphysical** *adj.*

**metapsychics** *n.* **1.** the study of purported mental phenomena and abilities that are beyond the limits of orthodox psychological understanding, such as TELEPATHY and the survival of the human psyche after death. The term has now generally been superseded by PARAPSYCHOLOGY. **2.** people who are or appear to be exceptionally gifted in one or more paranormal abilities. See PSYCHIC.

**metapsychological profile** in psychoanalysis, a systematic profile of a patient's intrapsychic functioning, in contrast to a mere list of symptoms; such a profile offers a picture of his or her entire personality. The technique was developed by Anna FREUD in 1965.

**metapsychology** *n.* the study of, or a concern for, the fundamental underlying principles of any psychology. The term was used by Sigmund FREUD to denote his own psychological theory, emphasizing its ability to offer comprehensive explanations of psychological phenomena on a fundamental level. Freud's criteria for a metapsychology were that it should explain a psychical phenomenon in

terms of (a) its dynamics, (b) its topology, and (c) its economic aspects. Although these specific criteria apply most clearly to Freud's own theory, the notion of metapsychology as explanation at a fundamental and comprehensive level continues to be a useful construct. —**metapsychological** *adj.*

**metastasis** *n.* see CANCER.

**metatheory** *n.* a higher order theory about theories, allowing one to analyze, compare, and evaluate competing bodies of ideas. The concept of a metatheory suggests that theories derive from other theories, so that there are always prior theoretical assumptions and commitments behind any theoretical formulation. It follows that these prior assumptions and commitments are worthy of study in their own right, and an understanding of them is essential to a full understanding of derivative theories. —**metatheoretical** *adj.*

**metathetic** *adj.* **1.** denoting a stimulus dimension in which a change of magnitude can cause a qualitative change in the psychological experience produced. For example, a faint smell may be quite pleasing, whereas an increase in intensity may cause revulsion. Compare PROTHETIC. **2.** relating to a change in place or condition, particularly the transposition of two PHONEMES in a word or the exchange of elements between chemical compounds to create different kinds of compounds. —**metathesis** *n.*

**metaworry** *n.* **1.** persistent worry about one's own thoughts and cognitive processes. **2.** a negative metacognitive process in which one worries about one's own worrying and about its potentially harmful effects on oneself. According to British psychologist Adrian Wells, who first described this process in 1994, it contributes to the development of GENERALIZED ANXIETY DISORDER.

**metempirical** *adj.* describing or pertaining to knowledge that is not subject to verification by experience and thus cannot be established by the methods of science. As described by British writer George Henry Lewes (1817–1878), the metempirical is roughly equivalent to the notion of the transcendent developed by German philosopher Immanuel KANT (see NOUMENON; TRANSCENDENCE).

**metempsychosis** *n.* transmigration of the soul, whereby upon death a soul takes up residence in another body, human or animal. The belief is inherent in the doctrine of **samsara**, the cycle of birth, life, death, and rebirth, that is central to HINDUISM and BUDDHISM. An important and unanswerable issue attends the doctrine: the extent to which the reincarnated soul retains its memories and personality. In the ancient Western world, a similar belief in multiple lives was taught by Greek philosophers Pythagoras (c. 569–c. 475 BCE) and Empedocles (c. 493–c. 453 BCE). See also REINCARNATION.

**metencephalon** *n.* the portion of the BRAINSTEM that includes the PONS and CEREBELLUM. With the medulla oblongata, the metencephalon forms the HINDBRAIN. —**metencephalic** *adj.*

**meth** *n.* slang for METHAMPHETAMINE.

**methadone** *n.* a synthetic OPIOID ANALGESIC that is used for pain relief and as a substitute for heroin and other opioids in METHADONE MAINTENANCE THERAPY. It is quite effective when orally ingested and has a long duration of action, both preventing withdrawal symptoms and blocking the reinforcing effects of these opioids. U.S. trade name (among others): **Dolophine**.

**methadone maintenance therapy** a drug-rehabilitation therapy in which those with dependence on heroin and other opiates are prescribed a daily oral dose of methadone to blunt craving for these drugs and to diminish withdrawal symptoms. A controversial treatment, it is nonetheless widely considered the most effective approach to heroin addiction. The use of an opioid partial agonist, BUPRENORPHINE, particularly in combination with NALOXONE, is increasing as an alternative to methadone maintenance therapy.

**methamphetamine** *n.* a CNS STIMULANT whose chemical structure is similar to that of amphetamine. It is used for treating attention-deficit/hyperactivity disorder in children and as a short-term aid to obesity treatment in adults. Like all AMPHETAMINES, methamphetamine is prone to abuse and dependence. It can be smoked, snorted, ingested orally, or injected. After the initial rush—it increases activity levels and induces a general sense of well-being—a state of high agitation that can lead to violence is experienced by some users. Long-term abuse is associated with nerve damage and behavioral and mental status changes, including psychosis. U.S. trade name: **Desoxyn**.

**methaqualone** *n.* a synthetic drug with sedative and hypnotic effects, unrelated chemically to other sedatives and having a potency roughly equal to that of PENTOBARBITAL. It is used to treat patients who are unable to tolerate barbiturate drugs. In small doses, the drug depresses the sensory cortex; in larger doses, it affects the spinal reflexes. Its clinical use peaked during the 1960s and 1970s, but due to its potential for abuse—it became a popular recreational drug (street name: **lude**)—it was classified as a Schedule I controlled substance in 1984, which ended its legal availability in the United States. Trade name (among others): **Quaalude**. See SEDATIVE, HYPNOTIC, AND ANXIOLYTIC DRUG.

**methocarbamol** *n.* a member of a group of centrally acting MUSCLE RELAXANTS used as an adjunctive agent in the management of musculoskeletal pain. Because methocarbamol does not directly reduce skeletal muscle tension, its therapeutic action is thought to be due to its sedative or CNS DEPRESSANT properties. It is available in tablet and injectable forms. U.S. trade name: **Robaxin**.

**method of absolute judgment** a psychophysical procedure in which stimuli are presented in random order to a participant, whose task is to place each stimulus in a particular category. The stimuli usually vary along one or two dimensions, such as brightness or loudness. Also called **absolute-judgment method**.

**method of adjustment** a psychophysical technique in which the participant adjusts a variable stimulus to match a constant or standard. For example, the observer is shown a standard visual stimulus of a specific intensity and is asked to adjust a comparison stimulus to match the brightness of the standard. Also called **adjustment method**; **error method**; **method of average error**; **method of equivalents**.

**method of agreement** the first of the five canons of empirical science laid down by John Stuart MILL. It is meant to establish necessary conditions for a phenomenon. For example, if every instance of an effect E1 (E2, E3, etc.) had in common a particular condition C1, and it is observed that among all cases of E, only C1 and no other conditions (C2, C3, etc.) were common, it can be concluded that C1 is the necessary condition for E. See MILL'S CANONS.

**method of agreement and difference** the third of the five canons of empirical science laid down by John Stuart MILL. It enables the discovery of necessary and sufficient conditions for a phenomenon by combining the first two of MILL'S CANONS: the METHOD OF AGREEMENT and the METHOD OF DIFFERENCE.

**method of average error** see METHOD OF ADJUSTMENT.

**method of choice** a psychophysical procedure in which the participant is presented with several arrays of stimuli, one of which contains the target stimulus. The participant's task is to choose the array that contains the target stimulus.

**method of concomitant variation** the fifth of the five canons of empirical science laid down by John Stuart MILL. It is meant to establish the causal relationship between phenomena. It holds that if there is a functional relationship between a condition C1 and an effect E1, it may be inferred that there is a causal relationship between one or more of the elements that make up C1 and the resultant E1. Which element of C1 is causal can be established by implementing the rest of MILL'S CANONS. This strategy is essentially the foundation of modern approaches to experimentation in psychology and is directly related to the problems of inferring causality from correlation.

**method of constant adjustment** see METHOD OF LIMITS.

**method of constant stimuli** a psychophysical procedure for determining the sensory threshold by randomly presenting several stimuli known to be close to the threshold. The threshold is the stimulus value that was detected 50% of the time. Also called **constant stimulus method**; **method of right and wrong cases**. See also METHOD OF LIMITS.

**method of difference** the second of the five canons of empirical science laid down by John Stuart MILL. It is meant to establish sufficient conditions for a phenomenon. For example, if under one condition, C1, an effect, E1, does not occur, and as C1 is changed to C2 the effect E1 does occur, it may be concluded that C2 is a sufficient cause of E1, and the alternative hypothesis, that C1 causes E1, can be eliminated. Thus, the effect is attributed to the "difference" between conditions C1 and C2. Also called **difference canon**.

**method of equal and unequal cases** in psychophysics, a variation of the METHOD OF CONSTANT STIMULI requiring judgment of paired stimuli as equal or unequal.

**method of equal-appearing intervals** in psychophysics, a procedure in which magnitudes between pairs of stimuli are adjusted so that the differences between stimuli within each pair are perceived as equal. Also called **method of equal sense differences**; **method of mean gradations**.

**method of equivalents** see METHOD OF ADJUSTMENT.

**method of exclusion** a principle by which empirical observation can eliminate (or exclude) possible causes for a phenomenon and thereby reach conclusions about the true cause. The principle is attributed to Francis BACON, who proposed an inductive method (see INDUCTION) in which the observer lists both positive and negative instances of a phenomenon and then attempts to infer a common factor that is present in the positive instances and absent in the negative instances. Thus, the cause of the phenomenon is established by a method of exclusion of

negative instances. See BACONIAN METHOD. See also MILL'S CANONS.

**method of just noticeable differences** a psychophysical procedure to determine the smallest difference between stimuli that can be perceived. A standard stimulus is presented together with a variable stimulus whose magnitude is increased in some trials and decreased in others until a just perceptible difference between the stimuli is reported. The average of the two series is taken, and the threshold is calculated as the point where the difference can be recognized 50% of the time. Also called **method of serial exploration**.

**method of limits** a psychophysical procedure for determining the sensory threshold by gradually increasing or decreasing the magnitude of the stimulus presented in discrete steps. That is, a stimulus of a given intensity is presented to a participant; if it is perceived, a stimulus of lower intensity is presented on the next trial, until the stimulus can no longer be detected. If it is not perceived, a stimulus of higher intensity is presented, until the stimulus is detected. The threshold is the average of the stimulus values at which there is a detection-response transition (from *yes* to *no*, or vice versa). An alternative procedure, the **method of constant adjustment**, allows the participant to adjust a stimulus continuously until it can no longer be perceived. See also METHOD OF CONSTANT STIMULI.

**method of loci** a MNEMONIC technique in which the items to be remembered are converted into mental images and associated with specific positions or locations. For instance, to remember a shopping list, each product could be imagined at a different location along a familiar street.

**method of moments** an alternative to MAXIMUM LIKELIHOOD estimation in which values describing basic characteristics of a sample (known as MOMENTS) are used to approximate the corresponding values for the larger population. For example, a researcher could use the method of moments to estimate the mean or variance for a population by inserting the appropriate sample value into an equation that calculates one from the other. Although simpler than maximum likelihood, the method of moments is less accurate.

**method of opposition** see PROCESS-DISSOCIATION PROCEDURE.

**method of ratio estimation** a psychophysical procedure in which two stimuli of different intensity are presented, and the observer estimates the ratio of the perceived intensities.

**method of residues** the fourth of the five canons of empirical science laid down by John Stuart MILL. It is meant to establish sufficient conditions for a phenomenon through the elimination of alternative potential causes on the basis of previous experiments or already known laws. For example, if the phenomena E1 and E2 occur together having antecedents C1 and C2, and if it is known by prior research or established law that C1 cannot cause E2 but causes E1, one may conclude that C2 is the cause of E2. Also called **residue method**.

**method of right and wrong cases** see METHOD OF CONSTANT STIMULI.

**method of selective adaptation** a psychophysical procedure in which repeated exposure to a stimulus produces sensory adaptation that influences perception of a subsequent stimulus.

**method of serial exploration** see METHOD OF JUST NOTICEABLE DIFFERENCES.

**method of single stimuli** any psychophysical procedure in which items in a series are presented one at a time, and the participant is required to respond to each in the absence of any comparison point or standard.

**method of successive approximations** a method of shaping OPERANT BEHAVIOR by reinforcing responses similar to the desired behavior. Initially, responses roughly approximating the desired behavior are reinforced. Later, only responses closely approximating the desired behavior are reinforced. The process gradually leads to the desired behavior. Also called **successive-approximations method**.

**method of successive intervals** a psychophysical procedure in which respondents place stimuli into categories defined by their diminishing degree of possession of an attribute. Thus, the first category would contain all stimuli judged to have the most of the attribute, the second category would contain those stimuli judged to have slightly less of the attribute, and so forth.

**method of triads** any psychophysical procedure in which three stimuli are presented, and the observer must choose one of the three based on some property (e.g., its dissimilarity from the other two).

**methodological behaviorism** a form of BEHAVIORISM that concedes the existence and reality of conscious events but contends that the only suitable means of studying them scientifically is via their expression in behavior. Compare RADICAL BEHAVIORISM. See NEOBEHAVIORISM.

**methodological individualism** a theory that emphasizes the importance of each person in determining his or her own circumstances and minimizes any possible influence from larger societal groups or structures. For example, a researcher who endorsed methodological individualism would be less apt to consider how socioeconomic status might contribute to the level of achievement for a sample of individuals, preferring instead to investigate variables believed to be under each person's control, such as motivation, determination, or ability.

**methodological objectivism versus methodological subjectivism** a prescriptive dimension along which psychological theories can be evaluated. Methodological objectivism is the position that methods of investigation can be, and should be able to be, repeated and verified by another investigator. Methodological subjectivism is the position that methods cannot be repeated and thus cannot be verified by another. See also CONTENTUAL OBJECTIVISM VERSUS CONTENTUAL SUBJECTIVISM. [introduced by U.S. psychologist Robert I. Watson (1909–1980)]

**methodological pluralism** the belief that various approaches to conducting research, qualitative and quantitative, each have their respective strengths and weaknesses such that no one method is inherently superior to any other and no single method is best overall.

**methodological solipsism** the adoption of SOLIPSISM as a philosophical position because of the belief that no other position is tenable.

**methodological triangulation** the use of multiple quantitative and qualitative procedures to collect data so as to generate converging evidence on the topic of study. For example, a researcher studying alcohol consumption

might employ methodological triangulation by measuring participants' blood alcohol levels, collecting self-reports on quantity of alcohol consumed, and obtaining input from peers on quantity of alcohol consumed.

**methodology** *n.* 1. the science of method or orderly arrangement; specifically, the branch of logic concerned with the application of the principles of reasoning to scientific and philosophical inquiry. 2. the system of methods, principles, and rules of procedure used within a particular discipline. For example, in research and experimental design the term refers to the techniques used to collect information, and in statistics it refers to the procedures used to analyze such data.

**methods analysis** in ergonomics, the development of improved ways of performing a task, through analysis of the particular operation and its component tasks, techniques, factors, and resources. This typically involves use of process charts and micromotion studies and application of the principles of MOTION ECONOMY. See also TASK ANALYSIS.

**methotrimeprazine** *n.* a low-potency antipsychotic of the aliphatic PHENOTHIAZINE class. In the United States, it is currently used only for the treatment of pain. Also called **levomepromazine**. U.S. trade name: **Levoprome**.

**methoxyhydroxyphenylglycol (MHPG)** *n.* a product of the synthesis in vivo of endogenous epinephrine and norepinephrine levels. MHPG is found in the brain, blood, cerebrospinal fluid, and urine; its concentration reflects CATECHOLAMINE levels.

**methyl dopa** *n.* a drug used for treating hypertension. It acts as an agonist at ALPHA-ADRENERGIC RECEPTORS in brainstem centers that control the vascular system. When stimulated by methyl dopa, these receptors, which act via an inhibitory feedback mechanism, slow the release of catecholamines from central neurons involved in the regulation of blood pressure. U.S. trade name: **Aldomet**.

**3,4-methylenedioxyamphetamine** *n.* see MDA.

**3,4-methylene-dioxymethamphetamine** *n.* see MDMA.

**methylphenidate** *n.* a stimulant related to the AMPHETAMINES and with a similar mechanism of action. It is an INDIRECT AGONIST of catecholamine neurotransmission, blocking the reuptake of catecholamines from the synaptic cleft and stimulating presynaptic release of catecholamines. Unlike amphetamine, methylphenidate is more potent as a reuptake blocker than as a releasing agent. Methylphenidate is used as an adjunct to antidepressant therapy and to increase concentration and alertness in patients with brain injuries, brain cancer, or dementia. It is approved by the U.S. Food and Drug Administration for the treatment of attention-deficit/hyperactivity disorder (ADHD) and narcolepsy in both children and adults. In children with ADHD, methylphenidate increases attention and decreases impulsivity and physical overactivity, leading to improvement in academic and social functioning, at least while the drug is being administered. Potential long-term side effects include growth suppression, which may occur at least transiently in some children taking these drugs. It is not recommended to use methylphenidate or other stimulants in children without concurrent behavioral therapy or counseling. Methylphenidate has been used off-label by students and long-haul drivers to enhance attention and decrease fatigue. It is classified by the U.S. Drug Enforcement Administration as a Schedule II con-

trolled substance (see SCHEDULED DRUG). U.S. trade names (among others): **Concerta**; **Metadate**; **Ritalin**.

**methylphenyl-tetrahydropyridine** *n.* see MPTP.

**methylxanthine** *n.* any of a group of methylated derivatives of **xanthines** (stimulant plant alkaloids) with similar pharmacological actions. The most common are CAFFEINE (1,3,7-trimethylxanthine), the active ingredient in coffee; THEOBROMINE (3,7-dimethylxanthine), the active ingredient in cocoa; and **theophylline** (1,3-dimethylxanthine), the active ingredient in tea. At low doses, methylxanthines cause CNS stimulation and arousal; at high doses, anxiety, agitation, and coma may result. Methylxanthines also relax bronchial muscles: Some (e.g., theophylline) have been used in the medical management of reactive airway disease, although they have now largely been supplanted by newer agents.

**methysergide** *n.* an ERGOT DERIVATIVE used in the treatment of migraine headaches. It reduces the frequency and intensity of migraine attacks in most individuals and is thought to act by opposing the action of serotonin (see SEROTONIN ANTAGONIST). Methysergide is closely related to LSD and has similar effects at some tissue sites. Side effects of methysergide include light-headedness or dizziness, nausea or vomiting, euphoria, insomnia, and unsteadiness. U.S. trade name: **Sansert**.

**metonymy** *n.* 1. a figure of speech in which not the literal word but one associated with it is used, as *the sword* for *war*. **Synecdoche** is the form of metonymy in which a whole is represented by a part or vice versa, as in referring to a laborer as *a hand* or a police officer as *the police*. 2. in speech pathology, a disturbance in which imprecise or inappropriate words and expressions are used. —**metonymic** *adj.*

**Metrazol shock treatment** a form of SHOCK THERAPY involving the intravenous injection of Metrazol, a trade name for pentylenetetrazol, a powerful CNS STIMULANT that induces convulsions and coma. Because the incidence of fatality from this procedure was high, it was discontinued in the 1940s. Also called **Metrazol therapy**; **Metrazol treatment**. [introduced in 1934 by Hungarian psychiatrist Ladislav von Meduna (1896–1964)]

**metric** *n.* a scale or system used to express amount or quantity. For example, the Fahrenheit scale is a metric for assessing temperature and the system of IQ points is a metric for assessing intelligence.

**metronomic pacing** a technique of AUDITORY FEEDBACK to improve speaking performance, in which a portable device containing an electronic metronome is typically set between 50 and 150 beats per minute and the speaker receives pacing feedback through headphones as he or she speaks. Among those who benefit most are stutterers and those with MOTOR SPEECH DISORDERS.

**Meyer's loop** see OPTIC RADIATIONS. [Adolf MEYER]

**Meyer's theory** the theory proposed by Adolf MEYER that mental disorders result from behavior patterns that develop as faulty responses to specific situations. He advocated a holistic approach (see PSYCHOBIOLOGY) to diagnosis and treatment of mental disorders.

**Meynert's nucleus** see BASAL NUCLEUS OF MEYNERT. [Theodor H. Meynert (1833–1892), Austrian neurologist]

**MFF** abbreviation for MATCHING FAMILIAR FIGURES TEST.

**MHA** abbreviation for MENTAL HEALTH AMERICA.

**MHC** abbreviation for MAJOR HISTOCOMPATIBILITY COMPLEX.

**MHPG** abbreviation for METHOXYHYDROXYPHENYLGLYCOL.

**MHV** abbreviation for MILL HILL VOCABULARY SCALE.

**mianserin** *n.* an antidepressant with a mechanism of action similar to that of the related compound MIRTAZAPINE. Mianserin is marketed in several countries (e.g., under the trade name **Tolvon**) but not in the United States.

**Michelangelo phenomenon** a process in which relationship partners support each other's efforts toward achieving personally desired goals and particularly toward attaining an IDEAL SELF. Because committed partners must reconcile their personal goals with the needs and goals of their partners, partner encouragement or discouragement represents an important factor in how a person pursues a goal, as well as the likelihood of its attainment. [first identified in a 1999 article, "Close Partner as Sculptor of the Ideal Self," by U.S. social psychologists Stephen M. Drigotas (1966– ), Caryl E. Rusbult (1952–2010), and colleagues; their coinage refers to the artist Michelangelo's description of his sculptural work as releasing the beautiful form already present in a block of marble]

**Michigan Alcoholism Screening Test (MAST)** a widely used measure designed to provide a rapid screening for problematic alcohol consumption, alcohol abuse, and alcoholism. It comprises 25 yes–no questions, such as "Do you ever feel guilty about your drinking?" or "Are you able to stop drinking when you want to?" Various other forms of the instrument are available, including the 10-question **Brief MAST** (BMAST) and the 13-question **Short MAST** (SMAST). [developed in 1971 by U.S. psychiatrist Melvin L. Selzer at the University of Michigan, Ann Arbor]

**Mickey Finn** see KNOCKOUT DROPS.

**micro-** (**micr-**) *combining form* small.

**microaggression** *n.* brief and commonplace verbal, behavioral, or situational indignities that communicate hostile, derogatory, or negative slights or insults, especially toward members of minority or oppressed groups. Microaggression may be intentional (e.g., calling a transgender person a "she-male") or implicit (e.g., a White employee asking a Black colleague how he or she got a certain job, implying that the colleague may have obtained it through affirmative action or a quota system). Three subtypes have been identified: **microassaults**, which are purposefully discriminatory actions (e.g., uttering a racial slur, displaying a swastika); **microinsults**, which are subtle snubs that devalue a person's identity; and **microinvalidations**, which are unintentional exclusions or negations of an individual's thoughts, feelings, or experiences. Research on microaggression is limited but shows that this form of bias can cause recipients to feel that they are abnormal, inferior, invisible, powerless, or untrustworthy. [introduced in 1970 by U.S. psychiatrist Chester M. Pierce (1927– ); the subtypes were proposed in 2007 by U.S. psychologist Derald Wing Sue]

**microcephaly** *n.* a condition in which the circumference of the head is more than two standard deviations below the mean for age, gender, race, and gestation. It may be present at birth or develop in the first few years of life. The condition is associated with DOWN SYNDROME and other chromosomal syndromes; neurometabolic syndromes; MATERNAL PKU; and prenatal exposure to drugs or alcohol, cytomegalovirus, rubella (German measles), vari-

cella (chicken pox) virus, and certain toxic chemicals. Depending on the severity of their accompanying syndrome, children with microcephaly may have intellectual disability, delayed motor functions and speech, facial distortions, dwarfism or short stature, hyperactivity, seizures, difficulties with coordination and balance, and other brain or neurological abnormalities. Some children with microcephaly will have normal intelligence and a head that will grow bigger, although it will still be below the normal growth curves for head circumference. See also PRIMARY MICROCEPHALY. Compare MACROCEPHALY. —**microcephalic** *adj.*

**microcounseling** *n.* a concentrated training approach originally designed to teach basic counseling skills to trainees in the helping professions (e.g., counseling, clinical psychology). Trainees apply specific, single skills (e.g., attending behavior, basic listening) in 5-minute videotaped sessions with volunteer clients, then view the video while receiving didactic instruction and feedback from a trainer, and then undergo a second round of videotaped skills application and subsequent review and instruction. The approach became a formal training program in the 1960s, founded on several principles, among them OBSERVATIONAL LEARNING and REHEARSAL. It has since evolved to become a professional training paradigm for teaching techniques in specific types of therapies (e.g., cognitive behavior therapy, multicultural therapy), a conceptual framework for understanding the counseling process itself, and a method for teaching effective communication skills directly to clients (e.g., in CONJOINT THERAPY). Also called **microteaching**; **microtraining**. [developed by U.S. counseling psychologist Allen E. Ivey (1933– )]

**microdata** *pl. n.* **1.** scores or other information collected on individual participants or units. In many research studies, microdata are consolidated into total scores, scale scores, or summary statistics known as AGGREGATE DATA. **2.** terms or codes used to elucidate the content of webpages, particularly ones based on hypertext markup language (HTML). Microdata help search engines identify webpage information relevant to the topic of interest and present it to users.

**microdialysis** *n.* a method for measuring the concentration of chemicals in a tissue or organ (e.g., a small region of brain) by allowing the chemicals to pass through a membrane into a small tube implanted in the interstitial space.

**microelectrode** *n.* an electrode with a tip no larger than a few micrometers in diameter that can be inserted into a single cell. In the **microelectrode technique**, used in studies of neurophysiology and disorders of the nervous system, intracellular microelectrodes with tips less than 1  $\mu\text{m}$  in diameter are able to stimulate and record activity within a single neuron (**single-cell** or **single-unit recording**). Compare MACROELECTRODE.

**microergonomics** *n.* an approach to ERGONOMICS that focuses on the detailed examination of individual operator–machine interfaces or combinations. Compare MACROERGONOMICS.

**microfilament** *n.* a very small protein filament (7 nm in diameter) found within all cells. Microfilaments are key components of the cell's internal scaffolding (cytoskeleton) and help to determine cell shape.

**microgenetic development** the series of changes that occur over relatively brief periods of time—in seconds,

minutes, or days—as distinct from the larger scale changes that are conventionally studied in ontogenetic development (see ONTOGENY). [postulated by Lev VYGOTSKY in his sociocultural theory]

**microgenetic method** a research methodology for studying cognitive developmental change, involving (a) observations of individual children throughout a period of change, (b) a high density of observations relative to the rate of change within that period, and (c) intensive trial-by-trial analyses intended to infer the processes that gave rise to the change. [developed by U.S. developmental psychologist Robert S. Siegler (1949– )]

**microglia** *n.* an extremely small type of nonneuronal central nervous system cell (GLIA) that removes cellular debris from injured or dead cells. —**microglial** *adj.*

**microglossia** *n.* the condition of having an abnormally small tongue. Although relatively rare, the condition may occur during prenatal development and result in speech that sounds muffled.

**micrographia** *n.* a disorder characterized by very small, often unreadable writing and associated most often with PARKINSON'S DISEASE.

**micromastia** *n.* abnormally small breasts in a female.

**micromelia** *n.* a birth defect marked by abnormal shortness or smallness of the limbs.

**microorchidism** *n.* abnormally small size of one or both testicles, as in KLINEFELTER'S SYNDROME. Also called **microorchidia**.

**microphonia** *n.* see HYPOPHONIA.

**micropolygyria** *n.* see LISSENCEPHALY.

**micropsia** *n.* a VISUAL ILLUSION in which an object appears to be smaller than it is in reality. See also METAMORPHOSIA. Compare MACROPSIA.

**micropsychosis** *n.* psychotic episodes of very brief duration (minutes to hours) that occur during times of stress. Micropsychoses have been observed primarily in BORDERLINE PERSONALITY DISORDER and PSEUDONEUROTIC SCHIZOPHRENIA, although the latter is no longer a valid diagnostic entity.

**microptic hallucination** see LILLIPUTIAN HALLUCINATION.

**microsaccades** *pl. n.* small rapid eye movements that occur during attempted fixation of a target and cease when fixation is achieved.

**microscopic level** an investigative approach that focuses on the smallest recognizable units of analysis. Microscopic psychology is sometimes associated with physiological psychology at the cellular level.

**microsleep** *n.* a momentary loss of awareness when a person is fatigued or sleep-deprived, especially during monotonous tasks, such as driving, looking at a computer, or passively monitoring machinery. Microsleep episodes may be noticed when the head literally drops forward and can last from less than 1 second to minutes. They are more likely to occur in the predawn and midafternoon hours and can be a major risk factor for traffic and industrial accidents.

**microsmia** *n.* see HYPOSMIA.

**microsocial engineering** a technique of conflict resolution among family members in which a BEHAVIOR CON-

TRACT is established through a specific schedule of responsibilities, privileges, sanctions for violations, and bonuses for compliance.

**microspectrophotometer** *n.* a device that enables the absorption of light across the spectrum to be measured as the light passes through a small sample. A microspectrophotometer is used to determine the absorption spectrum of PHOTOPIGMENTS in retinal rods and cones.

**microsplanchic type** a constitutional type characterized by a small abdomen and an elongated body. Also called **microsplanchic build**. [described by Italian physician Giacinto Viola (1870–1943)]

**microsystem** *n.* see MESOSYSTEM.

**microtome** *n.* a device for cutting thin sections (slices) of tissue, used, for example, in preparing brain sections for microscopic examination. Compare CRYOSTAT.

**microtraining** *n.* see MICROCOUNSELING.

**microtubule** *n.* a small, hollow, cylindrical structure (typically 20 nm–26 nm in diameter), numbers of which occur in various types of cell. Microtubules are part of the cell's internal scaffolding (cytoskeleton) and form the spindle during cell division. In neurons, microtubules are involved in AXONAL TRANSPORT.

**microvillus** *n.* (*pl.* **microvilli**) a slender, minute structure projecting from the surface of a cell. For example, in taste perception, a microvillus is the hairlike extension of each TASTE CELL that projects through the pore of a TASTE BUD to sample the environment. Although a microvillus accounts for only 3% of the surface area of a taste cell, it is studded with receptor proteins that recognize specific molecules and is the site of TASTE TRANSDUCTION.

**micturition** *n.* see URINATION. —**micturate** *vb.*

**micturition reflex** reflex contraction of the bladder in response to signals from its STRETCH RECEPTORS. During development, a child learns to suppress the micturition reflex and to control urination. Also called **bladder reflex**.

**midazolam** *n.* a highly potent, short-acting BENZODIAZEPINE used chiefly for the induction of anesthesia or conscious sedation for operative procedures. It is available in a form for intravenous or intramuscular administration and as a syrup for oral administration. Because of its potential to induce respiratory depression (particularly when used as a sedating agent in nonsurgical situations), its short HALF-LIFE, and the need for continuous monitoring of respiratory and cardiac function, midazolam has little, if any, application in mental health settings. It has reportedly been used as a DATE-RAPE DRUG. U.S. trade name: **Versed**.

**midbrain** *n.* a relatively small region of the upper brainstem that connects the FOREBRAIN and HINDBRAIN. It contains the TECTUM (and associated inferior and superior COLLICULI), TEGMENTUM, and SUBSTANTIA NIGRA. Also called **mesencephalon**.

**middle cerebral artery** the largest branch of the INTERNAL CAROTID ARTERY, running first through the LATERAL SULCUS and then upward on the surface of the INSULA. Here it divides into several branches, including the ANTERIOR CHOROIDAL ARTERY, which spread over the lateral surface of the cerebral hemispheres.

**middle-child syndrome** a hypothetical condition purported to be shared by all middle-born children, based on the assumption that middle children in a family develop



personality characteristics that are different from first-born and later born children. Current research indicates that a child's birth order in a particular family may have small, subtle influences on personality and intelligence but not strong and consistent effects on psychological outcomes. See also BIRTH ORDER.

**middle class** a general socioeconomic class in the middle of a social hierarchy. In economic terms, it is sometimes held to consist of an upper middle class of professionals, administrators, and middle-level executives and a lower middle class of shopkeepers, artisans, clerical staff, and service workers. The latter, although still relatively materially privileged, are often not positioned as advantageously in the power structure of a society. Also called **bourgeoisie**. See SOCIAL CLASS; SOCIOECONOMIC STATUS.

**middle cranial fossa** see FOSSA.

**middle ear** a membrane-lined cavity in the temporal bone of the skull. It is filled with air and communicates with the nasopharynx through the EUSTACHIAN TUBE. It contains the OSSICLES, which transmit sound vibrations from the outer ear and the tympanic membrane (eardrum) to the OVAL WINDOW of the inner ear. Also called **tympanic cavity**.

**middle insomnia** a period of sleeplessness that occurs after falling asleep normally, with difficulty in falling asleep again. It is a common symptom of a MAJOR DEPRESSIVE DISORDER. Also called **broken sleep**. Compare INITIAL INSOMNIA; TERMINAL INSOMNIA. See also SEGMENTED SLEEP.

**middle knowledge** a cognitive state in which terminally ill people acknowledge yet cannot completely comprehend their mortal danger. Selective attention, denial, resistance, or some other protective strategy tends to be used more or less intensively depending on many factors, including physical condition, security within close relationships, and the ability to integrate the prospect of death into the overall evaluation of one's life. [introduced by U.S. psychiatrist Avery D. Weisman]

**middle temporal gyrus (MTG)** a ridge or convolution found on the temporal lobe, situated between the superior and inferior temporal gyri. It may have roles in recognizing familiar faces, comprehending language, and visually assessing whether an action is rational. Also called **medial (or median) temporal gyrus**.

**midget** *n.* see DWARFISM.

**midget bipolar cell** a RETINAL BIPOLAR CELL that connects to only one RETINAL CONE. Compare DIFFUSE BIPOLAR CELL.

**midlife crisis** a period of psychological distress thought to occur in some individuals during the middle years of adulthood, roughly from ages 35 to 65. Causes may include significant life events and health or occupational problems and concerns. However, no empirical data exist to support the notion that this distress is specific to midlife, and many researchers consider the midlife crisis a myth. See also AGE CRISIS. [coined in 1965 by Canadian consulting organizational psychologist Elliot Jaques (1917–2003)]

**midline** *n.* a bisecting or median line, especially in reference to an imaginary median line or plane through the body or a part of the body.

**midparent** *adj.* describing an average measure of both parents with regard to height, intelligence, or other characteristics.

**midpoint** *n.* see MEDIAN.

**midrange** *n.* the average of the lowest and highest scores in a set of data. The midrange is a measure of CENTRAL TENDENCY more prone to bias than the MEAN, MEDIAN, and MODE because it relies solely upon the two most extreme scores, which potentially are OUTLIERS. For example, consider the following hours per week spent using a computer for five individuals: 6, 10, 15, 21, and 35. The midrange is 20.5, the mean is 17.4, and the median is 15. The midrange score thus is larger than the mean or median due to the influence of the outlier of 35 hours.

**midsread** *n.* see INTERQUARTILE RANGE.

**midwife** *n.* a professionally trained and licensed health care provider of primary medical services for women, including perinatal (prenatal, delivery, and postpartum) care for pregnant women and new mothers and most family planning and gynecological services for healthy women of all ages. Midwives work together with obstetrics and gynecology (OB/GYN) doctors. They either consult with or refer to other health care providers in cases that are outside of their expertise (e.g., high-risk pregnancies, pregnant women with a chronic illness). Compare DOULA. —**midwifery** *n.*

**Mignon delusion** a variation of the family-romance fantasy in which children believe that their parents are actually foster parents and their real families are of distinguished lineage. The name is derived from the child character in the novel *Wilhelm Meister's Apprenticeship* (1796) by Johann Wolfgang von Goethe (1749–1832).

**migraine headache** a headache that is recurrent, usually severe, usually limited to one side of the head, and likely to be accompanied by nausea, vomiting, and PHOTO-PHOBIA. Migraine headaches may be preceded by an AURA of flickering or flashing light, blacking out of part of the visual field, or illusions of colors or patterns. They are much more common in women than in men. Also called **sick headache**.

**Migranal** *n.* a trade name for DIHYDROERGOTAMINE.

**migration** *n.* **1.** travel by nonhuman animals over relatively long distances to or from breeding areas. Migration is observed in birds, fish, and some mammals and insects (among others). In some species, it is seasonal, involving movement from a breeding area to an overwintering area; in others, particularly the salmon, it is observed only once in the lifetime of an individual. Factors influencing migratory behavior include chemical cues, pituitary or other hormones, relative change in day length, and temperature. See also MIGRATORY RESTLESSNESS; NAVIGATION. **2.** in the development of the nervous system, the movement of nerve cells from their origin in the ventricular zone to establish distinctive cell populations, such as brain nuclei and layers of the cerebral cortex.

**migratory restlessness** increased activity that occurs prior to the period of migration. Migratory restlessness in captive animals is an index of responsiveness to cues indicating ANNUAL CYCLES. Also called **Zugunruhe**.

**MIH** abbreviation for MÜLLERIAN-INHIBITING HORMONE.

**mild cognitive impairment (MCI)** a decline in cognitive function that is small but detectable and that represents a transitional condition between the cognitive changes typically associated with normal aging and those changes that meet the criteria for DEMENTIA. One or more

cognitive domains may be impaired but not significantly enough to affect everyday functioning. At least two subtypes of MCI have been identified. One is **amnesic MCI**, or clinically significant memory loss experienced by individuals whose other cognitive capacities (e.g., EXECUTIVE FUNCTION, language use) are largely intact; such individuals are at increased risk for developing dementia due to ALZHEIMER'S DISEASE. The other subtype, **nonamnesic MCI**, is characterized by impairments in visuospatial skills, language use, or other cognitive functions besides memory; individuals with this subtype may be at risk for other forms of dementia (e.g., dementia due to Lewy body disease).

**mild mental retardation** an older diagnostic and classification category applying to those with IQs of 50 to 69, comprising 85% of people with MENTAL RETARDATION. These individuals usually develop good communication skills and reach a sixth-grade level of academic performance in their late teens, but they may not develop beyond the social skill levels typical of adolescents. Usually, they are able to learn life and vocational skills adequate for basic self-support and independent living.

**milieu** *n.* (*pl. milieux*) **1.** the environment in general. **2.** in psychology and psychiatry, the social environment, especially the atmosphere and character of the home, neighborhood, school, workplace, and so on as they affect the personality and adjustment of the individual.

**milieu therapy** psychotherapeutic treatment based on modification or manipulation of the client's life circumstances or immediate environment. Milieu therapy attempts to organize the social and physical setting in which the client lives or is being treated in such a way as to promote healthier, more adaptive cognitions, emotions, and behavior. See also ENVIRONMENTAL THERAPY; THERAPEUTIC COMMUNITY.

**military environment** factors that affect human performance in military operations. Performance may be compromised by exposure to extreme weather conditions (ranging from excessive heat to extreme cold); other factors include the effects of clothing and equipment in different environments, motivational and attitudinal factors, acclimatization, the size of the unit involved, and the quality of its leadership.

**military officer selection** the selection and assessment of military personnel considered suitable to carry the special responsibilities associated with being an officer. The assessment techniques used by applied psychologists involve evaluation of an individual's academic qualifications, use of psychological instruments in recognized assessment centers, and construct-oriented psychological assessment.

**military peacekeeping** military operations that, with the consent of the belligerent parties in a conflict, are conducted to maintain a negotiated truce and to facilitate a diplomatic resolution. Peacekeeping operations may include withdrawal and disengagement, ceasefire, prisoner-of-war exchanges, arms control, demilitarization, and demobilization. Military peacekeeping is frequently carried out on a multinational basis.

**Military Personnel Management** a strategic global framework proposed by the U.S. Department of Defense for achieving an accurate accounting of deployed personnel. It concentrates on identifying and eliminating waste, avoiding duplication, and reducing costs in military establishments.

**military psychology** the application of psychological

principles, theories, and methods to the evaluation, selection, assignment, and training of military personnel, as well as to the design of military equipment. This field of applied psychology also includes the application of clinical and counseling techniques to the maintenance of morale and mental health in military settings and covers human functioning in a variety of environments during times of peace and war.

**military stress factors** circumstances that potentially affect the number of military personnel that become STRESS CASUALTIES, including the nature of the operation in which they are involved; the intensity of the conflict; the number of battle casualties occurring; and the size, cohesion, and leadership of the unit in which they are serving.

**Military Testing Association** see INTERNATIONAL MILITARY TESTING ASSOCIATION.

**milk letdown reflex** in mothers who are NURSING, an automatic release of milk from sacs within the MAMMARY GLANDS in response to infant suckling or associated stimuli (e.g., the infant's cry). The milk letdown reflex is regulated by the hormone OXYTOCIN: Suckling stimulates the production of oxytocin, which in turn stimulates contractions of the smooth muscle myoepithelial cells surrounding the mammary glands, leading to the expulsion of milk from the sacs into ducts that converge on the nipples. The actual production of milk by the mammary glands is regulated by the hormone PROLACTIN. Also called **milk ejection reflex**.

**millenarianism** *n.* **1.** belief in the imminent end of human history, to be followed by a thousand-year period of peace and blessedness (often associated with the Second Coming of Christ). Such beliefs were current in the early Christian church and appeared sporadically, primarily from the 11th through the 17th centuries, in periods of political or intellectual crisis and among marginalized groups. Some groups proclaim similar beliefs but without the language and imagery of Christianity. **2.** by extension, any belief that rapid and violent change can lead to a golden age of justice and peace. —**millenarian** *adj.*

**Miller Analogies Test (MAT)** a test designed to measure the ability to understand relationships between ideas and to think analytically. It has been used since 1926 to predict scholastic ability at the graduate school level as well as in hiring and promotion decisions in the workplace. The MAT is composed of 120 partial analogies that require knowledge in many different areas, including sciences, literature, the arts, history, and vocabulary. Participants complete the analogies, only 100 of which are scored, by choosing the appropriate answer from among four options. [Wilford Stanton **Miller** (1883–1960), U.S. psychologist]

**Miller–Mowrer shuttle box** an apparatus for studying escape and avoidance learning. It consists of a straight alley with a guillotine door at its midpoint and a grid floor that can be electrified independently in each half. The experimental animal can avoid the aversive stimulus (an electric shock) by moving to the opposite end of the box but must do so within a given time. [Neal E. **MILLER** and O. Hobart **MOWRER**]

**Mill Hill Vocabulary Scale (MHV)** a measure of crystallized abilities (see CATTELL–HORN THEORY OF INTELLIGENCE) designed to be administered in conjunction with RAVEN'S PROGRESSIVE MATRICES. It consists of 88 words and is available in three forms: one requiring participants to define all words, one requiring participants to recognize the meanings of all words by choosing the correct synonym for

each from among six options, and one requiring participants to define half of the words and choose synonyms for the rest. [originally developed in 1943 by British psychologist John C. Raven (1902–1970) at **Mill Hill** Emergency Hospital, London]

**milling crowd** an AGGREGATION of individuals, usually gathered in a public area (e.g., a street or concourse), whose members seem to be moving restlessly or aimlessly about the area.

**Millon Clinical Multiaxial Inventory (MCMI)** a true–false questionnaire, consisting of 175 items, that is widely used to assess clinical conditions and personality disorders in psychiatric patients in the United States. First published in 1977, it has been revised twice; the most recent version, **MCMI–III**, includes 24 scales arranged into four groups: clinical personality patterns, severe personality pathology, clinical syndromes, and severe clinical syndromes. Additionally, there are four corrections scales to help detect random or dishonest responding. **BASE RATE** scores are used in interpreting results. [Theodore **MILLON**]

**Mill's canons** a set of five principles of sound experimental science proposed by John Stuart **MILL**. These principles outline the logical conditions under which observations can establish necessary and sufficient causal relationships between events. Because each of the principles enables the observer to eliminate potential causes, the general approach is often referred to as eliminative induction. **Mill's** work in this area is related to both the **METHOD OF EXCLUSION** described by Francis **BACON** and the work on the logic of causality of David **HUME**. It also presages the **FALSIFICATIONISM** of Austrian-born British philosopher Karl Popper (1902–1994). **Mill's** five canons are (a) the **METHOD OF AGREEMENT**, (b) the **METHOD OF DIFFERENCE**, (c) the **METHOD OF AGREEMENT AND DIFFERENCE**, (d) the **METHOD OF RESIDUES**, and (e) the **METHOD OF CONCOMITANT VARIATION**.

**Miltown** *n.* a trade name for MEPROBAMATE.

**mimetic** *adj.* relating to imitation, as in a young chimpanzee's imitation of its parent's actions or a parrot imitating the words of its owner. A **mimetic response** is a copying or imitative response. Mimetic can also refer to physical features, such as the pseudopenis of the female spotted hyena, which is an enlargement of the clitoris and vagina through which mating and birth are accomplished. —**mimesis** *n.*

**mimicry** *n.* **1.** the presence of physical or behavioral traits in one species that so closely resemble those of another species that they confuse observers. This resemblance makes it possible for an organism either to evade predators (see **BATESIAN MIMICRY**; **MÜLLERIAN MIMICRY**) or to attract prey (see **AGGRESSIVE MIMICRY**). **2.** a form of **SOCIAL LEARNING** in which people, without conscious awareness or intent, automatically copy other people's physical movements (behaviors such as postures, gestures, and mannerisms), facial expressions, speech patterns, and emotions during interpersonal interactions. It is thought that the behavioral form in particular, called **behavioral mimicry**, arises out of the need to affiliate and facilitates an effort to establish rapport with others. See also **EMULATION**; **IMITATION**; **LOCAL ENHANCEMENT**.

**mind** *n.* **1.** broadly, all intellectual and psychological phenomena of an organism, encompassing motivational, affective, behavioral, perceptual, and cognitive systems; that is, the organized totality of an organism's **MENTAL** and **PSYCHIC** processes and the structural and functional cognitive

components on which they depend. The term, however, is also used more narrowly to denote only cognitive activities and functions, such as perceiving, attending, thinking, problem solving, language, learning, and memory. The nature of the relationship between the mind and the body, including the brain and its mechanisms or activities, has been, and continues to be, the subject of much debate. See **MIND–BODY PROBLEM**; **PHILOSOPHY OF MIND**. **2.** the substantive content of such mental and psychic processes. **3.** consciousness or awareness, particularly as specific to an individual. **4.** a set of **EMERGENT PROPERTIES** automatically derived from a brain that has achieved sufficient biological sophistication. In this sense, the mind is considered more the province of humans and of human consciousness than of organisms in general. **5.** human consciousness regarded as an immaterial entity distinct from the brain. See **CARTESIAN DUALISM**; **GHOST IN THE MACHINE**. **6.** the brain itself and its activities. In this view, the mind essentially is both the anatomical organ and what it does. **7.** intention or volition. **8.** opinion or point of view. **9.** the characteristic mode of thinking of a group, such as the criminal mind or the military mind.

**mindblindness** *n.* **1.** a deficit in **THEORY OF MIND** that is characteristic of people with autism. A person with mindblindness cannot “read the minds” of others—that is, understand their behavior in terms of **BELIEF–DESIRE REASONING**. [described by British psychologist Simon Baron-Cohen (1958– )] **2.** an obsolete name for **VISUAL AGNOSIA**. [coined in 1881 by Polish-born German physiologist Hermann Munk]

**mind–body intervention** therapeutic approaches that focus on harnessing the power of the mind to bring about change in the body or achieve reduction of symptoms of disease or disorder. The various techniques used include relaxation training (e.g., **AUTOGENIC TRAINING**, **PROGRESSIVE RELAXATION**), **MEDITATION**, prayer, and **CREATIVE ARTS THERAPY**. See also **COMPLEMENTARY AND ALTERNATIVE MEDICINE**.

**mind–body problem** the problem of accounting for and describing the relationship between mental and physical processes (psyche and soma). Solutions to this problem fall into six broad categories: (a) **INTERACTIONISM**, in which mind and body are separate processes that nevertheless exert mutual influence (see **CARTESIAN DUALISM**); (b) **PARALLELISM**, in which mind and body are separate processes with a point-to-point correspondence but no causal connection (see **OCCASIONALISM**; **PREESTABLISHED HARMONY**); (c) **IDEALISM**, in which only mind exists and the soma is a function of the psyche; (d) **DOUBLE-ASPECT THEORY**, in which body and mind are both functions of a common entity (see **NEUTRAL MONISM**); (e) **EPIPHENOMENALISM**, in which mind is a by-product of bodily processes; and (f) **MATERIALISM**, in which body is the only reality and the psyche is nonexistent. Categories (a) and (b) are varieties of **DUALISM**; the remainder are varieties of **MONISM**. In the context of psychopathology, two central questions arising from the mind–body problem are which sphere takes precedence in the genesis and development of illness and how does each sphere affect the other. Also called **body–mind problem**.

**mind–brain–education (MBE)** see **NEUROEDUCATION**.

**mind control** **1.** an extreme form of social influence used to indoctrinate an individual in the attitudes and beliefs of a group, usually one that is religious or political in nature. See **BRAINWASHING**; **COERCIVE PERSUASION**. **2.** the control of physical activities of the body, particularly auto-

nostic functions, by mental processes. See AUTOGENIC TRAINING; BIOFEEDBACK. See also MIND—BODY INTERVENTION.

**mindfulness** *n.* awareness of one's internal states and surroundings. The concept has been applied to various therapeutic interventions—for example, mindfulness-based COGNITIVE BEHAVIOR THERAPY, mindfulness-based stress reduction, and MINDFULNESS MEDITATION—to help people avoid destructive or automatic habits and responses by learning to observe their thoughts, emotions, and other present-moment experiences without judging or reacting to them. —**mindful** *adj.*

**mindfulness meditation** a type of MEDITATION in which a person focuses attention on his or her breathing and thoughts, feelings, and sensations are experienced freely as they arise. Mindfulness meditation is intended to enable individuals to become highly attentive to sensory information and to focus on each moment as it occurs. See also TRANSCENDENTAL MEDITATION. Compare CONCENTRATIVE MEDITATION.

**mind reading** a form of alleged EXTRASENSORY PERCEPTION in which an individual claims to have access to the thoughts of another person. With THOUGHT TRANSFERENCE, it is one of the two main forms of TELEPATHY.

**mind-set** *n.* a state of mind that influences how people think about and then enact their goal-directed activities in ways that may systematically promote or interfere with optimal functioning. German psychologist Peter Gollwitzer (1950– ) identified two types: (a) a **deliberative mind-set**, in which a person debates the merits and drawbacks of various courses of action (or inaction) when choosing a goal to pursue from a set of possible goals; and (b) an **implemental mind-set**, in which a person has made the choice and execution of particular actions to realize chosen goals. Mind-sets sometimes generalize from one activity to later, unrelated activities.

**mind's eye** the mind's capacity to recall or create images based on visual experience. See VISUAL IMAGERY.

**mindsight** *n.* a proposed but controversial mode of non-conscious or semiconscious vision that may permit visual decision making in the absence of fully conscious visual perception. Research on mindsight has arisen out of work on CHANGE BLINDNESS. [proposed by Canadian psychologist and computer scientist Ronald A. Rensink]

**mind stuff** in the philosophy of British mathematician William K. Clifford (1845–1879), the single substance that constitutes reality; this consists internally of mind but appears externally in the form of matter. His argument, from evolution, was that since consciousness exists in human-kind, and humankind evolved from matter, matter must also possess consciousness. Clifford's position is often taken to be one of PANPSYCHISM.

**mind wandering** a condition in which thoughts do not remain focused on the task at hand but range widely and spontaneously across other topics. It tends to occur during tasks that do not require sustained attention. Mind wandering cannot be scientifically quantified but has been studied using THOUGHT SAMPLING and questionnaires. Research questions include how much mind wandering is a stable personality trait, how much it is linked to mood and situation, and how it relates to processing capacity and working memory. The contents of mind wandering are often referred to as **task-unrelated thoughts (TUTs)**, **task-unrelated images and thoughts (TUITs)**, or **stimulus-inde-**

**pendent and task-unrelated thoughts (SITUTs)**. See also ABSENT-MINDEDNESS; INTRUSIVE THOUGHTS.

**mineralocorticoid** *n.* any CORTICOSTEROID hormone that affects ion concentrations in body tissues and helps to regulate the excretion of salt and water. In humans, the principal mineralocorticoid is ALDOSTERONE.

**MINERVA 2** a GLOBAL MEMORY MODEL that describes, in mathematical form, memory for both individual experiences (see EPISODIC MEMORY) and abstract generic facts (see SEMANTIC MEMORY). The model postulates that each experience leaves a MEMORY TRACE, and repetition creates multiple copies rather than strengthening a single trace. Memory retrieval activates the sum of all relevant traces. [proposed by Douglas L. Hintzman (1941– )]

**miniature end-plate potential** see END PLATE.

**miniature system** the organized, integrated knowledge, including facts, assumptions, and theories or hypotheses, relating to a restricted area of study. An example is the theory that explains a particular perceptual phenomenon, such as the MÜLLER-LYER ILLUSION.

**minimal audible field (MAF)** the threshold for a tone presented in a sound field to a participant who is not wearing headphones. The participant faces the sound source, and the threshold intensity is measured at the midpoint of the head. In this procedure, the sound pressure is presented in an open space free of echoes, rather than directly at the eardrum. Also called **minimum audible field**.

**minimal audible pressure (MAP)** the level of a tone presented via headphones at the threshold of audibility. The level (in decibels sound-pressure level) is the inferred or measured pressure at the tympanic membrane. Also called **minimum audible pressure**.

**minimal brain dysfunction (MBD)** **1.** a relatively mild impairment of brain function that is presumed to account for a variety of SOFT SIGNS seen in certain learning or behavioral disabilities. These signs include short attention span, distractibility, impulsivity, hyperactivity, emotional lability, poor motor coordination, visual-perceptual disturbance, and language difficulties. Also called **minimal brain damage**; **minimal cerebral dysfunction**. **2.** an obsolete name for ATTENTION-DEFICIT/HYPERACTIVITY DISORDER.

**minimal group** **1.** a group lacking interdependence, GROUP COHESION, structure, and other characteristics typically found in social groups. An example is a group of people disembarking from a bus. **2.** a type of zero-history NOMINAL GROUP assembled and studied in the MINIMAL INTERGROUP SITUATION. It has been found that individuals in such groups respond in biased ways when allocating resources to INGROUP and OUTGROUP members, even though the groups are not psychologically or interpersonally meaningful. [introduced by Polish-born British social psychologist Henri Tajfel (1919–1982)]

**minimal intergroup situation** **1.** any situation involving contact between two or more MINIMAL GROUPS, as when a group of individuals disembarking from a bus mingles with a group of individuals getting on the bus. **2.** a research procedure, used mainly in studies of INTERGROUP CONFLICT, that involves creating temporary groupings of anonymous people whose interdependence is virtually nil. Also called **minimal group paradigm**. [developed by Polish-born British social psychologist Henri Tajfel (1919–1982)]

**minimally conscious state (MCS)** a condition in which a person who has experienced severe brain injury or deterioration retains a limited awareness of self and environment through residual cognitive functions. The individual is awake and occasionally able to communicate and do simple voluntary activities that demonstrate an engagement with surroundings. For example, he or she may produce intelligible verbalizations (e.g., saying *yes* or *no*), follow simple commands (e.g., blinking when asked), gesture, track moving targets, grasp objects, or otherwise purposely respond to stimuli. Given that diagnosis is based on observations by clinicians of subtle, functionally useful behaviors over an extended period of time, MCS is difficult to distinguish from a **VEGETATIVE STATE** (wakefulness without any awareness). Despite the similar clinical presentations of the two conditions, research using **BRAIN IMAGING** and **EVENT-RELATED POTENTIALS** reveals them to be quite different neurologically. Formerly called **minimally responsive state**; **quasi-vegetative state**.

**minimal pair** in linguistics, two forms that differ in just one phonological feature, thereby illustrating the critical contrastive role played by that feature. In English, for example, the spoken forms [pin] and [bin] are a minimal pair that serve to identify /p/ and /b/ as distinct **PHONEMES**. See **BINARY FEATURE**; **EMIC-ETIC DISTINCTION**.

**minimax strategy** in **GAME THEORY** or decision making, a tactic in which individuals attempt either to minimize their own maximum losses or to reduce the most an opponent will gain. For example, a health researcher may propose an intervention that would be the least aversive treatment for a serious disease, thereby minimizing the adverse effects patients may expect to experience as a result of the disease. Compare **MAXIMIN STRATEGY**.

**Mini-Mental State Examination (MMSE)** an instrument used extensively to provide a quick screening assessment of cognitive status. The patient is asked simple questions relating to time and place orientation and required to perform simple tasks (e.g., write an intelligible sentence) assessing memory, attention, calculation, and language. Lower scores suggest that the patient should be evaluated for a cognitive impairment, such as dementia. Also called **Folstein Mini-Mental State Examination**. [devised in 1975 by U.S. psychiatrists Marshal F. Folstein (1941– ), Susan E. Folstein (1944– ), and Paul R. McHugh (1931– )]

**minimization** *n.* **COGNITIVE DISTORTION** consisting of a tendency to present events to oneself or others as insignificant or unimportant. Minimization often involves being unclear or nonspecific, so the listener does not have a complete picture of all the details and may be led to draw inaccurate or incomplete conclusions.

**minimum power theory** an analysis of **COALITION** formation processes that assumes that (a) all members who control sufficient resources to turn a winning coalition into a losing one or a losing coalition into a winning one are equal in terms of power; and (b) individuals' expectations concerning the division of the coalition's payoff will conform to an equity norm (see **EQUITY THEORY**), but one based on power rather than resources. This theory predicts that the most likely coalition to form in a group will be one that wins but comprises the individuals with the smallest amounts of power consistent with this outcome. Compare **MINIMUM RESOURCE THEORY**.

**minimum resource theory** an analysis of **COALITION**

formation processes that assumes that (a) people in group situations will behave hedonistically and thus will be motivated to maximize their power, outcomes, and payoffs by forming coalitions; and (b) individuals' expectations concerning the division of the coalition's payoff will conform to an equity norm (see **EQUITY THEORY**). The minimum resource theory predicts that the most likely coalition to form in a group will be the one that contains those individuals whose total, combined resources are the fewest needed to control the outcome of the entire group. Compare **MINIMUM POWER THEORY**.

**minimum separable** the minimum distance that can be detected between two adjacent high-contrast visual stimuli. This distance, 1 minute of arc at the fovea, is about 60 times greater than the minimum detectable width of a line that appears alone. Compare **MINIMUM VISIBLE**.

**minimum visible** the narrowest visual stimulus that can be detected when it appears alone in the visual field. Compare **MINIMUM SEPARABLE**.

**Minnesota Multiphasic Personality Inventory (MMPI)** a **PERSONALITY INVENTORY** first published in 1940 and now one of the most widely used **SELF-REPORT** tools for assessing personality. It has broad applications across a range of mental health, medical, substance abuse, forensic, and personnel screening settings as a measure of psychological maladjustment. The original inventory consisted of 550 true-false items grouped into nine scales reflecting common clinical problems: hypochondria, depression, hysteria, psychopathic deviate, masculine-feminine interest, paranoia, psychasthenia (i.e., anxiety), schizophrenia, and hypomania. The results were scored by the examiner or by computer to determine the participant's personality profile as well as any tendency to lie or to fake good or bad. The version currently in use, the **MMPI-2** (1989), features 567 true-false questions that assess symptoms, attitudes, and beliefs that relate to emotional and behavioral problems, including substantial revisions of the original items and the addition of new scales.

The early 1990s saw the publication of a version of the instrument, the **MMPI-A**, with content items specifically relevant to adolescents ages 14 to 18. The instrument's 478 items help identify personal, social, and behavioral problems (e.g., family issues, eating disorders, chemical dependency). In 2008, a substantially shorter version of the **MMPI-2**, the **MMPI-2-RF (Restructured Form)**, was published with 338 true-false items for individuals 18 years and older. [originally developed by Starke Rosecrans HATHAWAY and U.S. psychiatrist John Charnley McKinley (1891–1950) at the University of Minnesota]

**Minnesota Satisfaction Questionnaire (MSQ)** a measure of **JOB SATISFACTION**, developed at the University of Minnesota, in which employees rate the extent to which they are satisfied or dissatisfied with each of several intrinsic factors (e.g., the work itself) and extrinsic factors (e.g., pay) relating to the job.

**minor** *n.* a person who is not legally an **ADULT**. See also **EMANCIPATED MINOR**.

**minor depression** see **DYSTHYMIA**.

**minor depressive disorder** in an appendix to **DSM-IV-TR**, a proposed diagnosis of a mood disorder in which an individual experiences persistent sadness or **ANHEDONIA** and other symptoms similar to **MAJOR DEPRESSIVE DISORDER** or **DYSTHYMIC DISORDER** but without meeting the full criteria for either diagnosis. These other symptoms may include

appetite, weight, or sleep changes; PSYCHOMOTOR AGITATION or PSYCHOMOTOR RETARDATION; fatigue or loss of energy; feelings of worthlessness or guilt; difficulty concentrating or making decisions; and recurrent thoughts of death or suicide.

**minority group** a population subgroup with social, religious, ethnic, racial, or other characteristics that differ from those of the majority of the population. The term is sometimes extended to cover any group that is the subject of oppression and discrimination, whether or not it literally comprises a minority of the population. When members of groups historically considered minorities make up more than 50% of an area's population, that jurisdiction is described as **majority-minority**. See also ETHNIC GROUP; SUBCULTURE.

**minority influence** social pressure exerted on the majority of a group by a smaller faction of the group. Studies suggest that minorities who argue consistently prompt the group to reconsider even long-held or previously unquestioned assumptions and procedures. MAJORITY INFLUENCE tends to be direct and results in CONFORMITY, but minority influence is indirect and instigates innovation and CONVERSION, as the members of the majority struggle to validate their judgments.

**minority stress** the physiological and psychological effects associated with the adverse social conditions experienced by ethnic and racial minorities, lesbians, gay men, bisexual and transgender individuals, and others who are members of stigmatized social groups. Common sources of minority stress include experiencing prejudice, discrimination, harassment, or verbal or physical violence; expecting or experiencing rejection by others; concealing one's minority identity; and internalizing negative societal attitudes about one's social group that results in a negative self-view. The concept frequently is invoked by researchers to explain the increased rates of depression, suicide, anxiety, substance abuse, workplace problems, body image problems, eating disorders, high blood pressure, cardiovascular disease, and other mental and physical conditions among members of minority or marginalized groups. Conversely, researchers have hypothesized certain protective factors that help ameliorate the adverse health outcomes of minority stress. These include personal characteristics, such as RESILIENCE and an effective COPING STRATEGY, and SOCIAL SUPPORT mechanisms, such as GROUP SOLIDARITY, GROUP COHESION, and COLLECTIVE SELF-ESTEEM. [coined in 1995 by Israeli-born U.S. social psychologist Ilan H. Meyer]

**minor tranquilizer** see ANXIOLYTIC.

**min strategy** an arithmetic strategy in which children faced with an addition problem start with the largest addend and count up from there. For example, for the problem,  $3 + 2 = ?$ , a child would say "3 . . . 4, 5."

**minty** *adj.* denoting one of the seven classes of odorants in the STEREOCHEMICAL SMELL THEORY.

**miosis (myosis)** *n.* contraction of the pupil of the eye. —**miotic** *adj.*

**Miranda warning** a warning given in the United States by police officers to suspects during an arrest to make them aware of their rights against self-incrimination. Suspects must be told they have the right to remain silent and the right to have an attorney present during questioning; an attorney will be provided if suspects cannot afford one. They must also be informed that anything they say can be used as evidence against them in court. It is named for the

defendant in *Miranda v. Arizona*, a case that was ultimately decided in 1966 by the U.S. Supreme Court. Also called **Miranda rights**.

**mirror-box technique** a rehabilitation method in which an individual who has lost the use of a limb due to stroke places both affected and unaffected limbs (e.g., left arm and right arm) into slots of a box containing two mirrors in the center that each face outward, reflecting the respective limb. The person moves the intact limb and watches its reflection in the corresponding mirror, which gives the illusion that the other, paralyzed limb is moving in response to the brain's commands. Research has shown that the technique aids recovery of limb function following stroke, perhaps by tapping into former MIRROR NEURON circuits that have only been partially damaged. The technique also is used, in modified form, with individuals who have lost a limb to amputation and has been effective in reducing or alleviating their PHANTOM LIMB pain. [developed by neurologist Vilayanur S. Ramachandran (1951– )]

**mirror drawing** a motor-skill test of the ability to alter well-learned patterns of hand-eye coordination. In the test, the participant traces an image while looking into a mirror that shows only the image and the pencil.

**mirror imaging 1.** a type of reversed asymmetry of characteristics often found between twins, particularly MONOZYGOTIC TWINS. Examples include handedness, fingerprints, and hair whorls. **2.** see MIRROR NEURON.

**mirroring** *n.* **1.** reflecting or emulating speech, affect, behavior, or other qualities in psychotherapeutic contexts. A therapist may adopt the movements, speech style, or locutions of a client, and vice versa, to indicate comprehension of what is being said or to reflect bonding, either nonconsciously or with the intent of empathizing. **2.** the positive responses of parents to a child that are intended to instill internal self-respect. **3.** see MIRROR TECHNIQUE.

**mirror neuron** a type of cell in the brains of certain animals (including humans) that responds in the same way to a given action (e.g., grasping an object) whether the animal performs the action itself or sees another animal (not necessarily of the same species) perform the action. This phenomenon is known as **mirror imaging**. [named and described by Russian-born Italian neurologist Giacomo Rizzolatti (1937– )]

**mirror phase** the stage in development occurring around 6 to 18 months of age when the infant becomes able to imagine himself or herself as an autonomous ego in the image of the parent and also starts to recognize his or her reflection in a mirror. That is, the child begins to acquire a self-image. French psychoanalyst Jacques Lacan (1901–1981), who introduced the phrase, saw this as marking the start of the infant's transition from the realm of the IMAGINARY to that of the SYMBOLIC. See also NAME-OF-THE-FATHER.

**mirror reading 1.** reading in a pattern that is the reverse of that generally followed. **2.** a task in which a person must read words that are presented one at a time in mirror image. **3.** a preference for reading mirror-reversed rather than normally written words.

**mirror sign 1.** the tendency to look at oneself in a reflecting surface (window, mirror, etc.) frequently and for an extended period of time. [first described in 1927 by French psychologist Paul Abely as an early symptom of schizophrenia] **2.** the inability to recognize the reflection of one-

self in a mirror, described mainly in moderate or severe dementia, especially Alzheimer's disease.

**mirror technique** **1.** the conscious use of ACTIVE LISTENING by the therapist in psychotherapy, accompanied by reflection of the client's affect and body language in order to stimulate a sense of empathy and to further the development of the THERAPEUTIC ALLIANCE. **2.** in PSYCHODRAMA, a technique in which an AUXILIARY EGO imitates a client's behavior patterns to show that person how others perceive and react to him or her. Also called **mirroring**.

**mirror-touch synesthesia** see SYNESTHESIA.

**mirror transference** in SELF PSYCHOLOGY, a NARCISSISTIC TRANSFERENCE technique in which patients' grandiose selves are reactivated as a replica of the early phase of their lives when their mothers established or undermined their sense of perfection by admiring or devaluing their exhibitionistic behavior. This "reactivation process" aims to help the patient develop healthy self-esteem. Compare IDEALIZING TRANSFERENCE; TWINSHIP TRANSFERENCE. [first described by Austrian-born U.S. psychoanalyst Heinz Kohut (1913–1981)]

**mirror writing** the production of individual letters and whole word strings in reverse direction. Mirror writing is characterized by an inversion of letters and words such that they appear reversed unless viewed in a mirror. It is related to STREPHOSYMBOLIA.

**mirtazapine** *n.* an antidepressant whose mechanism of action differs from that of most other antidepressants. It is considered to be a MULTIFUNCTIONAL ANTIDEPRESSANT in that two separate actions result in increased neurotransmission of norepinephrine and serotonin. By binding to presynaptic  $\alpha_2$ -adrenoreceptors (see ALPHA-ADRENERGIC RECEPTOR; AUTORECEPTOR), it enables continued release of norepinephrine from presynaptic neurons. It also acts as a SEROTONIN AGONIST at postsynaptic 5-HT<sub>1</sub> receptors. Other actions of mirtazapine include potent antagonism of other serotonin and histamine receptors, but it does not inhibit the reuptake of serotonin or norepinephrine. Sedation and weight gain are common adverse effects of mirtazapine, probably due to its potent ability to block the histamine H<sub>1</sub> receptor. Unlike many other antidepressants, in most patients mirtazapine does not cause sexual dysfunction. Rarely, AGRANULOCYTOSIS has been associated with its use. U.S. trade name: **Remeron**.

**MIS** **1.** abbreviation for Müllerian-inhibiting substance. See MÜLLERIAN-INHIBITING HORMONE. **2.** abbreviation for MANAGEMENT INFORMATION SYSTEMS.

**mis-** *combining form* see MISO-.

**misandry** *n.* hatred or contempt for men. Compare MISOGYNY. —**misandrist** *n., adj.*

**misanthropy** *n.* a hatred, aversion, or distrust of human beings and human nature. —**misanthrope** *n.* —**misanthropic** *adj.*

**misarticulation** *n.* **1.** faulty ARTICULATION, resulting in unclear, imprecise speech sounds and poorly understood speech. **2.** a poorly articulated sound or utterance.

**misattribution** *n.* an incorrect inference as to the cause of an individual's or group's behavior or of an interpersonal event. For example, **misattribution of arousal** is an effect in which the physiological stimulation generated by one stimulus is mistakenly ascribed to another source. See also ATTRIBUTION THEORY.

**misattunement** *n.* **1.** a lack of rapport between infant and parent or caregiver such that the infant's efforts at communication and expression are not responded to in a way that allows the infant to feel understood. **2.** in psychoanalysis, a lack of empathy by a therapist or analyst toward a patient. Compare ATTUNEMENT; EMPATHIC FAILURE.

**miscarriage** *n.* see ABORTION.

**miscegenation** *n.* marriage, sexual activity, or reproduction among individuals of different racial or ethnic groups, especially when this is emphasized by marked physical differences (e.g., skin color). The term has traditionally carried a heavy sense of disapproval and is now largely archaic and disfavored. See also EXOGAMY; INTERMARRIAGE; OUTBREEDING. —**miscegenational** *adj.*

**misclassification cost** an estimate of the costs that could arise from assigning an incorrect category or status to a situation or condition. For example, it would be worthwhile to estimate the misclassification cost of prematurely telling the public that previously contaminated town water is now safe to drink, versus waiting longer than needed to let people know they can drink the water. In this case, the misclassification cost of an early announcement would be much more serious—possibly involving severe illness or even loss of life—than that of a later announcement.

**misdiagnosis** *n.* an incorrect, inaccurate, or incomplete identification of a disease or disorder.

**miseducation** *n.* teaching information, intentionally or in good faith, that is incorrect. The teaching of history is a common example of this, as historical material is prone to subjectivity, depending on the point of view of the writer and the period during which it was written.

**misidentification** *n.* failure to identify individuals correctly due to impaired memory or a confused state, as in dementia or alcoholic intoxication or sometimes in mania.

**misidentification syndrome** a disorder characterized by the delusional misidentification of oneself, other people, places, or objects. The misidentification may be expressed as the mistaken belief that a person has altered his or her identity in some way, either physically or psychologically, or that some place or object has undergone transformation. Also called **delusional misidentification syndrome**. See also CAPGRAS SYNDROME; FREGOLI'S PHENOMENON; INTERMETAMORPHOSIS SYNDROME.

**misinformation effect** a phenomenon in which a person mistakenly recalls misleading information that an experimenter has provided, instead of accurately recalling the correct information that had been presented earlier. The misinformation effect is studied in the context of EYE-WITNESS MEMORY.

**miso-** (**mis-**) *combining form* hatred.

**misocainia** (**misocainea**) *n.* see MISONEISM.

**misogamy** *n.* hatred of or aversion to marriage. —**misogamist** *n.*

**misogyny** *n.* hatred or contempt for women. Compare MISANDRY. —**misogynist** *n.* —**misogynistic** *adj.*

**misologia** *n.* an aversion to speaking or arguing. Also called **misology**.

**misoneism** *n.* an extreme resistance to change and intolerance of anything new, sometimes expressed as an obsessive desire to maintain routines and preserve the status

quo. It is often associated with AUTISM. Also called **miso-cainia**. —**misonieist** *n.*

**misopedia** *n.* a hatred of children. Also called **misopedy**.

**misorientation effect** difficulty recognizing an object when it appears in an orientation different from that in which it was initially learned. The effect is critical when navigating from visual images or maps that may be presented in different orientations, and usually results in slower recognition and lower accuracy.

**miss** *n.* in signal detection tasks, an incorrect indication by the participant that a signal is absent in a trial when it is actually present. See also FALSE REJECTION; SIGNAL DETECTION THEORY. Compare FALSE ALARM.

**missing at random (MAR)** the situation in which the absence of certain points from a data set is unrelated to the nature of the particular items but may be explained by other variables. For example, assume a researcher surveyed 100 students on a college campus about their weekly amount of alcohol, drug, and cigarette use but 12 individuals failed to note their use for an item. If all 12 people are male, and if there is no consistency as to which item was left blank by which person, then the pattern of responses on the survey could be related to sex (perhaps the men on campus are less likely to answer any type of evaluative item than are the women). If so, the values would be missing at random. When data are missing at random there is a danger of biasing study results.

**missing fundamental** see VIRTUAL PITCH.

**missing-parts test** an intelligence test in which the participant is required to point out what is missing in a picture. It is frequently used as an observation test in IQ scales, such as the STANFORD–BINET INTELLIGENCE SCALE and the WECHSLER ADULT INTELLIGENCE SCALE.

**missionaries and cannibals problem** in studies of problem solving, a task proposing that three missionaries and three cannibals are on one side of a river and must cross to the other side in a canoe that will only hold two people. The missionaries on either bank must never be outnumbered by the cannibals or they will be eaten, and the canoe must have at least one passenger each time it crosses the river. The solver must plan a series of moves that will get the group across the river in a way that meets these constraints.

**misspecification** *n.* the situation in which the number of variables, factors, PARAMETERS, or some combination of these was not correctly specified in a statistical model, with the result that the model does not offer a reasonable representation of obtained data. Misspecification is indicated by such things as large RESIDUALS between the data and that predicted by the model, large STANDARD ERRORS for the parameter estimates, values for the parameter estimates outside of the normal range (e.g., HEYWOOD CASES), or a nonsignificant result from a GOODNESS-OF-FIT test.

**mistress** *n.* a woman with whom a married man has a continuing sexual relationship, usually without the knowledge of his wife.

**mistrust** *n.* see BASIC TRUST VERSUS MISTRUST.

**MIT** abbreviation for MELODIC INTONATION THERAPY.

**mitigating factor** a fact relating to a crime or to a convicted defendant that supports the argument for a more lenient sentence. Examples of mitigating factors are the

defendant's youth, personal or family circumstances, or DIMINISHED RESPONSIBILITY. Also called **mitigating circumstance**. Compare AGGRAVATING FACTOR.

**mitochondrion** *n.* (*pl.* **mitochondria**) an ORGANELLE that is the main site of energy production in cells. Mitochondria are most numerous in cells with a high level of metabolism. They have their own DNA (mitochondrial DNA). —**mitochondrial** *adj.*

**mitosis** *n.* (*pl.* **mitoses**) the type of division of a cell nucleus that produces two identical daughter nuclei, each possessing the same number and type of chromosomes as the parent nucleus. It is usually accompanied by division of the cytoplasm, leading to the formation of two identical daughter cells. Compare MEIOSIS. —**mitotic** *adj.*

**mitral cell** any of the PYRAMIDAL CELLS that form a layer of the OLEFACTORY BULB. Each mitral cell may receive signals from hundreds of olfactory receptors embedded in the OLEFACTORY EPITHELIUM. See also LATERAL OLEFACTORY TRACT.

**mittelschmerz** *n.* a pain experienced by some females about midway through the menstrual cycle—that is, at the time of OVULATION (from German, “midpain”). The pain is felt in the region of the ovary and is caused by the rupture of the ovarian follicle and bleeding into the peritoneum.

**Mitwelt** *n.* in the thought of German philosopher Martin Heidegger (1889–1976), that aspect of DASEIN (being-in-the-world) that is constituted by a person's relationships and interactions with other people. It was introduced into psychology by Swiss existentialist psychologist Ludwig Binswanger (1881–1966). Compare EIGENWELT; UMWELT. [German, literally: “with world”]

**mixed cerebral dominance** a condition in which neither cerebral hemisphere clearly controls motor functions, possibly causing speech disorders or conflicts in HANDEDNESS.

**mixed deafness** see DEAFNESS.

**mixed design** a study that combines features of both a BETWEEN-SUBJECTS DESIGN and a WITHIN-SUBJECTS DESIGN. Thus, a researcher examines not only the potential differences between two or more separate groups of participants but also assesses change in the individual members of each group over time. For example, a researcher might use a mixed design to study the influence of different types of music on relaxation. He or she could divide participants into a CONTROL GROUP (listening to no music) and two EXPERIMENTAL GROUPS (one listening to classical music and one listening to rock music). The researcher could administer a PRETEST to participants in all groups in order to determine the baseline level of physiological arousal prior to hearing any music and then introduce the music and test participants while they listen. After stopping the music, he or she could administer another test (a POSTTEST) to determine what specific reduction in arousal may have occurred throughout the listening period. In this situation, music type is a between-subjects factor (each participant hears only a single genre of music) and physiological arousal is a within-subjects factor (each participant is evaluated on this variable on multiple occasions and the different assessments compared).

**mixed-design analysis of variance** see MIXED-MODEL ANALYSIS OF VARIANCE.

**mixed distribution** a DISTRIBUTION in which the variables may take on both a DISCRETE and a CONTINUOUS range of values. This may occur when a continuously measured



variable is abruptly topped off or bottomed out at an arbitrary value for a number of participants in the sample. For example, consider a health researcher studying the effects of a smoking cessation intervention who records the number of days since a participant quit smoking. For those participants who quit, the number of days will reflect an infinite series of potential values, whereas for those who continue to smoke the number of days will be the single finite value of zero.

**mixed dysarthria** see DYSARTHRIA.

**mixed-effects design** a vague term used to denote an approach to either research or analysis—the MIXED DESIGN or the MIXED-EFFECTS MODEL, respectively.

**mixed-effects model** any statistical procedure or experimental design that uses one or more independent variables whose levels are specifically selected by the researcher (FIXED EFFECTS; e.g., gender) and one or more additional independent variables whose levels are chosen randomly from a wide range of possible values (RANDOM EFFECTS; e.g., age). Also called **mixed model**. Compare FIXED-EFFECTS MODEL; RANDOM-EFFECTS MODEL.

**mixed emotions** two or more emotions, differing in feeling quality and ACTION TENDENCY, elicited by the same event. For example, a father may be happy that his son is getting married but sorrowful if the marriage takes the son away from home; a person may become angry at an insult from a superior and also frightened by the implications for his or her employment. Also called **mixed feelings**. See AMBIVALENCE.

**mixed episode** in *DSM-IV-TR*, an episode of a mood disorder in which symptoms meeting criteria for both a MAJOR DEPRESSIVE EPISODE and a MANIC EPISODE are prominent over the course of the disturbance. One or more mixed episodes may be a feature of BIPOLAR DISORDER. In *DSM-5*, the specifier “with mixed features” is used instead of *mixed episode* to characterize the presence of these symptoms.

**mixed-function antidepressant** see MULTIFUNCTIONAL ANTIDEPRESSANT.

**mixed laterality** the tendency to shift preference from the right side of the body to the left side when performing a particular activity, or to perform some acts with a preference for the right-hand side and others with a preference for the left. Also called **lateral confusion**.

**mixed-methods research** a study that combines aspects of both QUALITATIVE RESEARCH and QUANTITATIVE RESEARCH so as to understand the phenomenon of interest more fully. For example, a researcher studying a disease could conduct a focus group with a set of individuals who would share their experiences in dealing with the disease, and then supplement those qualitative findings by surveying a different set of individuals to obtain quantitative knowledge of risk factors for the disease.

**mixed model** see MIXED-EFFECTS MODEL.

**mixed-model analysis of variance** a TWO-WAY ANALYSIS OF VARIANCE in which one independent variable has fixed levels specifically chosen for investigation (e.g., gender) and the other has levels randomly selected from among many possible conditions (e.g., doses of a drug). It is one of many types of MIXED-EFFECTS MODELS. Also called **mixed-design analysis of variance**.

**mixed-motive game** any simulation of social interac-

tion that combines opportunities for coordination with antagonistic motivations. The PRISONER’S DILEMMA game, for example, is structured so that players can reach their goals either by competing against or by cooperating with others. See also SOCIAL DILEMMA; SOCIAL TRAP.

**mixed receptive-expressive language disorder** in *DSM-IV-TR*, a developmental COMMUNICATION DISORDER that combines the symptoms of EXPRESSIVE LANGUAGE DISORDER with the symptoms of semantic comprehension problems, leading to difficulty with word associations, categorization, and verbal mediation in general.

**mixed reinforcement schedule** a COMPOUND SCHEDULE OF REINFORCEMENT in which two or more schedules alternate. The same stimulus is used for all schedules, therefore no discriminative cues are available (see DISCRIMINATIVE STIMULUS).

**mixed schizophrenia 1.** a form of schizophrenia in which both negative and positive symptoms are prominent or neither is prominent. [defined in 1982 by U.S. psychiatrists Nancy C. Andreasen and Scott A. Olsen] **2.** historically, a form of schizophrenia that is manifested by symptoms of two or more of the four major types of schizophrenia described by Emil KRAEPELIN and Eugen BLEULER: simple, paranoid, catatonic, and hebephrenic (disorganized).

**mixed-standard scale** a behavior-based rating procedure used in EMPLOYEE EVALUATION. Raters are presented with examples of good, average, and bad behaviors for a job and told to evaluate the performance of the employee in terms of whether it is better than, the same as, or poorer than each of the three behaviors. The performance rating is assigned on the basis of the pattern of responses, the highest score being given to employees rated “better than” on all three behaviors and the lowest rating being given to those rated “poorer than” on all three. Compare BEHAVIORALLY ANCHORED RATING SCALE; BEHAVIORAL OBSERVATION SCALE. See also CRITICAL-INCIDENT TECHNIQUE.

**mixed transcortical aphasia (MTcA)** a form of APHASIA resulting from lesions in both the anterior speech areas (TRANSCORTICAL MOTOR APHASIA) and the posterior speech areas (TRANSCORTICAL SENSORY APHASIA) of the brain. Individuals have poor word comprehension but relatively preserved word repetition, sometimes to the point of ECHOLALIA. Also called **isolation syndrome**.

**mixoscopia** *n.* a form of VOYEURISM in which an orgasm is achieved by observing sexual intercourse between the person one loves and another person.

**mixoscopia bestialis** a type of sexual deviancy in which a person is excited or aroused by watching another individual have coitus with an animal.

**MLD** abbreviation for MASKING LEVEL DIFFERENCE.

**MLE** abbreviation for MAXIMUM LIKELIHOOD estimation.

**MLH1** a germ-line mutation located on the short arm of chromosome 3 and associated with hereditary nonpolyposis colorectal cancer (HNPCC). See also MSH2.

**MLU** abbreviation for MEAN LENGTH OF UTTERANCE.

**MMECT** abbreviation for MULTIPLE MONITORED ELECTRO-CONVULSIVE TREATMENT.

**MMPI** abbreviation for MINNESOTA MULTIPHASIC PERSONALITY INVENTORY.

**MMSE** abbreviation for MINI-MENTAL STATE EXAMINATION.

**MMT** abbreviation for MULTIMODAL THERAPY.

**M'Naghten rule (McNaghten rule; McNaughten rule; McNaughton rule)** a rule for defining INSANITY that focuses on the cognitive state of the defendant at the time of committing the act with which he or she is charged. It states that to plead insanity, the accused must be "laboring under such a defect of reason, from disease of the mind, as not to know the nature and quality of the act he was doing, or if he did know it, he did not know that what he was doing was wrong." The rule was established in 1843 by judges in England after the trial of Daniel M'Naghten, who believed the government was persecuting him and killed prime minister Robert Peel's secretary, Edward Drummond, after mistaking him for Peel. Also called **right-and-wrong test**; **right-or-wrong test**. See also AMERICAN LAW INSTITUTE MODEL PENAL CODE INSANITY TEST; CRIMINAL RESPONSIBILITY; IRRESISTIBLE IMPULSE RULE; PARTIAL INSANITY.

**mneme** *n.* see ENGRAM.

**mnemonic** *n.* any device or technique used to assist memory, usually by forging a link or association between the new information to be remembered and information previously encoded. For instance, one might remember the numbers in a password by associating them with familiar birth dates, addresses, or room numbers. Also called **memory aid**; **mnemonic system**. See also KEY-WORD METHOD; METHOD OF LOCI; PEG-WORD MNEMONIC.

**mnemonic trace** see ENGRAM.

**mnemonist** *n.* an individual with exceptional ability to encode and retrieve information from memory. Some mnemonists have well-developed memory strategies that enable them to remember; others have exceptional memories in only certain domains (e.g., numbers or foreign words).

**mnestic** *adj.* related to memory.

**mob** *n.* a disorderly, unruly, and emotionally charged CROWD. Mobs tend to form when some event, such as a crime, a catastrophe, or a controversial action, evokes the same kind of mood and reaction in a substantial number of people. Early analyses argued that individuals in mobs were so overwhelmed by their emotions and the GROUP MIND that they could no longer control their actions: Unless the situation was diffused, mobs became volatile, unpredictable, and capable of violent action. Contemporary studies suggest that members of mobs may respond impulsively but rarely lose cognitive control, that mysterious social or psychological processes do not force them to behave abnormally in such situations, and that mobs tend to be organized and goal-directed rather than irrational and frenzied.

**Moban** *n.* a former trade name for MOLINDONE.

**mobbing** *n.* a behavior observed in groups of small birds and mammals when threatened by a predator in which group members join together to chase the predator away. Mobbing is usually accompanied by loud, distinctive vocalizations.

**mobility** *n.* **1.** the capacity to move or be moved, such as the ability of people to transport themselves between home and work or community facilities by such means as walking, driving a car, or traveling by public transportation. See also MOTILITY. **2.** the ability of an infant to creep, crawl, walk, or otherwise move through space. **3.** in sociology, the extent to which individuals are able to move between localities, occupations, or social classes. See GEOGRAPHICAL MO-

BILITY; SOCIAL MOBILITY. See also HORIZONTAL MOBILITY; VERTICAL MOBILITY. —**mobile** *adj.*

**mob psychology** CROWD PSYCHOLOGY, as applied to mobs.

**MoCA** abbreviation for MONTREAL COGNITIVE ASSESSMENT.

**MOCC** abbreviation for MEMORY-OPERATING CHARACTERISTIC CURVE.

**moclobemide** *n.* an antidepressant drug that is a reversible MONOAMINE OXIDASE INHIBITOR and relatively selective for MONOAMINE OXIDASE A. It therefore lacks many of the food interactions that limit the use of irreversible, nonselective MAO inhibitors. Moclobemide has not yet been approved for use in the United States.

**modafinil** *n.* a CNS STIMULANT used for the treatment of narcolepsy that may serve as an alternative agent for patients who are intolerant of amphetamines and related stimulants. Its exact mechanism of action is unclear, but because it inhibits the CYTOCHROME P450 2C19 enzyme and induces the cytochrome P450 3A4 enzyme, it may have clinically significant interactions with drugs metabolized via those enzymes. U.S. trade name: **Provigil**. The related drug **armodafinil** is used in the treatment of narcolepsy, sleep apnea, and shift-work sleep disorder. U.S. trade name: **Nuvigil**.

**modal** *n.* pertaining to a particular MODE, model, technique, or process. In linguistics, modal refers to the mood of a verb; that is, for example, whether it is *indicative* (states a fact), *imperative* (expresses an order or command), or *subjunctive* (expresses a wish or a state of possibility).

**modal action pattern (MAP)** the typical or most common behavioral pattern expressed in response to a RELEASER. In classical ethology, the term FIXED ACTION PATTERN was used to describe behavioral responses, but this term obscures the variation in behavior typically seen within and between individuals.

**modal frequency** the number of respondents who have the score that occurs most often in a set of data (i.e., the MODE). For example, in a small sample of college freshmen whose ages are 18, 18, 18, 19, 19, 20, 20, 21, 23, and 25 the modal frequency for age is 3: The most commonly occurring score is 18 and there are three people with such a score.

**modality** *n.* **1.** a particular therapeutic technique or process (e.g., psychodynamic). **2.** a medium of sensation, such as vision or hearing. See SENSE.

**modality effect** the tendency for the final items of a list to be better recalled if the items are presented auditorily rather than visually.

**modal model of memory** a generic theory of memory incorporating assumptions common to most models. The modal model includes a SHORT-TERM MEMORY and a LONG-TERM MEMORY and provides details on how information is encoded and later retrieved from memory. See also DUAL-STORE MODEL OF MEMORY; MULTISTORE MODEL OF MEMORY.

**mode** *n.* **1.** a characteristic manner of behavior or way of doing things, as in a technique. **2.** the most frequently occurring score in a set of data, which is sometimes used as a measure of CENTRAL TENDENCY. Also called **modal value**.

**model** *n.* **1.** a graphic, theoretical, or other type of representation of a concept or of basic behavioral or bodily processes (e.g., a disorder) that can be used for various

investigative and demonstrative purposes, such as enhancing understanding of the concept or process, proposing hypotheses, showing relationships, or identifying epidemiological patterns. **2.** see MODELING.

**model human processor** a model of human INFORMATION PROCESSING that is used in evaluating the usability of products and systems. The model, which is derived from empirical findings, consists of three interacting subsystems—perceptual, motor, and cognitive. Estimates of processing capacity and of processing and decay times (see DECAY THEORY) can be used to quantify human performance under a variety of constraints. See also HUMAN OPERATOR MODELING. [developed in 1983 by U.S. psychologist Stuart K. Card (1943– ), U.S. computer scientist Thomas P. Moran (1942– ), and U.S. cognitive and computer scientist Allen Newell (1927–1992)]

**modeling** *n.* **1.** a technique used in COGNITIVE BEHAVIOR THERAPY and BEHAVIOR THERAPY in which learning occurs through observation and imitation alone, without comment or reinforcement by the therapist. See also BEHAVIORAL MODELING. **2.** the process in which one or more individuals or other entities serve as examples (**models**) that a child will emulate. Models are often parents, other adults, or other children, but they may also be symbolic (e.g., a book or television character). See also SOCIAL LEARNING THEORY.

**modeling effect** a type of EXPERIMENTER EFFECT in which a participant is unwittingly influenced to give responses similar to the responses the experimenter would give if the experimenter were a participant.

**modeling theory** the idea that changes in behavior, cognition, or emotional state result from observing someone else's behavior or the consequences of that behavior. See OBSERVATIONAL LEARNING; SOCIAL LEARNING THEORY.

**model psychosis** psychotic symptoms (e.g., delusions, hallucinations, disorientation, disorganized speech) deliberately produced by a PSYCHOTOMIMETIC drug, such as LSD, for purposes of research. This technique was particularly popular during the 1950s and 1960s.

**moderate mental retardation** an older diagnostic and classification category applying to those with IQs of 35 to 49, comprising about 10% of people with MENTAL RETARDATION. These individuals rarely progress beyond the second grade in academic subjects. Although often poorly coordinated, they can learn to take care of themselves and to develop sufficient social and occupational skills to be able to perform unskilled or semiskilled work under supervision in sheltered and supportive environments, as well as in regular workplaces where accommodations are made.

**moderating effect** the effect that occurs when a third variable changes the nature of the relationship between a predictor and an outcome, particularly in analyses such as MULTIPLE REGRESSION. For example, STRUCTURAL EQUATION MODELING can be used to assess whether a predicted association between quantitative skill and performance fits equally well across different teaching style groups (e.g., lecture based vs. hands-on learning). If the prediction is different across the two groups, then teaching style is said to have produced a moderating effect. Also called **moderator effect**.

**moderator** *n.* **1.** an INDEPENDENT VARIABLE that changes the nature of the relationship between other variables. For example, if a researcher examined the relationship be-

tween gender and math performance, a significant difference might emerge. However, if teaching style were taken into account, such that those who learned math by applied, hands-on methods performed better than those who learned with traditional lecture styles, regardless of gender, one could say that teaching style was a moderator of the relationship between gender and math performance. Also called **moderating variable**. See also MODERATING EFFECT. **2.** a variable aspect of consumer behavior associated with different patterns of results. For example, consumer motivation might serve as a moderator of how individuals develop attitudes toward products. With high levels of motivation, consumers tend to base their attitudes on the quality of a product as assessed by detailed thinking about the product's features. With low levels of motivation, consumers tend to base their attitude toward a product on such factors as the attractiveness of the product endorser. Personality variables often serve as moderators of processes underlying consumer behavior.

**modernism** *n.* **1.** in philosophy, a set of general characteristics marking the whole period from the 17th century to the present day. Most historians of philosophy see the onset of modernity in the work of René DESCARTES, with its attempt to establish a systematic account of reality on a radically new basis (see CARTESIANISM; CARTESIAN DUALISM; CARTESIAN SELF). Historically, modernism is inseparable from the Enlightenment of the 17th and 18th centuries and its complex legacy over the past 300 years. Its defining characteristics include a sense that religious dogma and classical metaphysics can no longer provide a sure foundation in intellectual matters and a quest for certain knowledge from other sources; the latter is sustained by confidence in absolutes in EPISTEMOLOGY and ETHICS and confidence in the new methods of EXPERIMENTAL PHILOSOPHY, or natural science. Traditional psychology can be seen to be the product of modernism to the extent that it is characterized by faith in scientific method, pursuit of control and prediction of behavior, explanation in terms of laws and principles, and the assumption that human behavior is ultimately rational as opposed to irrational. Some thinkers argue that modernism was superseded by POSTMODERNISM in the late 20th century, although others would dispute such a claim. **2.** a movement in the arts of the early 20th century characterized by the adoption of radically new techniques, forms, approaches, and subjects. Important developments associated with modernism include abstraction in the visual arts, free verse in poetry, and use of the 12-tone scale in music. Many writers and artists of the period were influenced by contemporary developments in psychology and psychoanalysis; a particular instance of this is the use of the STREAM OF CONSCIOUSNESS technique by novelists and poets, such as Irish writer James Joyce (1882–1941), British writer Virginia Woolf (1882–1941), French writer Marcel Proust (1871–1922), and others. For more than a half century now, the concept of postmodernism in the arts has been much discussed. —**modernist** *adj.*, *n.*

**modernization** *n.* the complex set of processes by which a largely rural and traditional society becomes a developed industrial society. Modernized societies are typically conceived as those societies that tend toward the secular and urbanized and that place a high value on science and technology, education, SOCIAL MOBILITY, acquired wealth, democratic government, and the rule of law. Modernization is anchored to notions of social and economic progress. It is often contrasted with the TRADITIONALISM of undeveloped or underdeveloped societies, which are often identified as

religious and rural, with limited technology, low social mobility, weak political structures, and so forth. Other conceptualizations of this dichotomy are currently in debate, however, pointing to the highly variable social and psychological adjustments that occur in different societies as they respond to development. —**modernize** *vb.*

**modern racism** a contemporary form of PREJUDICE against members of other racial groups that is expressed indirectly and covertly, typically by condemning the cultural values of the OUTGROUP or by experiencing aversive emotions when interacting with its members but not acting on those negative emotions (see AVERSIVE RACISM). A modern racist, for example, expresses prejudice by condemning another group's cultural values or by avoiding any contact with members of that group. Changed social attitudes have brought about a decline in the direct expression of racial discrimination and hostility toward minority groups (**old-fashioned racism**), with a corresponding increase in the less blatant modern racism.

**modes of learning** different sensory modalities through which information may be presented for learning and encoded into memory. For instance, one can learn through vision, hearing, or touch. See MOTOR LEARNING; VERBAL LEARNING; VISUAL LEARNING.

**modesty** *n.* 1. absence of self-importance or conceit. 2. propriety in appearance, dress, demeanor, and social behavior. —**modest** *adj.*

**MODE theory** Motivation and Opportunity as Determinants theory: a theory of ATTITUDE-BEHAVIOR CONSISTENCY postulating that the process by which attitudes influence behavior differs according to the amount of deliberation involved. When people are motivated and able to deliberate about their actions, attitudes influence behavior in a manner similar to that postulated by the THEORY OF REASONED ACTION. When people are not motivated or able to deliberate about their actions, attitudes toward the target of the behavior can be activated in memory and affect the way the target is perceived. These perceptions in turn influence how people define the behavioral event (e.g., as a situation in which the target should be approached or avoided). The definition of the behavioral event in turn determines behavior. [originally developed by U.S. psychologist Russell H. Fazio (1952– )]

**modified replication** see REPLICATION.

**Modified Rhyme Test (MRT)** a test to evaluate auditory processing in which the participant listens to a single-syllable word and then identifies it from among several printed alternatives. The response choices are grouped into six-item lists within which the vowels in the words are held constant as either the initial or final consonants change (e.g., *beam, bead, beach, beat, beak, bean*). [developed in 1965 by Arthur S. House, Carl E. Williams, Michael H. L. Hecker, and psychoacoustician Karl D. Kryter (1914–2013)]

**modifier** *n.* 1. in genetics, a gene that appears to have an effect of modifying other hereditary factors but has no significant effect when those other factors are absent. Some investigators believe modifier genes play a role in constitutional medical conditions. Many physical diseases and behaviors are thought to involve modifier genes as well as environmental triggers. 2. in grammar, any word or phrase that qualifies or limits the meaning of another word or phrase (e.g., an adjective or adverb).

**modularity** *n.* a theory of the human mind in which the various components of cognition are characterized as inde-

pendent MODULES, each with its own specific domain and particular properties. It was first proposed by U.S. philosopher Jerry Fodor (1935– ) in his book *The Modularity of Mind* (1983). A related notion had earlier been advanced by Noam CHOMSKY in his theory of the TASK SPECIFICITY OF LANGUAGE, which characterizes the human language faculty as a unique “mental organ” differing qualitatively from other aspects of cognition. More recently, evolutionary psychologists have shown interest in the idea that the various modules may be adaptive specializations. Compare COGNITIVE GRAMMAR.

**modulation** *n.* changes in some parameter of a waveform (e.g., amplitude, frequency, phase) so that the information contained by the variations of this parameter can be transmitted by the wave, which is known as the **carrier wave**. **Amplitude modulation (AM)** refers to changes in amplitude that are relatively slow compared to the usually sinusoidal variations in the carrier. In **frequency modulation (FM)**, the frequency of the carrier is varied, but its amplitude remains constant. In **phase modulation**, the relative phase of the carrier wave is varied in accordance with the amplitude of the signal variations. For most modulated waveforms, the frequency of modulation is much less than the frequency components in the carrier.

**modulation threshold** see TEMPORAL MODULATION TRANSFER FUNCTION.

**modulatory role** the role that some hormones play in maintaining the sensitivity of NEURAL CIRCUITS and other structures to hormonal influences.

**modulatory site** a site on a RECEPTOR molecule that, when bound by a ligand (e.g., a drug), alters the receptor's response on binding of its agonist (e.g., a neurotransmitter) to the usual site.

**module** *n.* 1. in cognitive theory, a hypothetical center of information processing that is presumed to be relatively independent and highly specialized in its operations, such as a language module or face-processing module. 2. in neuroscience, a unit of a region of the central nervous system. For example, regions of the NEOCORTEX in the brain are divided into CORTICAL COLUMNS of basically similar structure. —**modular** *adj.*

**modulus** *n.* see ABSOLUTE VALUE.

**modus operandi** a specific behavioral pattern that may typify a particular individual; the term is often used with respect to criminal behavior but also more generally to signify any individual's particular behavioral approach or way of acting. [from Latin, “manner of working”]

**MOE** abbreviation for MARGIN OF ERROR.

**Mogadon** *n.* a trade name for NITRAZEPAM.

**mogigraphia** *n.* a rare name for WRITER'S CRAMP.

**mogilalia** *n.* difficulty or hesitancy in speaking (e.g., STUTTERING). Also called **molilalia**.

**moiré interference model** see GRID CELL.

**molar** *adj.* characterized by or pertaining to units, masses, and systems in their entirety. **Molar analysis** (also called **global analysis**) in psychology is a way of examining behavioral processes as holistic units, extended through time. This approach stresses comprehensive concepts or overall frameworks or structures. Compare MOLECULAR.

**molecular** *adj.* characterized by or pertaining to the component parts of a phenomenon, process, or system.

**Molecular analysis** in psychology is a way of examining behavioral processes in terms of elemental units, sometimes analyzing them in a moment-by-moment or phase-by-phase manner. Compare MOLAR.

**molecular genetics** the branch of biology that is concerned with the structure and processes of genetic material at the molecular level.

**molecularism** *n.* see ATOMISM.

**molecular layer** see DENTATE GYRUS.

**molestation** *n.* the act of making sexual advances toward a person who does not want them. Molestation generally implies sexual fondling or touching an individual without lawful consent. When the victim of molestation is a child or a person with a mental disability, it may be assumed that he or she does not have the capacity to give lawful consent. See also SEX OFFENSE. —**molest** *vb.*

**molilalia** *n.* see MOGILALIA.

**molindone** *n.* a conventional (typical or first-generation) antipsychotic. Until the advent of the atypical, or second-generation, antipsychotics, it was frequently used, usually in low doses, for the management of psychoses accompanying medical conditions (e.g., HIV-related dementia). Molindone was taken off the U.S. market in 2010. Former U.S. trade name: **Moban**.

**Molyneux's question** the question posed by William Molyneux (1656–1698), a member of the Irish parliament, to John LOCKE, who later discussed it in his *Essay Concerning Human Understanding* (1690). Molyneux's question was whether a man born blind but able to distinguish two distinct shapes by feeling them with his hands would be able to distinguish them by sight alone, without also touching them, if he were suddenly able to see. Locke's answer—and Molyneux's as well—was that the person would not be able to distinguish them by sight immediately because the sense modalities act independently and can be integrated only by experience.

**moment** *n.* the power to which the EXPECTED VALUE of a RANDOM VARIABLE is raised. Thus,  $E(x^k)$  is the  $k$ th moment of  $x$ . The first moment is usually the MEAN of a variable, the second moment refers to VARIANCE, the third moment relates to SKEWNESS, and the fourth moment concerns KURTOSIS. Knowing each of these moments provides a complete picture of the DISTRIBUTION for a set of scores: A researcher knows the center point of the data, how spread out the values are, whether they are lopsided, and whether they are peaked (LEPTOKURTIC) or flat (PLATYKURTIC).

**moment about the mean** see CENTRAL MOMENT.

**mommy track** **1.** a professional pathway associated with working mothers, typically characterized by flexible working conditions but limited career advancement. **2.** the cultural and social circumstances that put girls on the path to early motherhood; poor socioeconomic circumstances and the lack of a strong, present, and positive father figure can influence girls to become mothers earlier in their lives than girls with more advantages.

**mon-** combining form see MONO-.

**monad** *n.* in the thought of Gottfried Wilhelm LEIBNIZ, one of the ultimate indivisible units of existence. Monads are independent of one another and innately have the power of action and direction toward some end (see NISUS). Although no monad in reality acts on any other, they work in a divinely PREESTABLISHED HARMONY so that an appear-

ance of causal connection is maintained. The concept of the monad was intended, in part, to address the MIND–BODY PROBLEM arising from CARTESIAN DUALISM.

**monaural** *adj.* relating to or perceived by one ear only. Compare BINAURAL.

**monestrous** *adj.* see ESTROUS CYCLE.

**mongolism** *n.* an obsolete name for DOWN SYNDROME.

**moniliasis** *n.* see CANDIDIASIS.

**monism** *n.* the position that reality consists of a single substance, whether this is identified as mind (IDEALISTIC MONISM), matter (NATURAL MONISM), or God (PANTHEISM). In the context of the MIND–BODY PROBLEM, monism is any position (such as NEUTRAL MONISM) that avoids DUALISM. —**monist** *adj., n.* —**monistic** *adj.*

**mono-** (**mon-**) combining form one, single, or alone.

**monoacylglycerol lipase** (MAGL) see ENDOGENOUS CANNABINOID.

**monoamine** *n.* an AMINE that contains only one amine group,  $-NH_2$ . Monoamines include neurotransmitters such as the CATECHOLAMINES norepinephrine and dopamine and the INDOLEAMINE serotonin. See also MONOAMINE OXIDASE.

**monoamine hormone** see AMINE HORMONE.

**monoamine hypothesis** the theory that depression is caused by a deficit in the production or uptake of the AMINE compounds serotonin, norepinephrine, and dopamine. This theory has been used to explain the effects of MONOAMINE OXIDASE INHIBITORS but is now regarded as too simplistic. A related notion, the **monoamine neurotransmitter theory**, proposes that RUNNER'S HIGH is the result of an increase of norepinephrine and serotonin with exercise.

**monoamine oxidase** (MAO) an enzyme that breaks down and inactivates MONOAMINES, including several neurotransmitters. It is found in most tissues and, in humans, exists in two forms, MAO-A and MAO-B. MAO-B is the predominant enzyme in the brain, whereas MAO-A is found primarily in the gastrointestinal tract (it accounts for only 20% of brain monoamine oxidase). Drugs that inhibit MAO (see MONOAMINE OXIDASE INHIBITOR) are used to treat depression. There is some evidence that inhibition of MAO-A, which primarily degrades serotonin and norepinephrine, may lead to greater antidepressant effects than inhibition of MAO-B, which primarily degrades dopamine.

**monoamine oxidase inhibitor** (MAOI; **MAO inhibitor**) a group of antidepressant drugs that function by inhibiting the activity of the enzyme MONOAMINE OXIDASE in presynaptic neurons, thereby increasing the amounts of monoamine neurotransmitters (serotonin, norepinephrine, and dopamine) available for release at the presynaptic terminal. There are two categories of MAOIs: irreversible and reversible inhibitors. **Irreversible MAOIs** bind tightly to the enzyme and permanently inhibit its ability to metabolize any monoamine. This may lead to dangerous interactions with foods and beverages containing the amino acid tryptophan or TYRAMINE, particularly those produced by enzymatic action or by aging (e.g., cheeses, preserved meats and fish). A hypertensive crisis (a potentially fatal rise in blood pressure) may result from these interactions, a phenomenon that is sometimes known as the “cheese effect.” Irreversible MAOIs are of two classes: hydrazines related to isoniazid (see ISOCARBOXAZID; PHENELZINE) and nonhydrazines, of which **tranylcypromine** (U.S. trade name: Parnate) has been the only agent used for mental

disorders in the United States until the recent availability of SELEGILINE as a transdermal patch for the treatment of depression; this patch requires no dietary restrictions at lower doses. **Reversible inhibitors of monoamine oxidase-A** (RIMAs) do not bind irreversibly to the enzyme (its MAO-A form), thereby freeing it to take part in the metabolism of amino acids and other amines. RIMAs may be less prone to producing a hypertensive crisis, which would obviate the need for dietary restrictions on tyramine-containing foods. An example of RIMAs is MOCLOBEMIDE, which is available in Europe but has not yet been approved for use in the United States. The availability of other effective antidepressants lacking the drug–food interactions of the MAOIs has led to a precipitous decline in their use, particularly of the irreversible agents.

**monochorial twins** a set of twins that, in utero, shared the same outermost embryonic membrane (CHORION). Monochorial twins are always identical twins (MONOZYGOTIC TWINS), but identical twins are not necessarily monochorial. Compare DICHORIAL TWINS.

**monochromatic light** light of a single wavelength. Monochromatic light can be produced by a laser or by a **monochromator**, which uses a prism to refract the visible spectrum and a slit to restrict the light available to the viewer to a single wavelength.

**monochromatism (monochromacy; monochromasy; monochromatopsia)** *n.* a partial color blindness in which the eye contains only one type of cone PHOTOPIGMENT instead of the typical three: Everything appears in various shades of a single color. See also ACHROMATISM; DICHROMATISM; TRICHROMATISM.

**monocular** *adj.* referring to one eye. Also called **uniocular**. Compare BINOCULAR.

**monocular cell** see BINOCULAR CELL.

**monocular cue** see DEPTH CUE.

**monocular deprivation** the deprivation of light to one eye. Compare BINOCULAR DEPRIVATION.

**monocular rearing** an experimental paradigm in which an animal is raised from birth with vision restricted to one eye by suturing the eyelids closed or by inserting an opaque contact lens in one eye. Monocular rearing during the CRITICAL PERIOD has profound structural and functional consequences for the developing visual system, including a shift in the OCULAR DOMINANCE of cortical neurons to favor the nonoccluded eye and a broadening of the OCULAR DOMINANCE COLUMNS corresponding to the open eye.

**monocular suppression** the tendency of one eye to be dominant while the other is suppressed, resulting in a failure of binocular vision.

**monocular vision** the use of only one eye for sight.

**monodrama** *n.* in GROUP THERAPY, a role-playing technique in which a member of the group acts out a scene alone. The member's behavior is then evaluated by the group.

**monogamy** *n.* 1. a MATING SYSTEM in which two individuals mate exclusively with each other. Recent genetic studies of paternity indicate that some offspring of male–female pairs exhibiting monogamy are not related to the father, leading to a distinction between **social monogamy**, in which there is an appearance of a close PAIR BOND, and **genetic monogamy**, in which there is exclusive mating.

Many species, including human beings, display **serial monogamy**, in which there is an exclusive social bond with each of a series of sexual partners at different times during the individual's life. Compare POLYANDRY; POLYGYNANDRY; POLYGyny. 2. traditionally, marriage to only one spouse at a time. Compare POLYGAMY. —**monogamous** *adj.*

**monogenism** *n.* the belief or theory that all human beings are descended from the same two ancestors. Also called **monogenesis; monogeny**.

**monoidism** *n.* obsessive preoccupation with a single idea to the exclusion of anything else.

**monomania** *n.* 1. extreme enthusiasm or zeal for a single subject or idea, often manifested as a rigid, irrational idea. See also IDÉE FIXE. 2. an obsolete name for a pattern of abnormal behavior with reference to a single subject in an otherwise apparently normally functioning individual. —**monomaniac** *n.*

**monomorphism** *n.* the absence of differences between males and females of a species such that both sexes are similar in body size, coloration, or other features. Compare DIMORPHISM; SEXUAL DIMORPHISM. —**monomorphic** *adj.*

**monopediomania** *n.* sexual interest in and arousal by people who have only one leg.

**monophagism** *n.* a pathological eating behavior in which the individual habitually eats only one type of food or only one meal a day.

**monophasic sleep** a sleep pattern in which sleeping occurs in one long period once a day, typically at night. Compare POLYPHASIC SLEEP. See also SLEEP–WAKE CYCLE.

**monoplegia** *n.* paralysis of a single part of the body, for example, one arm, one leg, or one digit. —**monoplegic** *adj.*

**monopolar neuron** see UNIPOLAR NEURON.

**monorchidism** *n.* the condition of having only one testis in the scrotum. The second testis may be present but undescended (see CRYPTORCHIDISM). See also ECTOPIC TESTIS. —**monorchid** *adj., n.*

**monorhinic** *adj.* relating to the presentation of an ODORANT to a single nostril via an OLFACTOMETER.

**monosomy** *n.* see AUTOSOME. —**monosomic** *adj.*

**monosomy 5p** see CRI DU CHAT SYNDROME.

**monosymptomatic** *adj.* denoting a disorder that is characterized by a single marked symptom.

**monosynaptic arc** a simple NEURAL ARC that involves just two neurons with a synapse between them, as in the case of a MONOSYNAPTIC STRETCH REFLEX. Also called **two-neuron arc**. Compare POLYSYNAPTIC ARC. See also REFLEX ARC.

**monosynaptic stretch reflex** a reflex in which there is muscle contraction in response to sudden stretching of a tendon, involving only a sensory neuron, a motor neuron, and the synapse connecting them in the spinal cord. The PATELLAR REFLEX is a monosynaptic stretch reflex. See also REFLEX ARC.

**monosynaptic transmission** the transmission of nerve impulses via a single synapse, as in a MONOSYNAPTIC ARC.

**monotherapy** *n.* the use of a single method or approach to treat a particular disorder or PRESENTING SYMPTOM, as opposed to the use of a combination of methods. An exam-

ple is the use of only PHARMACOTHERAPY, instead of pharmacotherapy and psychotherapy in combination, to treat depression.

**monotic** *adj.* denoting or relating to the presentation of sound to one ear only. Compare DICHOTIC; DIOTIC.

**monotonic** *adj.* denoting a variable that either increases or decreases as a second variable either increases or decreases, respectively: The relationship is not necessarily LINEAR but there are no changes in direction. A **monotonically increasing** variable is one that rises consistently as a second variable increases, for example, level of performance in relation to amount of practice if this were observed to be the case. In contrast, depression would be a **monotonically decreasing** variable if its severity were found to fall consistently as a person's level of perseveration declined.

**monozygotic twins (MZ twins)** twins, always of the same sex, that develop from a single fertilized ovum (zygote) that splits in the early stages of MITOSIS to produce two individuals who carry the same complement of genes; that is, they are clones, with identical DNA. For every 1,000 pregnancies, there are, on average, 3 to 4 MZ twins. Also called **identical twins**. Compare DIZYGOTIC TWINS. See also TWIN STUDY.

**Monte Carlo research** a SIMULATION technique in which a large number of samples with specific selected properties (e.g., NORMALITY, size, model type) are generated by computer in order to assess the behavior of a statistical procedure or PARAMETER under varying conditions. For example, an investigator might conduct Monte Carlo research with a large number of normally distributed samples of various sizes (e.g.,  $N = 50, 100, 200, 400, 800$ ) in which a structural model is applied to characterize the data. Results would help the researcher determine the conditions under which the model behaves correctly (i.e., fits the data) as well as shows its limits (e.g., not fitting well with sample sizes less than 200). Also called **Monte Carlo method**.

**Montessori method** an educational system that focuses on the development of young children's initiative and emphasizes self-directed learning. The method is characterized by multiage classrooms, a special set of educational materials, student-chosen work in long time blocks, collaboration, the absence of grades and tests, and individual and small group instruction in both academic and social skills. The system was developed in Italy, with the first American school established in 1911. [Maria MONTESSORI]

**Montreal Cognitive Assessment (MoCA)** a brief screening tool designed to assist clinicians in identifying MILD COGNITIVE IMPAIRMENT (MCI) and possible early dementia. Including items that test executive function, visuo-constructional skills, naming, memory, attention, language, conceptual thinking, and orientation to time and place, the assessment takes approximately 10 minutes to administer; the maximum score is 30 points, with a score of 26 or higher considered normal. MoCA is reported to have greater sensitivity in the detection of both MCI and early dementia than the commonly used MINI-MENTAL STATE EXAMINATION. [developed in 2005 by Canadian neurologist Ziad S. Nasreddine and colleagues]

**mood** *n.* 1. any short-lived emotional state, usually of low intensity (e.g., a cheerful mood, an irritable mood). 2. a disposition to respond emotionally in a particular way that may last for hours, days, or even weeks, perhaps at a low

level and without the person knowing what prompted the state. Moods differ from EMOTIONS in lacking an object; for example, the emotion of anger can be aroused by an insult, but an angry mood may arise when one does not know what one is angry about or what elicited the anger. Disturbances in mood are characteristic of MOOD DISORDERS. 3. in linguistics, a category of a verb used to identify a clause or sentence as being a statement, question, command, expression of wish, and so on. See IMPERATIVE; INDICATIVE; INTERROGATIVE; SUBJUNCTIVE.

**mood-altering drug** a substance that changes the affective state of the individual through pharmacological action, usually without clouding of consciousness. Such drugs include certain tranquilizing, sedating, and antidepressant agents.

**mood-as-information theory** a theory postulating that a person often uses his or her current emotional state or mood as a piece of information when making social judgments. The theory also proposes that current affective states can influence the processing strategy that people adopt when making decisions. Specifically, negative affective states indicate something problematic in the current social situation and thus encourage careful and deliberative processing of social information. In contrast, positive affective states indicate that the current social situation is satisfactory and thus encourage less effort in deliberative processing of social information. [originally developed by U.S. psychologists Norbert Schwarz (1953– ), Gerald L. Clore (1939– ), and their colleagues]

**mood-as-resource model** a theory stating that positive moods function as useful tools to individuals by making them better able to process goal-related information, better at coping with negative stimuli, and more flexible and constructive in dealing with situational demands.

**mood congruent** relating to a consistency or agreement between a particular expressed feeling and the general emotional context within which it occurs. Thus, crying at a time of sadness or personal distress is viewed as mood congruent. Similarly, in psychiatric diagnosis, the term relates to a consistency between the expression of a particular symptom or behavior with those characteristics or patterns of ideation or action used to classify a particular mental disorder. In both instances, inconsistencies are described as **mood incongruent**.

**mood-congruent memory** consistency between one's mood state and the emotional context of memories recalled. During positive mood states, individuals will tend to retrieve pleasant memories, whereas during negative mood states, negative thoughts and associations will more likely come to mind. However, there is evidence that the effects of these different mood states on memory are asymmetrical, with positive moods having stronger effects on memory retrieval than negative moods. When faced with an unpleasant emotional state, individuals may regulate it by retrieving pleasant thoughts and memories, thus reducing or reversing a negative mood-congruency effect. [first proposed in 1985 by U.S. social psychologist Alice M. Isen (1942–2012)]

**mood-congruent psychotic feature** a DSM-IV-TR and DSM-5 specification for any delusion or hallucination that is thematically consistent with either sadness or mania when it occurs in severe MAJOR DEPRESSIVE EPISODES, MANIC EPISODES, or MIXED EPISODES.

**mood-dependent memory** the finding that memory

for an event can be recalled more readily when one is in the same emotional mood (e.g., happy or sad) as when the memory was initially formed. See also CONTEXT-SPECIFIC LEARNING; STATE-DEPENDENT MEMORY.

**mood disorder** in *DSM-IV-TR*, a psychiatric condition in which the principal feature is a prolonged, pervasive emotional disturbance, such as a DEPRESSIVE DISORDER, BIPOLAR DISORDER, or SUBSTANCE-INDUCED MOOD DISORDER. Also included are **mood disorders due to a general medical condition**, in which attendant physiological disruptions are believed to produce the emotional changes, and **mood disorder not otherwise specified**, which does not meet the diagnostic criteria for any of the specific mood disorders. The term **chronic mood disorder** is applied when symptoms rarely remit. In *DSM-5*, mood disorders are divided into two categories: bipolar and related disorders, which include bipolar disorder and its subtypes (e.g., bipolar I, bipolar II, CYCLOTHYMIC DISORDER); and depressive disorders (e.g., MAJOR DEPRESSIVE DISORDER, persistent depressive disorder or DYSTHYMIC DISORDER, PREMENSTRUAL DYSPHORIC DISORDER). Also called **affective disorder**.

**mood incongruent** see MOOD CONGRUENT.

**mood-incongruent psychotic feature** a *DSM-IV-TR* and *DSM-5* specification for any delusion or hallucination that occurs in severe MAJOR DEPRESSIVE EPISODES, MANIC EPISODES, or MIXED EPISODES but whose content does not include themes of sadness or mania.

**mood induction** any method for producing a negative or positive change in mood, often by selectively reminding individuals of pleasant or unpleasant aspects of their lives. See VELTEN TECHNIQUE.

**mood stabilizer** any of various drugs used in the treatment of cyclic mood disorders (BIPOLAR DISORDERS and CYCLOTHYMIC DISORDER). Because they reduce the symptoms of mania or manic episodes, mood stabilizers are sometimes known as **antimanic drugs**. LITHIUM is usually the FIRST-LINE MEDICATION for bipolar I disorder, but ANTICONVULSANTS, such as VALPROIC ACID, CARBAMAZEPINE, and ox-carbazepine, are becoming more commonly used for this condition and are now preferred for other cyclic disorders. The CALCIUM-CHANNEL BLOCKER verapamil is also being investigated as a mood stabilizer. Mood stabilizers are occasionally used in the management of severe affective lability found in some personality disorders (e.g., borderline personality disorder).

**mood swing** a nonspecific term for any oscillation in mood, particularly between feelings of happiness and sadness. It may range in intensity from normal fluctuations to such pathological disturbances as CYCLOTHYMIC DISORDER or BIPOLAR DISORDER. See also LABILE AFFECT.

**moon illusion** see SIZE-DISTANCE PARADOX.

**moon-phase studies** research into the possible relationship between the phases of the moon and episodes of violence or mental disorder. The relationship has long been expressed in folklore, folk medicine, and language itself (e.g., the words *lunacy* and *lunatic*). Methodologically sound studies of the effects of moon phase on behavior, however, are infrequent.

**moral** *adj.* **1.** relating to the distinction between right and wrong behavior. **2.** describing a behavior that is considered ethical or proper, or a person or group who adheres to a MORAL CODE. See also MORALS.

**moral absolutism** the belief that the morality or immo-

ality of an action can be judged according to fixed standards of right and wrong. According to Jean PIAGET, moral absolutism is characteristic of young children in the HETERONOMOUS STAGE of moral development, who interpret laws and rules as absolute. See MORAL REALISM. Compare MORAL RELATIVISM; SITUATION ETHICS.

**moral code** a set of rules concerning right and wrong behavior accepted by a society or group as binding on all members or by an individual as binding on himself or herself.

**moral commitment** in U.S. sociologist Michael P. Johnson's tripartite model of marital commitment, a form of commitment in which a person feels tied to a relationship because of a sense of moral or ethical obligation or duty. Moral commitment often reflects religious or societal beliefs, but it may also derive from an individual's values about the importance of acting in a manner that affirms one's vows, promises, and obligations. Compare PERSONAL COMMITMENT; STRUCTURAL COMMITMENT.

**moral consistency** a stable, predictable pattern of moral attitudes shown by the same individual in different settings and over time.

**moral determinism** see ETHICAL DETERMINISM.

**moral development** the gradual formation of an individual's concepts of right and wrong, conscience, ethical and religious values, social attitudes, and ethical behavior. Some of the major theorists in the area of moral development are Sigmund FREUD, Jean PIAGET, Erik ERIKSON, and Lawrence KOHLBERG.

**moral dilemma** see ETHICAL DILEMMA.

**morale** *n.* the level of enthusiasm, sense of purpose, or confidence in the worthiness of a goal that can affect a person's or a group's overall performance in working toward that goal, especially when under pressure.

**moral exclusion** a psychological process whereby opponents in a conflict come to view each other as undeserving of morally mandated rights and protections. Moral exclusion can lead to a range of acts, from DISCRIMINATION to TERRORISM and GENOCIDE. See also DEHUMANIZATION.

**moral independence** the state an older child has achieved when he or she can recognize that an act's morality may be substantially determined by its motive and other subjective considerations, rather than by its consequences. Moral independence is a mark of the AUTONOMOUS STAGE of moral development. See also MORAL RELATIVISM. Compare MORAL REALISM. [proposed by Jean PIAGET]

**morality** *n.* a system of beliefs or set of values relating to right conduct, against which behavior is judged to be acceptable or unacceptable.

**morality of constraint** the morality of young children (up to roughly age 10), which consists of an unquestioning, unchallenging obedience to the rules laid down by parents. Obedience is based on fear and on the perception that rules established by parents are fixed, eternal, and sure to be valid. Compare MORALITY OF COOPERATION. [proposed by Jean PIAGET]

**morality of cooperation** the morality of children ages 10 to 11, characterized by the perception that rules are social conventions that can be challenged and modified when concerned parties agree. The child willingly accepts rules and adheres to them on the basis of reason and not on the basis of fear or in the spirit of unquestioning obedi-



ence. Compare MORALITY OF CONSTRAINT. [proposed by Jean PIAGET]

**moral judgment** see ETHICAL JUDGMENT.

**moral masochism** in psychoanalytic theory, the unconscious need for punishment by authority figures caused by unconscious guilt arising from the repressed OEDIPUS COMPLEX. It is a nonsexual form of MASOCHISM.

**moral nihilism** the assertion that there exist no valid moral principles. This position is distinct from moral RELATIVISM, which merely claims that there are no universally valid moral principles. Also called **ethical nihilism**.

**moral philosophy** see ETHICS.

**moral realism** the type of thinking characteristic of younger children, who equate good behavior with obedience just as they equate the morality of an act only with its consequences. For example, 15 cups broken accidentally would be judged to be a far worse transgression than 1 cup broken mischievously, because more cups are broken. Moral realism shapes the child's thinking until the age of about 8, when the concepts of intention, motive, and extenuating circumstances begin to modify the child's early MORAL ABSOLUTISM. Compare MORAL RELATIVISM. [postulated by Jean PIAGET]

**moral relativism** the belief that the morality or immorality of an action is determined by social custom rather than by universal or fixed standards of right and wrong. According to Jean PIAGET, moral relativism is characteristic of children in the AUTONOMOUS STAGE of moral development, who consider the intention behind an act along with possible extenuating circumstances when judging its rightness or wrongness. Compare MORAL ABSOLUTISM; MORAL REALISM; SITUATION ETHICS.

**morals** *pl. n.* the ethical values or principles that people use to guide their behavior. See also MORAL; MORALITY.

**moral therapy** a form of psychotherapy from the 19th century based on the belief that a person with a mental disorder could be helped by being treated with compassion, kindness, and dignity in a clean, comfortable environment that provided freedom of movement, opportunities for occupational and social activity, and reassuring talks with physicians and attendants. This approach advocating humane and ethical treatment was a radical departure from the prevailing practice at that time of viewing the "insane" with suspicion and hostility, confining them in unsanitary conditions, and routinely abusing them through the use of such practices as mechanical restraint, physical punishment, and bloodletting. Moral therapy originated in the GHEEL COLONY, Belgium, during the 13th century, but it came to fruition in the 19th century through the efforts of Philippe Pinel (see SALPÊTRIÈRE) and Jean Esquirol (1772–1840) in France; William Tuke (1732–1822) in England; and Benjamin Rush (1745–1813), Isaac Ray (1807–1881), and Thomas Kirkbride (1809–1883) in the United States. The THERAPEUTIC COMMUNITY of today has its roots in this movement. Also called **moral treatment**.

**moratorium** *n.* in Erik ERIKSON'S EIGHT STAGES OF PSYCHOSOCIAL DEVELOPMENT, the experimental period of adolescence in which, during the task of discovering who one is as an individual separate from family of origin and as part of the broader social context, young people try out alternative roles before making permanent commitments to an IDENTITY. Adolescents who are unsuccessful at negotiating

this stage risk confusion over their role in life. See IDENTITY VERSUS IDENTITY CONFUSION. See also IDENTITY STATUS MODEL.

**morbid** *adj.* unhealthy, diseased, or otherwise abnormal.

**morbid dependency** excessive reliance on or need for another person or situation such that the dependent person has difficulty functioning independently. See DEPENDENCY NEED.

**morbidity** *n.* a pathological (diseased) condition or state, either biological or functional.

**morbidity rate** the incidence of disease, expressed as a ratio denoting the number of people in a population who are ill or have a specific disease compared with the number who are well.

**morbidity risk** in EPIDEMIOLOGY, the statistical chance that an individual will develop a certain disease or disorder. The probability is often expressed in terms of risk factors, using 1.0 as a base: The larger the number, the greater the morbidity risk.

**morbid jealousy** see DELUSIONAL JEALOUSY.

**morbid obesity** the condition of having a BODY MASS INDEX over 39 or weighing 50% to 100% over one's ideal weight. Morbid obesity is associated with diabetes mellitus, heart disease, joint pain, sleep apnea, and stroke.

**Morel's syndrome** see STEWART–MOREL SYNDROME.

**mores** *pl. n.* social customs and usages that are accepted by members of a culture or population as morally essential and necessary for its proper functioning.

**Morgan's canon** see LLOYD MORGAN'S CANON.

**moria** *n.* an obsessive or morbid desire to joke, as in some cases of DEMENTIA, particularly when the humor is inappropriate.

**Morita therapy** a therapy for SHINKEISHITSU consisting of an initial period of strict and isolated bed rest followed by step-by-step OCCUPATIONAL THERAPY and final reintegration into job and family. A central concept is the attainment of **arugamama**, an attitude of acceptance toward one's self and one's feelings. [Shoma **Morita** (1874–1938), Japanese psychiatrist]

**morning-after pill** a popular name for postcoital, or emergency, oral contraception. It consists of two doses of a progestin, or a combined formulation of a progestin and an estrogen, taken at spaced intervals no later than 72 hours after intercourse.

**morning-glory seeds** seeds of the plant *Rivea corymbosa*, which contain psychoactive agents and have been used as HALLUCINOGENS, notably in 16th-century Mexico.

**morning sickness** nausea and vomiting experienced by some women during the first months of pregnancy or throughout the entire pregnancy. Although morning sickness usually occurs soon after arising in the morning, some women have the symptoms throughout the day. Also called **nausea gravidarum**.

**moron** *n.* an obsolete name for a person with MILD MENTAL RETARDATION. [first described by Henry Herbert GODDARD]

**Moro reflex** a reflex in which a newborn infant, when startled, throws out the arms, extends the fingers, and often quickly brings the arms back together as if clutching or embracing. In normal, healthy babies, the Moro reflex

disappears during the 1st year. Also called **Moro response**. See also STARTLE RESPONSE. [Ernst **Moro** (1874–1951), German physician]

—**morph** *suffix* form or structure (e.g., ECTOMORPH).

**morpheme** *n.* in linguistic analysis, a unit of meaning that cannot be analyzed into smaller such units. For example, the word *books* is composed of two morphemes, *book* and the suffix *-s* signifying a plural noun. See BOUND MORPHEME; FREE MORPHEME. —**morphemic** *adj.*

**morphine** *n.* the primary active ingredient in OPIUM, first synthesized in 1806 and widely used as an analgesic and sedative. It interacts predominantly with the mu OPIOID RECEPTOR. Prolonged administration or abuse can lead to dependence and to withdrawal symptoms on cessation. The substance is 10 times as potent as opium for pain relief. See OPIOID INTOXICATION; OPIOID USE DISORDER.

**morpho-** (**morph-**) *combining form* form or structure.

**morphogenesis** *n.* the development of the form and structure of an organism. —**morphogenetic** or **morphogenic** *adj.*

**morphological index** the index or relationship based on body proportions that describes a particular body build.

**morphology** *n.* **1.** the branch of biology concerned with the forms and structures of organisms. **2.** the branch of linguistics that investigates the form and structure of words. It is particularly concerned with the regular patterns of INFLECTION and word formation in a language. With SYNTAX, morphology is one of the two traditional subdivisions of GRAMMAR. —**morphological** *adj.*

**morphometrics** *n.* the theory and technique associated with the physical measurement of living organisms and their component parts. Studies of size, shape, and structure are important not only in biology but also in neuropsychology and medical psychology. For example, researchers interested in morphometrics could study the form and structure of the brain in individuals who have various physical or psychological disorders. By contrast, PSYCHOMETRICS specifically focuses on the measurement of psychological phenomena.

**morphophilia** *n.* interest in sexual partners whose body characteristics (e.g., height, weight, skin and hair color) are different from one's own.

**morphophoneme** *n.* an abstract phonological unit used to represent the set of PHONEMES that constitute the ALLOMORPHS of a single MORPHEME.

**morphophonemics** *n.* a branch of linguistics that analyzes the interaction between MORPHOLOGY and PHONOLOGY, especially regarding the use of different ALLOMORPHS of the same morpheme in different phonological contexts. —**morphophonemic** *adj.*

**Morris water maze** a device used to test spatial learning in nonhuman animals, consisting of a water-filled tank with a platform hidden underwater. An animal is placed in the water and can escape only by finding and climbing on the hidden platform. Typically, a variety of external cues are provided for spatial reference. The Morris water maze is often used to evaluate the effects of brain lesions or drug manipulations on spatial learning and memory. [devised in 1981 by Richard G. M. **Morris**, British neuroscientist]

**morsicatio buccarum** habitual biting of the inside of

the cheeks (buccal mucosa), sometimes causing lesions or the formation of white excess tissue.

**morsicatio labiorum** see LIP BITING.

**mortality** *n.* **1.** the state or condition of being subject to illness, decline, and death. **2.** the death rate in a population.

**mortality effect** the degree to which circumstances or behavior increase or decrease the incidence of death. For example, a behavioral health researcher could study the mortality effects of a fatty diet and lack of exercise, which could lead to early death from heart disease.

**mortality rate** a measure of how often death occurs, usually with respect to a specific illness, characteristic, behavior, or population. For example, a researcher could estimate the mortality rate for individuals who have been diagnosed with cancer.

**mortality salience** awareness of the inevitability of one's death. According to TERROR MANAGEMENT THEORY, mortality salience, coupled with DEATH ANXIETY, is a motivating force behind a diverse set of actions designed to defend oneself or one's social group when threatened.

**mort douce** primarily in literary contexts, a peaceful death (French, literally "sweet death") in which all tensions are released in a manner reminiscent of the fulfillment of sexual intercourse.

**morula** *n.* an early stage of embryological development, extending from the first CLEAVAGE of the zygote until the BLASTULA is formed by further divisions of daughter cells.

**mosaicism** *n.* a condition of genetic abnormality in which an individual is made up of two or more different cell lines derived from a single zygote. In a typical case, an individual with mosaicism will have some cells with the usual number of chromosomes and others with an extra chromosome.

**mosaic test** a PROJECTIVE TECHNIQUE in which the participant, usually a child, is asked to "make anything you like" out of about 400 pieces of different colors and shapes. Mosaic materials are also used in some intelligence tests.

**mossy fiber** any of certain nerve fibers that extend from the DENTATE GYRUS to the HIPPOCAMPUS, where they synapse in area CA3.

**most comfortable loudness (MCL)** the sound level at which speech is most comfortable for an individual.

**mother archetype** in Carl JUNG's ANALYTIC PSYCHOLOGY, the primordial image of the generative and sustaining mother figure that has occurred repeatedly in various cultural concepts and myths since ancient times and is located within the COLLECTIVE UNCONSCIOUS.

**motherese** *n.* the distinctive form of speech used by parents and other caregivers with infants and young children. It is characterized by grammatically simple and phonologically clear utterances, often delivered in a high-pitched sing-song intonation.

**mother figure** **1.** a person who occupies the mothering role in relation to a child: a MOTHER SURROGATE. **2.** in psychoanalytic theory, a person onto whom the patient transfers feelings and attitudes that he or she had toward the real mother or the primary caregiver. Also called **mother substitute**.

**mothering** *n.* the process of nurturing, caring for, and protecting a child by a mother or maternal figure.

**Mothers Against Drunk Driving (MADD)** an organization whose mission is to stop people from driving while under the influence (DUI) of alcohol or other drugs and to support the victims of car collisions caused by DUI drivers as well as to aid the victims' families. Launched as a grassroots effort in 1980 by a group of mothers whose children had been killed by drunk drivers, MADD was known as **Mothers Against Drunk Drivers** until 1984. Its mission has since expanded to include efforts to prevent underage drinking.

**mother substitute** **1.** see MOTHER FIGURE. **2.** see MOTHER SURROGATE.

**mother surrogate** a substitute for an individual's biological mother (e.g., a sister, grandmother, stepmother, adoptive mother), who assumes the responsibilities of that person and may function as a role model and significant attachment figure. Harry HARLOW's classic research demonstrated that young monkeys preferred a mother surrogate covered in cloth to one that was simply a wire frame, even though the latter was the source of food. Also called **mother figure**; **surrogate mother**.

**motility** *n.* the capacity for spontaneous, independent movement. —**motile** *adj.*

**motion aftereffect (MAE)** the perception that a stationary object or scene moves following prolonged fixation of a moving stimulus. The illusory movement is in the opposite direction to the movement of the stimulus that induced the effect. The best known example is the **waterfall illusion**, produced by watching a waterfall for a period and then shifting one's gaze to the stationary surrounding scenery; the stationary objects appear to move upward.

**motion agnosia** see AKINETOPSIA.

**motion and time study** see TIME AND MOTION STUDY.

**motion detection** the ability to detect movement. Many cells in the visual system act as motion detectors, and some are also sensitive to the direction of movement.

**motion economy** a set of principles for the efficient performance of vocational tasks. Motion economy was developed largely by U.S. engineer Frank Gilbreth (1868–1924) and his wife, U.S. engineer and psychologist Lillian Moller GILBRETH. Its recommendations include simultaneous use of both hands moving in opposite directions; use of continuous, curved movements rather than straight line motions; use of the fewest movements possible; use of such items as jigs and fixtures to relieve hands of unnecessary work as “holding devices”; arrangement of work to permit an easy, natural rhythm; and arrangement of work to avoid long reaches.

**motion in limine** a formal proposal to a court, usually made before a trial begins (Latin *in limine*, “threshold”), requesting that certain statements, questions, or evidence not be introduced into the proceedings.

**motion parallax** the interrelated movements of elements in a scene that can occur when the observer moves relative to the scene. Motion parallax is a DEPTH CUE.

**motion sickness** a type of discomfort marked by nausea, dizziness, headache, pallor, cold sweats, and in some cases vomiting and prostration. The cause is irregular or abnormal motion that disturbs the normal sense of balance maintained by the semicircular canals of the inner

ear. The condition may be aggravated or initiated by an emotional disturbance, such as anxiety or grief. Also called **kinesia**.

**motivated forgetting** a memory lapse motivated by a desire to avoid a disagreeable recollection. It is one of the cognitive mechanisms that have been suggested as a cause of delayed memories of childhood trauma.

**motivation** *n.* **1.** the impetus that gives purpose or direction to behavior and operates in humans at a conscious or unconscious level (see UNCONSCIOUS MOTIVATION). Motives are frequently divided into (a) physiological, primary, or organic motives, such as hunger, thirst, and need for sleep; and (b) personal, social, or secondary motives, such as affiliation, competition, and individual interests and goals. An important distinction must also be drawn between internal motivating forces and external factors, such as rewards or punishments, that can encourage or discourage certain behaviors. See EXTRINSIC MOTIVATION; INTRINSIC MOTIVATION. **2.** in CONDITIONING, the variables, collectively, that alter the effectiveness of REINFORCERS. Compare ESTABLISHING OPERATION. **3.** a person's willingness to exert physical or mental effort in pursuit of a goal or outcome. See WORK MOTIVATION. **4.** the act or process of encouraging others to exert themselves in pursuit of a group or organizational goal. The ability to motivate followers is an important function of LEADERSHIP. —**motivate** *vb.* —**motivated** *adj.* —**motivational** *adj.*

**motivational enhancement therapy** a transtheoretical treatment, based on the STAGES OF CHANGE, that matches clients to interventions on the basis of individual differences in readiness to change. This treatment was initially applied to substance abuse but has now generalized to other problem behaviors. See also MOTIVATIONAL INTERVIEWING.

**motivational factor** any physiological or psychological factor that stimulates, maintains, and directs behavior. Examples are basic PHYSIOLOGICAL NEEDS, interests, and EXTRINSIC REWARDS.

**motivational hierarchy** see MASLOW'S MOTIVATIONAL HIERARCHY.

**motivational interviewing** a client-centered yet directive approach for facilitating change by helping people to resolve ambivalence and find intrinsic reasons for making needed behavior change. Originally designed for people with substance use disorders, motivational interviewing is now broadly applied in health care, psychotherapy, correctional, and counseling settings. It is particularly applicable when low intrinsic motivation for change is an obstacle. Rather than advocating for and suggesting methods for change, this approach seeks to elicit the client's own goals, values, and motivation for change and to negotiate appropriate methods for achieving it. See also MOTIVATIONAL ENHANCEMENT THERAPY. [developed by U.S. clinical psychologist William R. Miller (1947– ) and South African-born British clinical psychologist Stephen Rollnick]

**motivational selectivity** an explanation for the different ways that an event or object may be perceived by different people based on the influence of individual motives on cognitive processes. See SELECTIVE PERCEPTION.

**motivational style** the characteristic manner in which an individual seeks or finds the motivation to perform a task. Categories are based on individual differences in motivation, including but not limited to intrinsic–extrinsic mo-

tivation, mastery orientation, and competitiveness. The notion of motivational styles is particularly used in education, business, and sport to help people recognize both strengths and weaknesses and develop strategies to improve learning and performance.

**motivation research** in consumer psychology, research that uses clinical, intensive, and qualitative approaches to reveal the true motives behind the decisions of individuals to purchase a product. Motivation research is also employed to determine why consumers may refuse to buy a certain product.

**motivators** *pl. n.* in the TWO-FACTOR THEORY OF WORK MOTIVATION proposed by U.S. clinical psychologist Frederick Herzberg (1923–2000), those aspects of the working situation that can increase satisfaction and motivation. Motivators involve the work itself rather than the work context and are increased by means of JOB ENRICHMENT and vertical loading (see JOB ENLARGEMENT). Compare HYGIENE FACTORS.

**motive** *n.* **1.** a specific physiological or psychological state of arousal that directs an organism's energies toward a goal. See MOTIVATION. **2.** a reason offered as an explanation for or cause of an individual's behavior.

**motoneuron** *n.* see MOTOR NEURON.

**motor** *adj.* involving, producing, or referring to muscular movements.

**motor aphasia** a writing disorder resulting from impairment of muscular coordination in the hand.

**motor amimia** see AMIMIA.

**motor amusia** see AMUSIA.

**motor aphasia** a form of nonfluent APHASIA characterized by difficulty in producing articulate speech. An example is BROCA'S APHASIA, for which motor aphasia is often used as a synonym. See also APHEMIA.

**motor aprosodia** an inability to produce the emotional inflections of language, that is, to express the normal rhythm, pitch, and "melody" of speech. This is most often due to damage in the right frontal lobe of the brain. Compare SENSORY APROSODIA.

**motor area** an area of the MOTOR CORTEX that, when stimulated, produces movements of skeletal muscles in various parts of the body. It has SOMATOTOPIC ORGANIZATION, with individual neurons controlling a specific movement direction of an associated body part that might involve coordinated action of several muscles. Also called **Brodman's area 4**.

**motor behavior** **1.** aspects of human movement that include MOTOR CONTROL, MOTOR DEVELOPMENT, and MOTOR LEARNING. **2.** see MOTOR FUNCTION.

**motor control** the influence of neurophysiological factors on human movement.

**motor conversion symptoms** one of two types of symptoms of CONVERSION DISORDER, the other being SENSORY CONVERSION SYMPTOMS. Examples of motor conversion symptoms include impaired coordination and balance, paralysis or weakness confined to a specific area of the body, difficulty in swallowing, aphonia (loss of voice), and urinary retention.

**motor coordination** the cooperative action of reflexive

(or involuntary) and voluntary movements to carry out complex activities.

**motor cortex** the region of the frontal lobe of the brain responsible for the control of voluntary movement. It is divided into two parts. The **primary motor cortex**, or MOTOR AREA, is the main source of neurons in the CORTICOSPINAL TRACT. The **secondary** (or **nonprimary**) **motor cortex**, made up of the PREMOTOR AREA and the SUPPLEMENTARY MOTOR AREA, is specialized for planning upcoming movements and learning new movements. Lesions in the primary motor cortex due to stroke or traumatic injury usually cause initial paralysis that may improve to a condition involving weakness and poor muscle tone. Lesions in the secondary motor cortex usually cause disruptions in MOTOR PLANNING for complex movements (see APRAXIA). Also called **motor strip**.

**motor development** the changes in motor skills that occur over an entire lifespan, which reflect the development and deterioration of muscular coordination and control and are also affected by personal characteristics, the environment, and interactions of these two factors.

**motor disorder** loss of the ability to perform simple or complex acts or skills because of temporary or permanent damage to tissues in the premotor or motor areas of the central nervous system. The cause of the damage may be a congenital or inherited defect, injury, surgical excision, or a psychochemical factor.

**motor disturbance** any disruption of motor behavior, such as hyperactivity, retarded activity, automatism, repetitive movements, rigid posture, grimacing, or tics.

**motor dominance** the controlling influence of one cerebral hemisphere shown in motor activity, such as writing or throwing a ball.

**motor end plate** see END PLATE.

**motor equivalence** the ability to use different movements, produced by either the same or different parts of the body, to perform a task under different conditions. For example, the task of writing one's name may be performed (a) on paper, with a pen held in the hand, by moving the fingers and wrist; (b) on a blackboard, with chalk held in the hand, by moving the arm; or (c) in the sand, using a toe, by moving the leg.

**motor evoked potential** a type of EVOKED POTENTIAL associated with motor neurons and motor cortex. For example, activity in spinal motor neurons may be studied by directly stimulating motor areas in the brain (see TRANSCRANIAL MAGNETIC STIMULATION) and observing the evoked potential in the spinal cord. Compare SENSORY EVOKED POTENTIAL.

**motor function** any activity that results from stimulation of MOTOR NEURONS, including glandular activity as well as reflexes and voluntary and involuntary muscle contractions. Also called **motor behavior**.

**motor homunculus** a figurative representation, in distorted human form, of the SOMATOTOPIC ORGANIZATION of the MOTOR CORTEX as originally mapped by U.S.-born Canadian neurosurgeon Wilder Penfield (1891–1976). Within this mapping, the size of the brain region associated with a body part reflects the complexity of the activities carried out with that part of the body rather than its actual size. Compare SENSORY HOMUNCULUS.

**motor imitation** the ability, particularly striking in in-

phants and children, to imitate movements, facial expressions, and so forth after viewing them and without practice.

**motor impersistence** a neurologically based inability to sustain a simple act or posture, such as keeping the mouth open or turning the head, for longer than a few seconds. [identified in 1956 by Canadian physician Charles Miller Fisher (1913–2012)]

**motor learning** the process of acquiring and perfecting motor skills and movements, either simple acts or complex sequences of movements, which comes about through varying types of practice, experience, or other learning situations. Motor learning results in **muscle memory**, whereby the acquired motor skill can be performed without conscious effort, as in playing a musical instrument, climbing stairs, or riding a bike. See **MOTOR DEVELOPMENT**. See also **THREE-STAGE THEORY**.

**motor memory** knowledge of motor skills: the capacity to remember previously executed movements, such as the steps of a dance or the actions involved in tying one's shoes. Compare **VERBAL MEMORY**; **VISUAL MEMORY**.

**motor milestones** the significant achievements in **MOTOR DEVELOPMENT** that occur during an infant's first 2 years. Although individual children vary, on average infants will (a) support their head while prone at 3 months; (b) support their head in other positions at 4 months; (c) sit with props at 5 months; (d) sit supported by their hands and reach with one hand at 6 months; (e) pick up small items, using thumb opposition, and stand if holding onto a railing at 8 months; (f) creep, pull to a standing position, and take side steps while holding onto a support at 10 months; (g) walk alone, throw a ball, and walk backwards, sideways, upstairs, and downstairs with assistance at 16 months; and (h) run and walk up and down steps easily or with minimal assistance at 24 months. See also **DEVELOPMENTAL SEQUENCE**.

**motor neglect** underutilization of or failure to use motor functions on one side of the body despite the presence of normal strength, reflexes, and sensibility. It results from damage to various cerebral structures, including the thalamus and frontal and parietal lobes.

**motor nerve** any nerve that terminates in a muscle or gland, conveying impulses from the brain or spinal cord.

**motor neuron** a neuron whose axon connects directly to muscle fibers. Because motor neurons are the final stage of output from the nervous system and are the only means of stimulating muscle fibers, they are known as the **final common path**. There are two types: **lower motor neurons** (or **alpha motor neurons**), found in the cranial nerves and the **ANTERIOR HORN** of the spinal cord and that are responsible for muscle contraction; and **upper motor neurons** (or **gamma motor neurons**), found in the **CORTICOSPINAL TRACT** and that modulate the sensitivity of **MUSCLE SPINDLES**, thus influencing activity of the lower motor neurons. Also called **motoneuron**.

**motor neuron disease** any one of a group of degenerative disorders of the lower motor neurons or both the lower and upper motor neurons, marked by progressive weakness and wasting of skeletal muscles and paralysis. This group of disorders includes several forms, but—especially in the United States—the term often is applied specifically to **AMYOTROPHIC LATERAL SCLEROSIS**.

**motor neuron lesion** any damage to a motor neuron, particularly if it involves the cell body.

**motor neuron pool** a collection of motor neurons whose axons all connect to the same muscle, although the motor neurons may be scattered through a few levels of the spinal cord.

**motor overflow** a condition in which intentional motor behavior in one muscle group is accompanied by unintentional movement in another muscle group as a result of neurological dysfunction. For instance, while performing a fine motor task with the right hand, the left hand may move as well. Also called **syndynesia**; **syndynesia**.

**motor pathway** a **NEURAL PATHWAY** that originates in the brain or brainstem and descends down the spinal cord to control the motor neurons. The motor pathways can control posture, reflexes, and muscle tone, as well as the conscious voluntary movements associated with the **MOTOR SYSTEM**.

**motor planning** the ability of the brain to conceive, organize, and carry out a sequence of unfamiliar actions.

**motor primacy theory** the concept that body mechanisms associated with motor nerve functions develop before sensory nerve mechanisms.

**motor program** a stored representation, resulting from **MOTOR PLANNING** and refined through practice, that is used to produce a coordinated movement. Motor programs store the accumulated experience underlying skill at a task. See also **GENERALIZED MOTOR PROGRAM**.

**motor root** see **VENTRAL ROOT**.

**Motor scale** see **BAYLEY SCALES OF INFANT AND TODDLER DEVELOPMENT**.

**motor set** preparatory adjustments or readiness to make a certain response or begin an activity, such as prompted by the call "Ready, Set, Go!" at the start of a foot race.

**motor speech disorder** any of several communication disorders arising from inaccurate production of speech sounds because of lack of strength or coordination of the muscles involved in speaking, as occurs in **CEREBELLAR ATAXIA** or **PARKINSON'S DISEASE**.

**motor strip** see **MOTOR CORTEX**.

**motor system** the complex of skeletal muscles, neural connections with muscle tissues, and structures of the central nervous system associated with motor functions. Also called **neuromuscular system**.

**motor tension** a state of muscle tension in which the individual is restless and tires easily. This symptom is associated with **GENERALIZED ANXIETY DISORDER**.

**motor test** any test designed to measure motor skills, ranging from **GROSS MOTOR** to **FINE MOTOR** manipulation.

**motor theory of speech perception** the view that speech perception relies on the processes that are used in speech production, such that listeners interpret a spoken message by nonconsciously computing what motor operations would be required to produce that sequence of sounds. The theory was advanced as an explanation of **CATEGORICAL PERCEPTION** in the processing of speech sounds. [proposed by U.S. psychologist Alvin M. Liberman (1917–2000)]

**motor tract** any bundle of nerve fibers that convey signals from the higher centers of the brain to the spinal cord.

**motor unit** a group of muscle fibers that respond collectively and simultaneously because they are connected by nerve endings to a single motor neuron.

**mouches volantes** see MUSCAE VOLITANTES.

**mountain-climber's syndrome (mountain sickness)** see ALTITUDE SICKNESS; ACUTE MOUNTAIN SICKNESS.

**mourning** *n.* the process of feeling or expressing grief following the death of a loved one, or the period during which this occurs. It typically involves apathy and defecation, loss of interest in the outside world, and diminution in activity and initiative. These reactions are similar to depression but are less persistent and are not considered pathological. Other mourning reactions may include anger (e.g., toward the deceased for dying); a sense of relief (e.g., that the deceased is no longer suffering); anxiety about the repercussions of losing someone upon whom the bereaved may have depended; and physical signs (e.g., fatigue, loss of appetite). See also BEREAVEMENT.

**mouse-movement adapter** an adaptive device for a computer mouse that is used to control the movement of the pointer on the screen. The device is designed for use by individuals with motor disabilities who are not able to manipulate a standard computer mouse manually.

**mouthstick** *n.* for individuals with mobility impairments, a type of PHYSICAL EXTENSION DEVICE consisting of a piece fitting into the mouth of the user that is attached to an extension with a tip that may press against, grasp, pull, or point to an object. It may be used, for example, to press an elevator button, turn on a light switch, turn a page in a book, or type on a keyboard.

**movement** *n.* a brief, unitary activity of a muscle or body part. A movement is less complex than an ACT.

**movement chaining** the generation of complex movement sequences whereby the occurrence of, or feedback from, each movement in the sequence acts as the stimulus to initiate the next. [originally described by Charles Scott SHERRINGTON in relation to sequences of reflexes]

**movement disorder** any abnormality in motor processes, relating primarily to posture, coordination, or locomotion. See also MEDICATION-INDUCED MOVEMENT DISORDER.

**movement illusion** an illusion that an object is in motion when it is not.

**movement learning** see MOTOR LEARNING; RESPONSE LEARNING.

**movement perspective** a visual illusion produced by the relative distance of moving objects. For example, a nearby bird flying at 50 kmh (c. 30 mph) may appear to be traveling faster than a jet airliner in the distant sky moving at 960 kmh (nearly 600 mph).

**movement sense** see KINESTHESIS.

**movement-sensitive retinal cells** cells, most commonly found in the retinas of lower animals, that respond to various specific movements across the visual field. Examples include the bug-detector cells of amphibians, which respond best to small, dark, moving spots, and cells that adapt quickly to objects moving in a particular direction.

**movement therapy** a therapeutic technique in which individuals use rhythmic exercises and bodily movements to achieve greater body awareness and social interaction and enhance their psychological and physical functioning. See also DANCE THERAPY.

**moving-edge detector** any of the cells in the visual system that respond best to a dark-light border moved through the receptive field. A particular speed and direction of movement may be required to elicit the optimum response from a moving-edge detector. See also FEATURE DETECTOR.

**moving-window technique** in studies of reading, an experimental technique in which the words on a page are covered up except for a limited number that can be viewed through a "window," which moves forward through the text at a set rate.

**Mowat sensor** an aid to ambulation for individuals with visual impairment. It is a lightweight, handheld device, similar to a flashlight, that detects objects by sending out brief pulses of high-frequency sound (ultrasound). The device vibrates when it detects an object, and users can tell how close they are to the object by the rate of vibration. The device ignores everything but the closest object within the beam.

**Mozart effect** a temporary increase in the affect or performance of research participants on tasks involving spatial-temporal reasoning after listening to the music of Austrian composer Wolfgang Amadeus Mozart (1756–1791). More generally, the term refers to the possibility that listening to certain types of music enhances inherent cognitive functioning. Apart from the neurological research on this effect, some experts propose an AROUSAL THEORY perspective, such that listening to music heightens emotional levels that correspond to higher performance on intelligence tests. The notion of the Mozart effect has entered into popular culture to carry the as-yet-unsupported suggestion that early childhood exposure to classical music benefits mental development or intelligence.

**mPOA** abbreviation for MEDIAL PREOPTIC AREA.

**MPS 1.** abbreviation for MUCOPOLYSACCHARIDOSIS. **2.** abbreviation for myofascial pain syndrome. See CHRONIC MYOFASCIAL PAIN.

**MPTP** *n.* 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine; a by-product of heroin synthesis that is used experimentally to induce symptoms of Parkinson's disease in laboratory animals. It was discovered accidentally in 1976 when it was synthesized and injected by a recreational drug user who was attempting to produce an analog of MEPERIDINE. This individual developed acute symptoms of Parkinson's disease, as did other users of the drug. Autopsy revealed massive degeneration of dopamine-containing neurons in the NIGROSTRIATAL TRACT. MPTP is not in itself neurotoxic (damaging to nerve tissue), but it is converted to the methylphenylpyridinium ion (MPP<sup>+</sup>), a potent neurotoxin at dopaminergic neurons, by the enzyme MONOAMINE OXIDASE B.

**MR** abbreviation for MENTAL RETARDATION.

**MRH** abbreviation for Müllerian regression hormone. See MÜLLERIAN-INHIBITING HORMONE.

**MRI** abbreviation for MAGNETIC RESONANCE IMAGING.

**mRNA** abbreviation for MESSENGER RNA.

**MRT** abbreviation for MODIFIED RHYME TEST.

**MS** abbreviation for MULTIPLE SCLEROSIS.

**MS** symbol for MEAN SQUARE.

**MSE** abbreviation for MENTAL STATUS EXAMINATION.

**MSE** symbol for MEAN SQUARE ERROR.

**MSH** abbreviation for MELANOCYTE-STIMULATING HORMONE.

**MSH2** a germ-line mutation located on the short arm of chromosome 2 and associated with hereditary nonpolyposis colorectal cancer (HNPCC). See also MLH1.

**MSI** abbreviation for magnetic source imaging. See MAGNETOENCEPHALOGRAPHY.

**MSIS** abbreviation for MULTISTATE INFORMATION SYSTEM.

**MSLT** abbreviation for MULTIPLE SLEEP LATENCY TEST.

**MSP** abbreviation for MÜNCHAUSEN SYNDROME BY PROXY.

**MSQ** abbreviation for MINNESOTA SATISFACTION QUESTIONNAIRE.

**MSR** symbol for MEAN SQUARE RESIDUAL.

**MST** abbreviation for MCCARTHY SCREENING TEST.

**MSUD** abbreviation for MAPLE-SYRUP URINE DISEASE.

**MT (middle temporal)** another name for visual area 5 (see V5), used because of V5's location toward the back of the MIDDLE TEMPORAL GYRUS.

**MTcA** abbreviation for MIXED TRANSCORTICAL APHASIA.

**MTG** abbreviation for MIDDLE TEMPORAL GYRUS.

**MTMM 1.** abbreviation for MULTITRAIT–MULTIMETHOD MATRIX. **2.** abbreviation for MULTITRAIT–MULTIMETHOD MODEL.

**mu** (symbol:  $\mu$ ) see POPULATION MEAN.

**mucocutaneous skin** the hairless skin of the lips. This type of skin is also found at other junctions between the inside and outside of the body (e.g., the nasal and anal orifices).

**mucopolysaccharidosis (MPS) n. (pl. mucopolysaccharidoses)** any of various metabolic disorders that are marked by excess mucopolysaccharide—glycosaminoglycan, a complex carbohydrate—in the tissues. Certain forms of the disease are associated with intellectual disability. Mucopolysaccharidoses are classified into several groups identified by Roman numerals (e.g., MPS I, MPS II). See BETA-GLUCURONIDASE DEFICIENCY; HUNTER SYNDROME; HURLER SYNDROME; MAROTEAUX–LAMY SYNDROME; SAN-FILIPPO SYNDROME.

**mucous colitis** see IRRITABLE BOWEL SYNDROME.

**mucous ophthalmia** see OPHTHALMIA.

**muina n.** see BILIS.

**muliebrity n.** the state or condition of being a woman (from Latin *mulier*, “woman”) or the qualities considered to be characteristic of women.

**Müller cell** an elongated nonneuronal central nervous system cell (GLIA) that traverses and supports all the layers of the retina, collecting light and directing it toward the PHOTORECEPTORS. A component of the INNER NUCLEAR LAYER, these cells were originally called **Müller fibers** because of their thin, stretched shape. [Heinrich Müller (1820–1864), German anatomist]

**Müllerian duct** either of a pair of ducts that occur in a mammalian embryo and develop into female reproductive structures (fallopian tubes, uterus, and upper vagina) if testes are not present in the embryo. Compare WOLFFIAN DUCT. [Johannes MÜLLER]

**Müllerian-inhibiting hormone (MIH)** a hormone

produced by the testes early in prenatal development that inhibits feminization of the fetus by preventing the Müllerian ducts from differentiating into the female sex organs. Also called **anti-Müllerian hormone (AMH)**; **Müllerian-inhibiting substance (MIS)**; **Müllerian regression hormone (MRH)**. [Johannes MÜLLER]

**Müllerian mimicry** a form of mimicry in which two or more species, each of which is toxic or potentially harmful, have similar body shape or coloration. For predators, a single experience with a member of one of these species can lead to learned avoidance of all similar-looking animals, conferring protection on all the mimetic species. [Johann Friedrich Theodor Müller (1822–1897), German zoologist]

**Müller-Lyer illusion** a GEOMETRIC ILLUSION in which a difference is perceived in the length of a line depending on whether arrowheads at either end are pointing toward each other or away from each other. Also called **arrow-head illusion**. [first described in 1889 by Franz Müller-Lyer (1857–1916), German psychiatrist and sociologist]

**Müller–Urban process** a procedure for calculating the DIFFERENCE THRESHOLD for data obtained using the METHOD OF CONSTANT STIMULI. It is based on the assumption that the best measure of the threshold is the median of the best fitting ogive (S-shaped function) for the distribution. [Georg Elias MÜLLER; Frank M. Urban, 20th-century U.S. psychologist]

**Müller–Urban weights** a set of numerical modifiers used in determining the best value of  $h$  (the measure of PRECISION OF PROCESS) by fitting observations to the normal curve. Also called **Urban's weights**. [Georg Elias MÜLLER and Frank M. Urban]

**multa loca tenens principle** a rule stating that if a drug can substitute for or mimic one action of a natural physiological agent, it may be able to simulate other natural functions as well. Because of such multiple effects, the administered drug may compete for receptors, enzymes, and other physiological targets. [Latin, “holding (or substituting at) many places”]

**multiattribute utility analysis** a method of using the ratings of judges to quantify the value of complex alternatives or choices. In PROGRAM EVALUATION, dimensions relevant to outcomes of different programs are ranked and then weighted in terms of their comparative importance, and each program is scored on all value dimensions. This form of analysis enables comparisons of different programs to be made.

**multiaxial classification** a system of classifying mental disorders according to several categories of factors (e.g., social and cultural influences) as well as clinical symptoms. See DSM–IV–TR.

**multicollinearity n.** in MULTIPLE REGRESSION, the state that occurs when several INDEPENDENT VARIABLES are extremely highly interrelated, making it difficult to determine separate effects on the DEPENDENT VARIABLE. For example, if a researcher includes predictors of self-esteem, self-efficacy, and self-concept in an analysis with a dependent variable of achievement, multicollinearity most likely will be present.

**multicultural education** a progressive approach to education that emphasizes social justice, equality in education, and understanding and awareness of the traditions and language of other cultures and nationalities. Multicultural programs involve two or more ethnic or cultural

groups and are designed to help participants define their own ethnic or cultural identity and to appreciate that of others. The purpose is to promote inclusiveness and cultural pluralism in society.

**multiculturalism** *n.* 1. the quality or condition of a society in which different ethnic and cultural groups have equal status and access to power but each maintains its own identity, characteristics, and mores. 2. the promotion or celebration of cultural diversity within a society. Also called **cultural pluralism**. Compare **CULTURAL MONISM**. —**multicultural** *adj.*

**multicultural psychology** an extension of general psychology that recognizes that multiple aspects of identity influence a person's worldview, including race, ethnicity, language, sexual orientation, gender, age, disability, class status, education, religious or spiritual orientation, and other cultural dimensions, and that both universal and culture-specific phenomena should be taken into consideration when psychologists are helping clients, training students, advocating for social change and justice, and conducting research.

**multicultural therapy** 1. any form of psychotherapy that takes into account not only the racial and ethnic diversity of clients but also their diversity in spirituality, sexual orientation, ability and disability, and social class and socioeconomic status; the potential cultural bias (e.g., racism, sexism) of the practitioner; the history of oppressed and marginalized groups; acculturation issues for immigrant clients; and the politics of power as they affect clients. 2. any form of therapy that assesses, understands, and evaluates a client's behavior in the multiplicity of cultural contexts (e.g., ethnic, national, demographic, social, economic) in which that behavior was learned and is displayed.

**multidetermination** *n.* the interaction of several different factors in the etiology of a disorder (e.g., biological, psychological, environmental). —**multidetermined** *adj.*

**multidetermined behavior** the concept that human behavior is influenced by the interaction of multiple factors, past and present. In general, the major influences are genetic, environmental, physiological, and psychological.

**multidimensionality** *n.* 1. the quality of a CONSTRUCT that cannot be adequately described by measuring a single trait or attribute. 2. the quality of a scale, test, or so forth that is capable of measuring more than one DIMENSION of a construct. For example, a psychometrician may be interested in investigating the multidimensionality of a new scale to measure cognitive functioning. Compare UNIDIMENSIONALITY. —**multidimensional** *adj.*

**Multidimensional Scale for Rating Psychiatric Patients** see INPATIENT MULTIDIMENSIONAL PSYCHIATRIC SCALE.

**multidimensional scaling (MDS)** a SCALING method that represents perceived similarities among stimuli by arranging similar stimuli in spatial proximity to one another, while disparate stimuli are represented far apart from one another. Multidimensional scaling is an alternative to FACTOR ANALYSIS for dealing with large matrices of data or stimuli.

**multidisciplinary approach** see INTERDISCIPLINARY APPROACH.

**multidisciplinary team** a group of individuals, each

with expertise in a different field of study, who are brought together to examine a subject area or to assist people.

**multifactorial** *adj.* consisting or arising out of several factors, variables, or causes.

**multifactorial inheritance** inheritance of a trait, such as height or predisposition to a certain disease, that is determined not by a single gene but by many different genes acting cumulatively. Such traits show continuous, rather than discrete, variation among the members of a given population and are often significantly influenced by environmental factors, such as nutritional status. Also called **polygenic inheritance**.

**multifactorial model** a model of inheritance positing that the genetic and environmental causes of a trait constitute a single continuous variable, the **liability**, and that if that liability is exceeded, the trait will manifest itself.

**multiform layer** see CORTICAL LAYERS.

**multifunctional antidepressant** an antidepressant that acts primarily via more than one major neurotransmitter system. The term is often applied to the SNRIs (e.g., VENLAFAXINE), which inhibit the reuptake of both norepinephrine and serotonin, to distinguish them from the SSRIs (selective serotonin reuptake inhibitors). Also called **dual-action antidepressant**; **mixed-function antidepressant**.

**multigenerational transmission** the passing on of psychological problems, primarily anxiety, over several generations through family relationships. A central concept in FAMILY SYSTEMS THEORY, the principal process involves the nonconscious passing on of a higher level of anxiety, which overrides adaptive thinking and behavior, to members in each succeeding generation. Interventions to change this transmission involve charting family relationships and coaching individuals on how to interact with targeted relatives, usually those who are lowest in anxiety and who function at the most adaptive level. [developed by U.S. psychiatrist Murray Bowen (1913–1990)]

**multigenerational trauma** see INTERGENERATIONAL TRAUMA.

**multigravida** *n.* a woman who has had two or more pregnancies. Compare PRIMIGRAVIDA.

**multi-infarct dementia** see VASCULAR DEMENTIA.

**multilevel model** see HIERARCHICAL LINEAR MODEL.

**Multilingual Aphasia Examination (MAE)** a neuropsychological test battery used to determine the presence, type, and severity of APHASIA. The 11 subtests, assessing various aspects of expressive and receptive language function, include Visual Naming, Sentence Repetition, a CONTROLLED ORAL WORD ASSOCIATION TEST, Oral Spelling, Written Spelling, Block Spelling, a TOKEN TEST, Aural Comprehension of Words and Phrases, Reading Comprehension of Words and Phrases, Rating of Articulation, and Rating of Praxic Features of Writing. The MAE was originally developed in 1978 and is now in its third edition (published in 1994). Despite the implications of its name, the MAE currently is available only in English and Spanish versions. [developed by U.S. psychologists Arthur L. BENTON, Kerry deS. Hamsher (1946– ), and Abigail B. Sivan (1943– )]

**multilingualism** *n.* the sociolinguistic situation in which several languages are used within the same community, usually resulting from geographical, economic, politi-



cal, or militaristic interactions. Typically, the various languages differ in status and serve different social functions. See DIGLOSSIA.

**multimethod approach** a design that uses more than one procedure for measuring the main characteristic or construct of interest. For example, a researcher could use a multimethod approach to understanding relationship satisfaction by simultaneously collecting data from a survey, asking one or both of the partners to give their own self-report, and systematically observing the degree of relationship satisfaction. See also MULTITRAIT–MULTIMETHOD MODEL.

**multimethod–multitrait model** see MULTITRAIT–MULTIMETHOD MODEL.

**multimodal distribution** a set of data in which there is more than one MODE or score that occurs most frequently. For example, the ages of a sample of college students would form a multimodal distribution if the largest number of people are either 18, 19, or 20 years old, with the remaining individuals aged 17 or 21 through 70. See also BIMODAL DISTRIBUTION; UNIMODAL DISTRIBUTION.

**multimodal therapy (MMT)** a form of psychotherapy in which the therapist assesses the client's significant Behaviors, Affective responses, Sensations, Imagery, Cognitions, Interpersonal relationships, and the need for Drugs and other biological interventions. The first letters yield the acronym **BASIC ID**, which summarizes the seven basic interactive modalities of the approach. MMT posits that these modalities exist in a state of reciprocal transaction and flux, connected by complex chains of behavior and other psychophysiological processes. The therapist, usually in concert with the client, determines which specific problems across the BASIC ID are most salient. MMT uses an eclectic approach drawing mainly from a broad-based social and cognitive learning theory. Also called **multimodal behavior therapy**. [developed by South African-born U.S. psychologist Arnold Allan Lazarus (1932–2013)]

**multimodal treatment** a manner of treating a disease, disorder, or syndrome by simultaneously applying several different methods, often from different disciplines or traditions.

**multinomial** *adj.* describing a measurement that can have more than two categories or outcomes. For example, a professor assigning grades of A, B, C, D, or F to students in his or her course is making a multinomial decision, whereas assigning grades of pass or fail would be a binomial decision.

**multinomial distribution** a probability distribution that describes the theoretical distribution of  $n$  objects sampled at random from a population of  $k$  kinds of things with regard to the number of each of the kinds that appears in the sample. By contrast, a BINOMIAL DISTRIBUTION involves just two variables, categories, or objects.

**multinormal distribution** see MULTIVARIATE NORMAL DISTRIBUTION.

**multiparous** *adj.* 1. describing a woman (a **multipara**) who has had two or more pregnancies resulting in live births. Compare PRIMIPAROUS. 2. giving birth to more than one offspring at a time. —**multiparity** *n.*

**multipayer system** see ALL-PAYER SYSTEM.

**multiophilia** *n.* interest in multiple, short-term sexual re-

lationships, with no desire for long-term relationships or commitment.

**multiple-aptitude test** a battery of separate tests designed to measure a wide range of relatively independent functions and to yield a profile of a person's abilities in different areas, as contrasted with a single global IQ. Different batteries measure different patterns of abilities. An example is the battery comprising the DIFFERENTIAL APTITUDE TESTS, primarily for use in educational and vocational counseling.

**multiple baseline design** an experimental approach in which two or more behaviors are assessed to determine their initial, stable expression (i.e., baseline) and then an intervention or manipulation is applied to one of the behaviors while the others are unaffected. After a period, the manipulation is then applied to the next behavior while the remaining behaviors are unaltered, and so forth until the experimental manipulation has been applied in sequential fashion to all of the behaviors in the design. In successively administering a manipulation to different behaviors after initial behaviors have been recorded, a multiple baseline design allows for inferences about the effect of the intervention.

**multiple causation** the view that events, including behaviors, seldom result from single causes but instead from multiple causes working in complex combinations. Multiple causation contrasts with SIMPLE CAUSATION and, often, with LINEAR CAUSATION.

**multiple-choice experiment** an experiment in which a participant decides which of several possible choices is correct, usually on the basis of a specific cue that must be learned.

**multiple-choice question** see FIXED-ALTERNATIVE QUESTION.

**multiple classification** the ability to classify items in terms of more than one dimension simultaneously, such as shape and color. According to PIAGETIAN THEORY, this ability is not achieved until the CONCRETE OPERATIONAL STAGE.

**multiple comparisons** a set of comparisons made between samples to identify significant differences among their mean values. Multiple comparisons are generally done in a post hoc manner (i.e., are unplanned) in order to keep the TYPE I ERROR rate controlled at a prespecified level. Also called **multiple contrasts**.

**multiple comparison test** any of various statistical procedures used to follow up on a significant result from an ANALYSIS OF VARIANCE by determining which groups in particular differ in their mean values. Examples include DUNCAN'S MULTIPLE RANGE TEST, the FISHER LEAST SIGNIFICANT DIFFERENCE TEST, the REGWQ TEST, the SCHEFFÉ TEST, and TUKEY'S HONESTLY SIGNIFICANT DIFFERENCE TEST. See also POST HOC COMPARISON.

**multiple correlation coefficient** (symbol:  $R$ ) a numerical index of the degree of relationship between a particular variable and two or more other variables. Its value ranges from  $-1$  to  $+1$ , with the former indicating a strong negative relationship and the latter a strong positive relationship. Also called **multiple  $R$** .

**multiple correlation coefficient squared** see COEFFICIENT OF MULTIPLE DETERMINATION.

**multiple cutoff model of selection** in PERSONNEL SELECTION, a model in which an applicant for a job must

meet a minimum score on each of several selection instruments (i.e., tests and inventories) in order to be hired. Unlike the **MULTIPLE HURDLE MODEL OF SELECTION**, the multiple cutoff procedure does not require applicants to take and pass the selection instruments in any particular order.

**multiple delusions** concurrent **DELUSIONS**, not necessarily interconnected.

**multiple determination** see **OVERDETERMINATION**.

**multiple discriminant analysis (MDA)** a **MULTIVARIATE** statistical procedure for examining the relationship between a set of more than two categories representing an outcome variable and a set of predictor variables. It often is used to verify that the predictors (e.g., family history, self-esteem, number of sleeping hours) are accurately classifying individuals into the appropriate categories of the outcome variable (diagnosis of depression). Also called **multiple classification analysis (MCA)**.

**multiple drafts hypothesis** the theory that conscious perception occurs not in a specific location in the brain but rather through many approximations (drafts) of sensory input that are widely distributed over the sensory cortex. [proposed by U.S. philosopher Daniel C. Dennett (1942– ) and Austrian-born U.S. neurologist Marcel Kinsbourne (1931– )]

**multiple family therapy** a form of **GROUP THERAPY** in which two or more family members meet with two or more therapists at once. See also **COTHERAPY**.

**multiple hurdle model of selection** in **PERSONNEL SELECTION**, a model in which applicants for a job are required to pass each of a series of selection instruments (i.e., tests and inventories) before they are evaluated on the next instrument. The number of applicants is therefore reduced at each “hurdle.” See also **BANDING**.

**multiple-impact therapy** a treatment method in which a group of mental health professionals works with a client family during an intensive, limited period.

**multiple imputation** a method for addressing missing data in which several possible simulated values are inserted into a data set to replace omitted values, and then the mean and **STANDARD DEVIATION** of the set are calculated to arrive at an estimate to substitute for the missing value. Multiple imputation is considered less biased than other missing values procedures, such as **LISTWISE DELETION**, **PAIRWISE DELETION**, and **single IMPUTATION**.

**multiple-intelligences theory** the idea that intelligence is made up of eight distinct categories: linguistic, musical, bodily-kinesthetic, logical-mathematical, spatial, naturalist, intrapersonal, and interpersonal. [proposed in 1983 by U.S. psychologist Howard Gardner (1943– )]

**multiple linear regression** see **MULTIPLE REGRESSION**.

**multiple marital therapy** a form of therapy in which each marital partner is treated independently by individual therapists. The two therapists may meet privately to discuss their clients, and sessions involving all four parties or a combination of the parties may be held. See also **CONJOINT THERAPY**.

**multiple mating** in animal behavior, a strategy used by females to prevent **CERTAINTY OF PATERNITY** in males and as a **MATE-SELECTION** mechanism. A female mammal might mate with most males in her group, thus giving each male a stake in helping to protect the female and her young. Multiple mating is a form of **CRYPTIC FEMALE CHOICE** if the

female can control which male mates with her at the time when conception is most likely.

**multiple monitored electroconvulsive treatment (MMECT)** a form of **ELECTROCONVULSIVE THERAPY** in which an attempt is made to shorten the overall period of treatment by inducing several seizures in a single session. Also called **multimonitored electroconvulsive treatment**.

**multiple orgasm** in women, the occurrence of more than one orgasm, without a resolution phase (see **SEXUAL-RESPONSE CYCLE**) separating the orgasms. Studies have estimated that as many as 30% of women experience this. Male multiple orgasm does not occur, because further arousal and response are not possible during the **REFRACTORY PHASE** following male orgasm. However, some men do carefully monitor and control their arousal and may experience the first elements of an orgasm, without ejaculation, more than once before having a complete orgasm, with ejaculation.

**multiple personality disorder** see **DISSOCIATIVE IDENTITY DISORDER**.

**multiple R** see **MULTIPLE CORRELATION COEFFICIENT**.

**multiple range test** see **DUNCAN'S MULTIPLE RANGE TEST**.

**multiple regression** a statistical technique for examining the linear relationship between a continuous **DEPENDENT VARIABLE** and a set of two or more **INDEPENDENT VARIABLES**. It is often used to predict a single outcome variable from a set of predictor variables. For example, an educational psychology researcher could use multiple regression to predict college achievement (e.g., grade-point average) from the variables of high school grade-point average, Scholastic Assessment Test (SAT) reading score, SAT mathematics score, and SAT writing score. When a single predictor and a single outcome are involved, the process is known as **LINEAR REGRESSION**. Also called **multiple linear regression**.

**multiple regression model of selection** a statistically based model of **PERSONNEL SELECTION** in which the applicant is measured on each of several predictors and these scores are weighted to reflect the **GOODNESS OF FIT** between the predictor and performance on a given **JOB CRITERION**. The model assumes that the predictors are linearly related to the job criteria and that they are additive and can compensate for one another.

**multiple reinforcement schedule** a **COMPOUND SCHEDULE OF REINFORCEMENT** in which two or more schedules alternate and each schedule is associated with a different **EXTEROCEPTIVE STIMULUS**. For example, under a multiple fixed-interval extinction schedule, a tone could be present while the fixed-interval schedule is in effect and absent when extinction is in effect.

**multiple relationship** see **DUAL RELATIONSHIP**.

**multiple-resource model** a model that views attention as comprising many pools of resources, each pool being specific to one stimulus modality or type of response. Different tasks place varying demands on different resources, and performance suffers less if two tasks draw on different resource pools than if they draw on the same pool. For example, talking while riding a bicycle presents fewer problems than trying to have two conversations at once. See **MULTIPLE-TASK PERFORMANCE**. Compare **UNITARY-RESOURCE MODEL**.

**multiple-role playing** a MANAGEMENT DEVELOPMENT technique involving group ROLE PLAY. A large group is broken up into smaller groups, each of which comprises three people sitting in one row and the three people sitting directly behind them. Each six-person group is then given the same problem, with each member assigned one of six roles in the decision-making process. The solutions derived by each group are then reported to the entire body. See also BUSINESS GAME; CASE METHOD; CONFERENCE METHOD; SCENARIO ANALYSIS.

**multiple roles in persuasion** a postulate in the ELABORATION-LIKELIHOOD MODEL holding that variables can influence persuasion in one or more of five possible roles. When elaboration is likely to be low, a variable can influence persuasion by possibly serving as a PERIPHERAL CUE. When situational and dispositional factors do not cause elaboration to be extremely high or low, a variable can influence persuasion by determining the amount of elaboration. When elaboration is likely to be high, a variable can serve as an ARGUMENT if it is directly relevant to evaluating the ATTITUDE OBJECT, as a BIASING FACTOR in elaboration, or as a SELF-VALIDATION FACTOR in elaboration.

**multiple sclerosis (MS)** a disease of the central nervous system (brain and spinal cord) characterized by inflammation and multifocal scarring of the protective MYELIN SHEATH of nerves, which damages and destroys the sheath and the underlying nerve, disrupting neural transmission. The initial symptom of MS is often a visual disturbance, such as blurred or double vision, red-green color distortion, or blindness in one eye. Later symptoms include fatigue, weakness in the hands and feet, numbness, stiffness or muscular spasms, muscle and back pain, difficulties with coordination and balance, loss of bladder or bowel control, and depression. Some individuals also experience cognitive impairments, such as difficulties with concentration, attention, memory, and judgment. The onset is usually between the ages of 20 and 40, and, with periods of remission, the disease may continue for 25 years or more. Rapid progression to death is rare. The cause of MS, which occurs twice as frequently in females as in males, is unknown. However, the destruction of myelin may be due to an autoimmune response (see AUTOIMMUNITY).

**multiple selves** a psychoanalytic concept of the self as composed of many different self-states with different affective, perceptual, and cognitive features. In normal development, the self-states are thought to be sufficiently compatible to allow for internal conflicts of wishes and desires within the person. In pathological development, or as a result of trauma, the self-states are thought to become defensively dissociated from each other, sometimes resulting in DISSOCIATIVE IDENTITY DISORDER. Also called **multiple self-states**.

**Multiple Sleep Latency Test (MSLT)** an inpatient test performed in a SLEEP LABORATORY in which the individual is monitored during a series of five 20-minute nap periods scheduled 2 hours apart. The object is to assess daytime sleep tendency by measuring the number of minutes it takes the individual to fall asleep. Electrodes are used to measure brain waves, eye movements, heartbeat, and muscle tone. The test is used in the diagnosis of PRIMARY HYPERSOMNIA and NARCOLEPSY.

**multiple-spike recording** the recording and analyzing of potentials from rapidly firing neurons using MICROELECTRODES connected to computer equipment.

**multiple-task performance** a scenario in which a person must perform two or more tasks either simultaneously or contemporaneously. Success will depend on the degree to which the person can divide his or her attentional resources between tasks. See MULTIPLE-RESOURCE MODEL; UNITARY-RESOURCE MODEL. See also PERFORMANCE-OPERATING CHARACTERISTIC.

**multiple trace hypothesis** the hypothesis that when a stimulus is presented on multiple occasions, each occasion creates an entirely new record in memory rather than strengthening or otherwise updating an already existing record.

**multiplex** *n.* a method of coding information that enables two or more messages or data streams to be transmitted simultaneously over the same communication channel.

**multiplication rule** a rule stating that the JOINT PROBABILITY of two independent events occurring together or in succession is equal to the probability of the first event times the probability of the second event. For example, the multiplication rule would indicate that the probability of drawing a heart followed by the probability of drawing a spade is equal to  $13/52 \times 13/52 = .25 \times .25 = .0625$ . Also called **and rule**; **multiplication law**; **multiplicative law**. Compare ADDITION RULE.

**multiplicative model** a description of the effect of two or more predictor variables on an outcome variable that allows for INTERACTION EFFECTS among the predictors. This is in contrast to an ADDITIVE MODEL, which sums the individual effects of several predictors on an outcome. For example, a health researcher could use a multiplicative model to examine the interaction effect of number of cigarettes smoked per day and length of smoking habit on the onset of cancer; the results might be compared to those obtained from an additive model that examines the separate effects of amount of cigarettes and length of a smoking habit on cancer onset.

**multiplicity-versus-unity dimension** the degree to which a work of art is characterized by complexity (multiplicity) versus harmony (unity). Arousal in the viewer is heightened by complexity factors and lowered by elements of harmony. Multiplicity in art is sometimes held to be associated with historical periods of political or economic insecurity, when tensions are reflected in "deformation" of art styles.

**multipolar neuron** a neuron that has many dendrites and a single axon extending from the CELL BODY. Also called **multipolar cell**. Compare BIPOLAR NEURON; UNIPOLAR NEURON.

**multisensory learning** learning in which the material of interest is presented through several sensory modalities (e.g., seeing, hearing, touching) rather than through only one modality.

**multisensory method** an approach to teaching reading and spelling that incorporates the visual, auditory, kinesthetic, and tactile modalities. See FERNALD METHOD.

**multiskilled (multiskill)** *adj.* **1.** displaying a level of proficiency in more than one area of expertise. **2.** having the ability to perform more than one task at the same time.

**multistage sampling** a technique in which samples are drawn first from higher order groupings (e.g., states) and then from successively lower level groupings (e.g., counties within states, towns within counties) in order to

avoid the necessity of having a **SAMPLING FRAME** for the entire population. That is, if subunits within a selected unit give similar results, one can select and measure a sample of the subunits in any chosen unit to avoid uneconomically measuring all of them. When two grouping sets are involved, the process is also known as **two-stage sampling**; when three sets are involved, it is also called **three-stage sampling**; and so on.

**multistage theory** any theory concerning a process that posits a series of steps or stages operating serially to accomplish that particular process.

**multistate information system (MSIS)** an automated record-keeping system designed to provide comparative statistics for evaluation of programs and treatment procedures in U.S. mental hospitals and community mental health facilities.

**multistore model of memory** any theory hypothesizing that information can move through and be retained in any of several memory storage systems, usually of a short-term and a long-term variety. The first to propose a multistore model were U.S. cognitive psychologists Richard C. ATKINSON and Richard M. Shiffrin (1942– ) in 1968 (see **INFORMATION-PROCESSING MODEL**), with other researchers subsequently proposing their own such models as well. Also called **storage-and-transfer model of memory**. See **DUAL-STORE MODEL OF MEMORY**; **MODAL MODEL OF MEMORY**.

**multisynaptic arc** see **POLYSYNAPTIC ARC**.

**multitrait–multimethod matrix (MTMM)** a matrix showing correlations among two or more measurement techniques used to assess two or more constructs or traits, as obtained from a **MULTITRAIT–MULTIMETHOD MODEL**. It includes correlations among the same traits with different methods (i.e., monotrait–heteromethod) and among different traits with the same method (i.e., heterotrait–monomethod). The former are expected to be the largest, thus demonstrating **CONVERGENT VALIDITY**, whereas the latter are expected to be smallest, demonstrating **DISCRIMINANT VALIDITY**.

**multitrait–multimethod model (MTMM)** a procedure for examining **CONSTRUCT VALIDITY** that assesses the correlations among two or more characteristics where these are each measured in two or more ways. For example, a researcher studying self-concept and achievement as measured by both self-reports and teacher evaluations could use a multitrait–multimethod model to evaluate the associations between the self-reports and teacher evaluations on each one of the characteristics. The set of correlations resulting from such an analysis is displayed in a **MULTITRAIT–MULTIMETHOD MATRIX**. Also called **multitrait–multimethod analysis**.

**multivariate adj.** consisting of or otherwise involving a number of distinct variables. For example, a multivariate study of ability could involve multiple measures of intelligence and achievement. Compare **UNIVARIATE**. See also **BIVARIATE**.

**multivariate analysis 1.** a set of statistical procedures for studying the relationships between one or more predictors and several outcome or **DEPENDENT VARIABLES**. Examples include **CANONICAL CORRELATION ANALYSIS** for assessing the relationships among two sets of variables; **FACTOR ANALYSIS** for assessing the relationships among a large set of measures and a small set of underlying factors; **MULTIVARIATE ANALYSIS OF VARIANCE** and **MULTIVARIATE**

**ANALYSIS OF COVARIANCE** for assessing potential group differences on several dependent variables; and **STRUCTURAL EQUATION MODELING**, which examines a theoretically based pattern of relationships among multiple independent, dependent, and even mediating variables. Also called **multivariate statistics**. Compare **UNIVARIATE ANALYSIS**. **2.** more generally, any procedure for understanding any large set of variables, whether dependent or independent.

**multivariate analysis of covariance (MANCOVA)** a statistical procedure for assessing possible group differences on a set of outcome or **DEPENDENT VARIABLES**, after taking into account the scores on one or more **COVARIATES**. For example, a researcher could conduct a multivariate analysis of covariance to assess whether two groups of participants in a teaching style study differ significantly on a set of achievement variables—such as quiz scores, homework scores, exam scores, and project scores—after taking into account the initial grade-point average of each of the participants. It is an extension of the univariate **ANALYSIS OF COVARIANCE**, which examines a single dependent variable.

**multivariate analysis of variance (MANOVA)** a statistical procedure for assessing possible group differences on a set of outcome or **DEPENDENT VARIABLES**. For example, a researcher could conduct a multivariate analysis of variance to assess whether a group of participants who receive a new educational method differ significantly from another group of participants who are taught with a traditional method on a set of achievement variables, such as quiz scores, homework scores, exam scores, and project scores. It is an extension of the univariate **ANALYSIS OF VARIANCE**, which examines a single dependent variable.

**multivariate distribution** the arrangement of scores obtained on several variables. For example, a health researcher may want to examine the multivariate distribution of scores on level of exercise, cholesterol level, and blood pressure in a sample of individuals at risk for heart disease. Compare **UNIVARIATE DISTRIBUTION**.

**multivariate normal distribution** a pattern of values on several variables in which a graph of the data forms a bell-shaped **NORMAL DISTRIBUTION**. Evidence for a multivariate normal distribution may be obtained using a **QUANTILE–QUANTILE PLOT**. If the plot shows a series of points along a diagonal line, indicating a lack of any discrepant scores (i.e., any multivariate **OUTLIERS**), then the data have a multivariate normal distribution. Also called **multinormal distribution**.

**multivariate normality** the situation in which the values for a set of variables have an even distribution, with most scores falling in the middle of the range and a smaller number of high and low scores. In other words, a set of scores demonstrating multivariate normality follows a **MULTIVARIATE NORMAL DISTRIBUTION** and lacks **OUTLIERS** or extreme scores.

**multivariate research** a study conducted to simultaneously assess the relationships among multiple **DEPENDENT VARIABLES** and **INDEPENDENT VARIABLES**. Compare **UNIVARIATE RESEARCH**.

**multivariate statistics** see **MULTIVARIATE ANALYSIS**.

**multivariate test** any of various statistical procedures involving two or more outcome or **DEPENDENT VARIABLES**. An example is the **MULTIVARIATE ANALYSIS OF VARIANCE**, which extends the **ANALYSIS OF VARIANCE** examining one dependent variable to include additional dependent varia-

bles, FACTOR ANALYSIS and MULTIPLE REGRESSION sometimes are considered multivariate tests as well, even though the former involves a single set of variables that are not necessarily independent or dependent and the latter allows for multiple INDEPENDENT VARIABLES but only one outcome.

**mum effect** see UPWARD COMMUNICATION.

**Münchhausen syndrome** a severe and chronic form of FACTITIOUS DISORDER characterized by repeated and elaborate fabrication of clinically convincing physical symptoms and a false medical and social history (see PSEUDOLOGIA FANTASTICA). Other features are PEREGRINATION and recurrent hospitalization, and there may be multiple scars from previous (unnecessary) investigative surgery. The patient's motivation is a psychological need to assume the SICK ROLE. See also PATHOMIMICRY. [Baron Karl Friedrich Hieronymus von **Münchhausen** (1720–1797), German soldier-adventurer famous for his tall tales but not for having the disorder itself]

**Münchhausen syndrome by proxy (MSP)** a psychological disorder in which caregivers fabricate or intentionally cause symptoms in those they are caring for in order to seek and obtain medical investigation or treatment (i.e., to assume the SICK ROLE by proxy). Typically, the caregiver is the mother, who behaves as if distressed about her child's illness and denies knowing what caused it: She is believed to be motivated by the hope that she will be seen as an exceptionally attentive parent, and her behavior may be an attempt to arouse sympathy. Also called **factitious disorder by proxy**.

**mundane realism** the extent to which an experimental situation resembles a real-life situation or event. See also EXPERIMENTAL REALISM.

**Munsell color system** a method of color notation devised for use mainly in science, industry, and technology. The system uses numerical designations for hue, saturation, and brightness of color for accurate identification and specification. See COLOR VALUE. [Albert H. **Munsell** (1858–1918), U.S. artist]

**mu opioid receptor** see OPIOID RECEPTOR.

**murder** *n.* the unlawful killing of one person by another, particularly when the act involves premeditation. See also HOMICIDE.

**murder–suicide** the intentional killing of another person followed by the suicide of the killer. See also EXTENDED SUICIDE.

**muscae volitantes** particles or specks seen as floating before the eyes. Also called **mouches volantes**. [Latin, literally, “flying flies”]

**muscarine** *n.* a toxic alkaloid, isolated from FLY AGARIC (*Amanita muscaria*) and some other fungi, that stimulates certain types of acetylcholine receptors (the MUSCARINIC RECEPTORS) in smooth muscle, cardiac muscle, endocrine glands, and the central nervous system. See also NICOTINE. —**muscarinic** *adj.*

**muscarinic receptor (mAChR)** a type of ACETYLCHOLINE RECEPTOR that responds to MUSCARINE as well as to acetylcholine. Muscarinic receptors are found in smooth muscle, cardiac muscle, endocrine glands, and the central nervous system and chiefly mediate the inhibitory activities of acetylcholine. Compare NICOTINIC RECEPTOR.

**muscimol** *n.* see FLY AGARIC; GABA AGONIST; IBOTENIC ACID.

**muscle** *n.* contractile tissue that generates force and moves parts of the body. The main types of muscle are SMOOTH MUSCLE, SKELETAL MUSCLE, and CARDIAC MUSCLE.

**muscle action potential** a wave of electric potential that sweeps across a muscle when it is stimulated. See ACTION POTENTIAL.

**muscle contraction** a shortening of the MUSCLE FIBERS in response to electrical stimulation from a MOTOR NEURON by which a muscle exerts force on the tissues to which it is attached. This stimulation initiates an electrochemical sequence in which myosin filaments, powered by ATP (adenosine triphosphate), detach from a nearby actin filament, swing forward to reattach further along the actin filament, and then swing back causing the actin and myosin filaments to slide in opposite directions. When this process is repeated in many muscle fibers, the overall muscle becomes shorter but thicker. See ISOMETRIC CONTRACTION; ISOTONIC CONTRACTION.

**muscle-contraction headache** a headache arising from increased muscle tension, frequently in the neck. Also called **muscle-tension headache**.

**muscle dysmorphia** a form of BODY DYSMORPHIA characterized by chronic dissatisfaction with one's muscularity and the perception that one's body is inadequate and undesirable, although objective observers would disagree with such an assessment. This condition often leads to excessive exercising, steroid abuse, and eating disorders. It is typically found in males, especially bodybuilders. Also called **bigorexia**; **reverse anorexia**.

**muscle fiber** a microscopic strand of muscle tissue that functions as a molecular machine converting chemical energy into force. Thousands of muscle fibers are linked by connective tissue into a muscle. Each fiber is, in turn, composed of millions of longitudinally aligned protein filaments. It is the interaction of actin and myosin protein molecules (sometimes together referred to as **actomyosin**) in these filaments that creates MUSCLE CONTRACTION.

**muscle memory** see MOTOR LEARNING.

**muscle relaxant** any of various drugs used in the management of spasms of skeletal muscle generally resulting from mechanical injury, stroke, cerebral palsy, or multiple sclerosis. Most act on the central nervous system or its associated structures to reduce muscle tone and spontaneous activity. Although the precise mode of action varies with the drug, muscle relaxants generally act by depressing spinal reflexes without loss of consciousness. Common muscle relaxants include BENZODIAZEPINES, BACLOFEN, DANTROLENE, and botulinum toxin. Others used for localized muscle spasms include CARISOPRODOL, CYCLOBENZAPRINE, METHOCARBAMOL, and ORPHENADRINE.

**muscle relaxation** the release of tension from muscle; that is, the alteration of the state of the muscle on a continuum from full contraction to flaccidity.

**muscle sensation** a kinesthetic awareness of movements and tensions in muscles, tendons, and joints. See KINESTHETIC FEEDBACK.

**muscle spindle** a receptor that lies within skeletal muscle, parallel to the main contractile MUSCLE FIBERS, that sends impulses to the central nervous system when the muscle is stretched.

**muscle-tension gradient** the rate of change of mus-

cle tension during performance of a task. It is measured by ELECTROMYOGRAPHY.

**muscle tonus** see TONUS.

**muscle twitch** a small, sudden, and brief involuntary contraction of a muscle, as opposed to sustained contraction.

**muscular dystrophy (MD)** any of a group of inherited disorders marked by degeneration of the muscles, which gradually weaken and waste away due to abnormalities in the muscle structural protein dystrophin and in a series of glycoproteins that are critical to maintaining the structural integrity of muscle fibers. There are various kinds of muscular dystrophy, each differentiated by pattern of inheritance, age of onset, rate of progression, and distribution of weakness. One of the most common and severe types is **Duchenne muscular dystrophy** (pseudohypertrophic muscular dystrophy). This is inherited as a SEX-LINKED recessive trait and is therefore restricted to boys. It typically begins before the age of 6 with delayed walking and loss of muscle strength, first in the pelvic girdle followed by weakness in the shoulder girdle. Individuals with this disorder have difficulty in rising to a standing position and often fall. They usually are unable to walk by the age of 12 and frequently die from complications before the age of 20.

**muscular rigidity** stiffness in muscles that is resistant to changes in position. Individuals may misinterpret this symptom as weakness, but the condition usually occurs in the presence of normal strength. See COGWHEEL RIGIDITY; LEAD-PIPE RIGIDITY.

**muscular type** a constitutional type characterized by dominance of the muscular and locomotor systems over other body systems (see ROSTAN TYPES). It corresponds to the ATHLETIC TYPE in KRETSCHMER TYPOLOGY.

**musculocutaneous nerve** a nerve that innervates the muscles of the upper arm and cutaneous receptors of the lateral forearm.

**musculoskeletal disorder** any disease, injury, or significant impairment of muscles, bones, joints, and supporting connective (soft) tissues.

**musculoskeletal system** the system of SKELETAL MUSCLES and bones that generally function together to move the body and its parts and to maintain its general form.

**musical intelligence** in the MULTIPLE-INTELLIGENCES THEORY, the skills used in writing, playing, remembering, and understanding music.

**musical interval** the pitch or frequency spacing between two sounds. Two sounds that are an OCTAVE apart (i.e., with an interval of an octave) have a 2:1 ratio of their fundamental FREQUENCIES. See also CENT.

**musician's cramp** a type of OCCUPATIONAL CRAMP experienced by musicians, usually in the arm or hand, that prevents them from performing. The condition may be due to electrolyte imbalance. See also REPETITIVE STRAIN INJURY.

**musicogenic epilepsy** a type of REFLEX EPILEPSY in which seizures are precipitated by music.

**music therapy** the use of music as an adjunct to the treatment or rehabilitation of individuals to enhance their psychological, physical, cognitive, or social functioning. Music therapy involves singing, writing music, performing music, listening to music, and lyric analysis, among other techniques.

**mussitation** *n.* unintelligible muttering, or moving the lips without producing speech.

**musturbation** *n.* the belief by some individuals that they must absolutely meet often perfectionist goals in order to achieve success, approval, or comfort. Cognitive and behavioral therapies may be useful in bringing awareness and perspective to such maladaptive cognitions. See also RATIONAL EMOTIVE BEHAVIOR THERAPY. [defined by Albert ELLIS]

**musty** *adj.* denoting one of the seven classes of odorants in the STEREOCHEMICAL SMELL THEORY.

**mutation** *n.* a permanent change in the genetic material of an organism. It may consist of an alteration to the number or arrangement of chromosomes (a **chromosomal mutation**) or a change in the composition of DNA, generally affecting only one or a few bases in a particular gene (a **point mutation**). Mutations can occur spontaneously, but many are due to exposure to agents (**mutagens**) that significantly increase the rate of mutation; these include X-rays and other forms of radiation and certain chemicals. A mutation occurring in a body cell (i.e., a **somatic mutation**) cannot be inherited, whereas a mutation in a reproductive cell producing ova or spermatozoa (i.e., a **germ-line mutation**) can be transmitted to an individual's offspring. Most mutations either have no discernible effect or have a deleterious effect; however, a tiny minority are beneficial and thus give an individual and his or her descendants a selective advantage. Genetic testing of families or groups at high risk for SINGLE-GENE DISORDERS ascertains the presence or absence of mutations responsible for these disorders.

**mutilation** *n.* **1.** the destruction or removal of a limb or an essential part of the body. **2.** a destructive act causing a disfiguring injury to the body. See also SELF-MUTILATION.

**mutism** *n.* lack or absence of speaking due to physical or PSYCHOGENIC factors. The condition may result from a structural defect in the organs necessary for speech, congenital or early deafness in which an individual's failure to hear spoken words inhibits the development of speech, neurological damage or disorder, psychological disorders (e.g., CONVERSION DISORDER, CATATONIC SCHIZOPHRENIA), or severe emotional disturbance (e.g., extreme anger). The condition may also be voluntary, as in monastic vows of silence or the decision to speak only to selected individuals. See also AKINETIC MUTISM; ALALIA; SELECTIVE MUTISM; STUPOR.

**muttering delirium** a type of delirium in which an individual's speech is marked by low utterances, slurring, iteration, DYSARTHRIA, PERSEVERATION, or any combination of these. Typically, the individual's movements are dominated by restlessness and trembling.

**mutual exclusivity assumption** in language development, the tendency of children to suppose that an object has only one category label. If a child already knows a label for a whole object and hears a novel label applied, the assumption of mutual exclusivity will block the possibility that the novel label refers to the whole object. The child will then consider other possible referents of the novel label, such as a part of the object. Compare TAXONOMIC ASSUMPTION; WHOLE OBJECT ASSUMPTION.

**mutual gaze** see EYE CONTACT.

**mutual help** a form of SELF-HELP that is not professionally guided and that involves joining with others similar to

oneself to explore ways to cope with life situations and problems. Mutual help can occur in person, by telephone, or through the Internet.

**mutualism** *n.* an interaction in which two species live together in close association, to the mutual benefit of both. See also SYMBIOSIS. Compare COMMENSALISM; PARASITISM.

**mutuality** *n.* **1.** the tendency of relationship partners to think of themselves as members of a DYADIC RELATIONSHIP rather than as distinct individuals. As close relationships, particularly romantic ones, develop over time, partners display increasing levels of mutuality, which may influence their affect, cognition, and behavior. For example, when mutuality is high, people tend to think of their partners' characteristics and resources as their own. **2.** in INTERDEPENDENCE THEORY, the tendency of partners to depend equally on each others' behavior for the attainment of desirable outcomes. In asymmetric relationships, one partner plays a larger role than the other in determining what outcomes each partner receives, but in relationships characterized by mutuality, their power and influence are approximately equivalent.

**mutually exclusive events** **1.** two or more events that have no common elements. See also DISJOINT SETS. **2.** in probability theory, two or more events that cannot co-occur: The occurrence of one precludes the simultaneous or subsequent occurrence of the other(s). For example, the alternatives "heads" and "tails" in a single toss of a coin are mutually exclusive events.

**mutual masturbation** **1.** sexual activity in which two individuals stimulate each other's genitals at the same time for the purpose of sexual gratification. This is more properly considered a type of PETTING BEHAVIOR, as masturbation is defined as self-stimulation. **2.** sexual activity in which two or more individuals stimulate their own genitals while jointly viewing erotic materials.

**mutual pretense** an interaction pattern in which all participants try to act as if they are unaware of the most crucial facts in a situation (e.g., a situation in which one of the participants is terminally ill). This pattern is often regarded by therapists and researchers as an anxiety-driven strategy that inhibits communication, increases tension, and leads to missed opportunities for meaningful mutual support. [first described in *Awareness of Dying* (1965) by U.S. sociologists Barney G. Glaser (1930– ) and Anselm L. Strauss (1916–1996)]

**mutual reward theory** see REWARD THEORY.

**mutual storytelling technique** a PLAY THERAPY technique for communicating metaphorically with children. The therapist instructs a child to tell a fictional story that has a moral or lesson and then assesses the feelings and conflicts communicated in the story. The therapist then makes up a similar story but attempts to introduce a more adaptive resolution to the conflict in the story. [developed by U.S. psychiatrist Richard A. Gardner (1931–2003)]

**mutual support group** a group composed of individuals who meet on a regular basis to help one another cope with a shared life problem. This term is sometimes used by researchers and practitioners instead of the traditional term SELF-HELP GROUP, as it emphasizes the mutual, interdependent nature of self-help group processes.

**my-** combining form see MYO-.

**myasthenia** *n.* muscular weakness or lack of muscular endurance.

**myasthenia gravis** an autoimmune disorder (see AUTO-IMMUNITY) in which the body produces antibodies against ACETYLCHOLINE RECEPTORS, causing faulty transmission of nerve impulses at neuromuscular junctions. Affected muscles—initially those of the face and neck—are easily fatigued and may become paralyzed temporarily (e.g., muscles involved in eating may fail to function normally toward the end of a meal, speech may become slurred after a period of talking). The disease is progressive, eventually affecting muscles throughout the body.

**mydriasis** *n.* excessive dilation (widening) of the pupil of the eye caused by anticholinergic drugs (e.g., atropine and scopolamine) acting on MUSCARINIC RECEPTORS or by opioid withdrawal. —**mydriatic** *adj.*, *n.*

**myel-** combining form see MYELO-.

**myelencephalon** *n.* see MEDULLA OBLONGATA.

**myelin** *n.* the substance that forms the insulating sheath around the axons of many neurons. It consists mainly of phospholipids, with additional **myelin proteins**, and accounts for the whitish color of WHITE MATTER.

**myelinated fiber** a nerve fiber that is covered by a MYELIN SHEATH. The insulating properties of the myelin sheath enable myelinated fibers to conduct nerve impulses much faster than nonmyelinated fibers (see SALTATORY CONDUCTION).

**myelination** *n.* the formation and development of a MYELIN SHEATH around the axon of a neuron, which is effected by neuroglia, such as SCHWANN CELLS. Researchers look to anomalies in this process to explain some forms of severe mental illness (e.g., schizophrenia). Also called **axonal myelination**; **medullation**; **myelinization**.

**myelin sheath** the insulating layer around many axons that increases the speed of conduction of nerve impulses. It consists of myelin and is laid down by GLIA, which wrap themselves around adjacent axons. The myelin sheath is interrupted by small gaps, called NODES OF RANVIER, which are spaced about every millimeter along the axon. Also called **medullary sheath**.

**myelitis** *n.* inflammation of the spinal cord.

**myelo-** (**myel-**) combining form spinal cord or bone marrow.

**myeloarchitecture** *n.* the development and distribution of the fiber processes of the nerve cells of the brain, particularly the myelinated fibers. See also CORTICAL LAYERS.

**myelocele** *n.* protrusion of the spinal cord through an abnormal opening in the vertebral column, as found in SPINA BIFIDA.

**myelomeningocele** *n.* see MENINGOMYELOCELE.

**myenteric plexus** a network of nerve fibers and neuron cell bodies located between the inner and outer muscle layers of the digestive tract, including the esophagus, stomach, and intestines. Together with other enteric plexuses, it controls the responses of the digestive tract.

**Myers-Briggs Type Indicator (MBTI)** a personality test designed to classify individuals according to their expressed choices between contrasting alternatives in certain categories of traits. The categories, based on JUNGIAN TYPOLOGY, are (a) Extraversion–Introversion, (b) Sensing–In-

tuition, (c) Thinking–Feeling, and (d) Judging–Perceiving. The participant is assigned a type (e.g., INTJ, ESFP) according to the pattern of choices made. The test has little credibility among research psychologists but is widely used in educational counseling and human resource management to help improve work and personal relationships, increase productivity, and identify interpersonal communication preferences and skills. [Isabel Briggs **Myers** (1897–1980), U.S. personologist, and her mother Katharine Cook **Briggs** (1875–1968)]

**myesthesia** *n.* the muscle sense; that is, the sensation felt in muscle contractions and the awareness of movement in muscles and joints. See also KINESTHESIS.

**myo-** (*my-*) *combining form* muscle.

**myocardial infarction** see INFARCTION.

**myoclonic** *adj.* of, relating to, or characterized by MYOCLONUS.

**myoclonic epilepsy** epilepsy characterized by MYOCLONIC SEIZURES or MYOCLONUS in conjunction with other types of seizure. Also called **myoclonus epilepsy**.

**myoclonic movements** movements characterized by rapid, involuntary muscle jerks.

**myoclonic seizure** a rare type of GENERALIZED SEIZURE characterized by rapid, involuntary muscle jerks.

**myoclonus** *n.* rapid, involuntary contraction of a muscle or group of muscles. This may occur normally, as when a limb or other part of the body suddenly jerks while falling asleep (see NOCTURNAL MYOCLONUS), or abnormally, as in CREUTZFELDT–JAKOB DISEASE and other neurological disorders.

**myoclonus epilepsy** see MYOCLONIC EPILEPSY.

**myoelectric prosthesis** an artificial limb (see PROSTHESES), such as a **myoelectric arm**, that can be manipulated by nerve impulses generated by voluntary muscle movements. The nerve impulses are received by an electronic transducer that amplifies and converts them into appropriate movements of the prosthesis through tiny electric motors.

**myofascial pain syndrome (MPS)** see CHRONIC MYOFASCIAL PAIN.

**myography** *n.* a technique that utilizes apparatus to record aspects of muscle activity. Some devices record the small electric potential that accompanies contraction of the muscle fibers. A **myograph** is an instrument that records the extent, force, or duration of ISOTONIC CONTRACTIONS or the tension and duration of ISOMETRIC CONTRACTIONS. A **myogram** is a graphic record of the velocity and intensity of muscle contractions. —**myographic** *adj.*

**myoneural junction** see NEUROMUSCULAR JUNCTION.

**myopathy** *n.* any disease or disorder of the muscles, hereditary or acquired. The term is usually qualified by an adjective that specifies the type of myopathy or its cause. For example, ACUTE ALCOHOLIC MYOPATHY and **hereditary myopathy** suggest a cause, whereas **ocular myopathy** defines the affected area as the muscles that control eye movements, and **neuromyopathy** refers to a disorder of the nerves and muscles combined.

**myopia** *n.* nearsightedness, a REFRACTIVE ERROR due to an abnormally long eye: The retinal image is blurred because the focal point of one or both eyes lies in front of, rather than on, the retina. Specific types include **chromic myopia**,

marked by defective color perception of distant objects; **progressive myopia**, a gradual loss of accommodation for distant vision associated with aging; and **prodromal myopia**, in which accommodation changes permit a return of normal sightedness after a period of myopia. Compare EMMETROPIA; HYPEROPIA.

**myosin** *n.* see MUSCLE FIBER.

**myosis** *n.* see MIOSIS.

**myositis** *n.* inflammation of a muscle.

**myotatic reflex** see STRETCH REFLEX.

**myotonia** *n.* increased tone and contractility of a muscle, with slow or delayed relaxation. —**myotonic** *adj.*

**myotonic disorder** any disease, generally inherited, in which voluntary muscles show increased tone and contractility but relax slowly and with great difficulty. The condition often affects the muscles of the hands or is manifested by general muscle stiffness.

**myotonic muscular dystrophy** a type of MUSCULAR DYSTROPHY marked by increased muscle tone and contractility (myotonia) and muscle wasting, most noticeably in the face and hands, and often accompanied by cataracts and cardiac abnormalities. It is an autosomal dominant disorder (see DOMINANT ALLELE) that is usually first noted in adolescence or early adulthood, although age of onset can vary. Also called **dystrophia myotonica**; **Steinert's disease**.

**myriachit** *n.* a CULTURE-BOUND SYNDROME found in Siberian populations. Similar to LATAH, it is characterized by indiscriminate, apparently uncontrolled imitations of the actions of other people encountered by the individual. Also called **ikota**; **irkunii**; **menkeiti**; **olan**. See also IMU; JUMPING FRENCHMEN OF MAINE SYNDROME.

**Mysoline** *n.* a trade name for PRIMIDONE.

**mysophilia** *n.* a pathological interest in dirt or filth, often with a desire to be unclean or in contact with dirty objects. Mysophilia may be expressed as a PARAPHILIA in which the person is sexually aroused by a dirty partner.

**mystical participation** a mode of engagement or type of mental activity in which the boundaries between the natural and the spiritual, and between oneself and one's environment, are either overcome or not established in the first place. The term was introduced by French philosopher and ethnologist Lucien Levy-Bruhl (1857–1939), who held that mystical participation is a characteristic of so-called primitive cultures.

**mysticism** *n.* **1.** the view that there are real sources of knowledge and truth other than sensory experience and rational deduction. It is held that such knowledge comes through inspiration, revelation, or other experiences that are not strictly sensory, although there may be a sensory component. A common implication is that such knowledge cannot readily be shared with or conveyed to others but must be individually achieved. Mysticism thus carries a connotation of subjectivism. **2.** the belief that an immediate knowledge of, or union with, the divine can be achieved through personal religious experience. Accounts of mystical experiences in the writings of various spiritual traditions typically describe a state of intense, trancelike contemplation in which a sense of profound insight is accompanied by feelings of ecstatic self-surrender. —**mystic** *n.*, *adj.* —**mystical** *adj.*



**mystic union** the feeling of spiritual identification with God, nature, or the universe as a whole. See BUDDHISM; OCEANIC FEELING; TRANSCENDENTAL MEDITATION; YOGA; ZEN THERAPY.

**Mytelase** *n.* a trade name for AMBENONIUM.

**mythology** *n.* **1.** a body of traditional stories (myths) associated with the early history of a particular culture. Such stories generally involve supernatural beings and events and often seek to explain particular natural or cultural phenomena (e.g., the cycle of the seasons, a specific custom) in terms of their supposed origins. Myths are often distinguished from LEGENDS as having little or no basis in historical events. **2.** the study of myths. Sigmund FREUD compared myths to DREAMS, which contain hidden meanings, and believed they throw unique light on the cultures from which they stem, and in some instances, as in the myth of Oedipus, on human nature in general. **3.** in Carl JUNG's ANALYTIC PSYCHOLOGY, primordial images, or AR-

CHETYPES, that are stored in the COLLECTIVE UNCONSCIOUS. —**mythological** *adj.*

**mythomania** *n.* **1.** a tendency to elaborate, exaggerate, and tell lies, including reports of imagined experiences, often involving SELF-DECEPTION. See also FACTITIOUS DISORDER; PATHOLOGICAL LYING. **2.** an abnormal interest in myths, in which the individual may believe fantasy to be reality, and a tendency to fabricate incredible stories. Also called **pseudologia fantastica**.

**myxedema** *n.* a metabolic disorder that develops in adulthood due to a deficiency of thyroid hormone (see HYPOTHYROIDISM). The condition is characterized by subnormal heart rate, circulation, body temperature, and most other metabolic activities. Affected individuals tend to be fatigued, listless, and overweight but usually respond to administration of thyroxine. —**myxedemic** *adj.*

**MZ twins** abbreviation for MONOZYGOTIC TWINS.

# Nn

**n 1.** symbol for the number of scores or observations obtained from a particular experimental condition or subgroup. **2.** symbol for REFRACTIVE INDEX.

**N** abbreviation for NUMERICAL ABILITY.

**N** symbol for the total number of cases (participants) in an experiment or study.

**N1 component** the first negative component of an EVENT-RELATED POTENTIAL, occurring approximately 100 ms after stimulus onset. The N1 component is usually larger for attended stimuli than for unattended stimuli, a phenomenon known as the **N1 attention effect**. Hence, it is thought to reflect the initial sensory and attentional processing of a stimulus by specific areas of the cerebral cortex.

**N=1 design** see SINGLE-CASE DESIGN.

**NA 1.** abbreviation for NARCOTICS ANONYMOUS. **2.** abbreviation for Negative Affect within the POSITIVE AND NEGATIVE AFFECT SCHEDULE.

**NAB** abbreviation for NEUROPSYCHOLOGICAL ASSESSMENT BATTERY.

**nabilone** *n.* a synthetic cannabinoid, closely related to TETRAHYDROCANNABINOL, that is used clinically to manage nausea and vomiting in patients recovering from surgical anesthesia or undergoing chemotherapy. U.S. and Canadian trade name: **Cesamet**.

**n-Ach** abbreviation for NEED FOR ACHIEVEMENT.

**nAchR** abbreviation for NICOTINIC RECEPTOR.

**nadle** *n.* see TWO-SPIRIT.

**NAEP** abbreviation for NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS.

**Nafe pattern theory** a theory claiming that the pattern of firing of neurons is responsible for the quality of cutaneous sensations. [John Paul **Nafe** (1886–1970), U.S. psychologist]

**n-Aff** abbreviation for NEED FOR AFFILIATION.

**Naglieri Nonverbal Ability Test (NNAT)** a test of nonverbal reasoning and problem-solving ability for students in kindergarten through Grade 12, regardless of language and educational or cultural background. It consists of 38 abstract matrix designs measuring pattern completion, reasoning by analogy, serial reasoning, and spatial visualization. The test can be used to screen for learning disabilities or as an assessment tool for students who lack verbal skills, have English only as a second language, or possess limited English abilities. An extension and modification of the 1985 Matrix Analogies Test, the NNAT was originally developed in 1997. The second edition, **NNAT2**, was released in 2007. [Jack A. **Naglieri** (1950– ), U.S. psychologist]

**naikan** *n.* a Japanese therapy that emphasizes character building through rigorous self-reflection upon (a) what the client has received from others, (b) what the client has returned to others, and (c) how the client's actions may have

hurt others. Through this process of self-reflection, guided by the therapist, the client acquires a sense of responsibility for his or her actions and an appreciation of the positive influences in his or her life. [introduced by Japanese Buddhist of the Jodo Shinshu sect Yoshimoto Ishin (1916–1988)]

**nail biting** the compulsive habit of chewing on one's fingernails, usually thought to be a means of releasing tension.

**naive analysis of action** in ATTRIBUTION THEORY, a process of reasoning or intuiting by which laypersons determine whether another person (an "actor") caused a certain action. Also called **lay psychology**; **naive psychology**. See CORRESPONDENT INFERENCE THEORY. [postulated in 1958 by Fritz HEIDER]

**naive hedonism** see PRECONVENTIONAL LEVEL.

**naive observer 1.** an observer who has little or no prior information about the events that he or she is observing or the people involved in them. In psychology experiments, the reactions of a naive observer may be highly revealing when contrasted with those of other observers who have been given selected pieces of information (or misinformation) about the observed situation or the actors in it (e.g., that a particular individual has a criminal conviction). **2.** in philosophy, an observer who adopts a position of NAIVE REALISM.

**naive participant** a participant who has not previously taken part in a particular research study and has not been made aware of the experimenter's hypothesis.

**naive personality theories** a set of ideas that laypeople tend to hold about how specific personality traits cluster together within a person. Such theories, which are often held implicitly rather than explicitly, are a major concern of ATTRIBUTION THEORY. Also called **implicit personality theories**; **layperson personality theories**. See NAIVE ANALYSIS OF ACTION. See also IMPLICIT SELF THEORY.

**naive psychology** see NAIVE ANALYSIS OF ACTION.

**naive realism 1.** the belief or assumption that one's sense perceptions provide direct knowledge of external reality, unconditioned by one's perceptual apparatus or individual perspective. Since the advent of CARTESIANISM, most philosophy has assumed that such a position is untenable. The cognitive development theory of Jean PIAGET stresses the child's progress away from naive realism and toward conceptualization and logical reasoning. As conceptualization and reasoning develop, naive realism is presumed to diminish. Also called **direct realism**; **phenomenal absolutism**. **2.** in social psychology, the tendency to assume that one's perspective of events is a natural, unbiased reflection of objective reality and to infer bias on the part of anyone who disagrees with one's views. See FALSE-CONSENSUS EFFECT.

**Nalline test** a test to determine abstinence from opiates, in which the subject is given an injection of the OPIOID ANTAGONIST nalorphine (Nalline). This precipitates with-

drawal symptoms if opiates have been used recently. It is not currently in general use.

**nalmefene** *n.* see OPIOID ANTAGONIST.

**nalorphine** *n.* see OPIOID ANTAGONIST.

**naloxone** *n.* a morphine-derived OPIOID ANTAGONIST that prevents the binding of opioids to OPIOID RECEPTORS, having primary activity at the mu opioid receptor. Like other opioid antagonists, it can quickly reverse the effects of opioid overdose and is useful in emergency settings to reverse respiratory depression. It has poor oral and sublingual bioavailability and must be dosed parenterally (U.S. trade name: **Narcan**). In combination with BUPRENORPHINE, it is used as an alternative to METHADONE MAINTENANCE THERAPY (U.S. trade name: **Suboxone**).

**naltrexone** *n.* an OPIOID ANTAGONIST that, like the shorter-acting NALOXONE (but with better enteral bioavailability), prevents the binding of opioid agonists to opioid receptors. Accordingly, both drugs may precipitate a rapid withdrawal syndrome. If naltrexone is taken prior to use of opiate drugs, it will prevent their reinforcing effects and can therefore be used for the management of opioid dependence in individuals desiring abstinence. Naltrexone is also appropriate as an adjunctive treatment in the management of alcoholism, either in oral or in long-term injectable formulations. The long-term injectable is also approved for opioid dependence. U.S. trade name: **ReVia**; **Vivitrol**.

**name-of-the-father** *adj.* in the theory of French psychoanalyst Jacques Lacan (1901–1981), denoting the stage at which the infant first enters the realm of the SYMBOLIC. The child's ability to "name the father" as a symbol for the absence of the mother represents his or her first use of symbolization and the first recognition that the father is a rival. See OEDIPUS COMPLEX. See also MIRROR PHASE.

**NAMI** abbreviation for NATIONAL ALLIANCE ON MENTAL ILLNESS.

**naming** *n.* an association disturbance observed in schizophrenia, in which the individual relates to the external world solely by naming objects and actions (e.g., naming furniture or other objects in an examining room).

**naming explosion** a stage in language development, usually occurring during a child's 2nd year, when a marked increase occurs in the rate at which new words are added to the child's productive vocabulary. This stage marks a change in the cognitive and linguistic underpinnings of children's language use: It indicates their increased understanding that words are symbols that refer to actual things in the world, and it is thought to explain why nouns in particular are acquired at a rapid rate. Also called **vocabulary spurt**; **word spurt**.

**naming task** a task in which an individual is required to name an object from its picture or its description or simply to produce names from a certain category (e.g., birds). Naming tasks are used to assess language impairments and difficulties recalling general knowledge from SEMANTIC MEMORY.

**nanometer** (symbol: nm) *n.*  $10^{-9}$  m (i.e., one billionth of a meter). The wavelengths in the visible range of the electromagnetic spectrum extend from approximately 400 to 700 nm.

**nanosomia body type** see PYGMYISM.

**Narcan** *n.* a trade name for NALOXONE.

**narcissism** *n.* **1.** excessive self-love or egocentrism. **2.** in psychoanalytic theory, the taking of one's own EGO or body as a sexual object or focus of the LIBIDO or the seeking or choice of another for relational purposes on the basis of his or her similarity to the self. See BODY NARCISSISM; PRIMARY NARCISSISM; SECONDARY NARCISSISM. —**narcissist** *n.* —**narcissistic** *adj.*

**narcissistic character** see NARCISSISTIC PERSONALITY.

**narcissistic object choice** in psychoanalytic theory, selection of a mate or other LOVE OBJECT similar to oneself. Compare ANACLITIC OBJECT CHOICE.

**narcissistic personality** a pattern of traits and behaviors characterized by excessive self-concern and overvaluation of the self. Also called **narcissistic character**.

**narcissistic personality disorder** in *DSM-IV-TR* and *DSM-5*, a personality disorder with the following characteristics: (a) a long-standing pattern of grandiose self-importance and an exaggerated sense of talent and achievements; (b) fantasies of unlimited sex, power, brilliance, or beauty; (c) an exhibitionistic need for attention and admiration; (d) either cool indifference or feelings of rage, humiliation, or emptiness as a response to criticism, indifference, or defeat; and (e) various interpersonal disturbances, such as feeling entitled to special favors, taking advantage of others, and inability to empathize with the feelings of others. [originally formulated by psychoanalysts Wilhelm Reich (1897–1957), Otto Kernberg (1928– ), and Heinz Kohut (1913–1981) and psychologist Theodore MILLON]

**Narcissistic Personality Inventory (NPI)** a forced-choice self-report instrument commonly used in social psychological research on self-love and egocentrism (i.e., NARCISSISM). Although several forms of the NPI exist, each with different numbers of items and different underlying factor structures, the most popular version is that developed in 1988 by psychologists Robert N. Raskin and Howard Terry, consisting of 40 dyadic statements intended to reflect narcissistic sentiments (e.g., "I am embarrassed by compliments" vs. "I enjoy compliments"; "I am average" vs. "I am special"). An individual chooses from each pair of statements the one that best describes him or her, and the pattern of responses is believed to reveal the degree to which the person possesses each of the following seven characteristics: authority, entitlement, exhibitionism, exploitativeness, self-sufficiency, superiority, and vanity. These traits represent a mix of adaptive and maladaptive attributes that reflect one's capacity to maintain a positive self-image and sense of personal agency. The original NPI—developed in 1979 by Raskin and U.S. psychologist Calvin S. Hall (1909–1985)—was designed as a research instrument to evaluate individual differences in narcissism in the general (i.e., nonclinical) population. It was not intended, nor are subsequent versions of the NPI intended, as a diagnostic assessment tool for NARCISSISTIC PERSONALITY DISORDER.

**narcissistic transference** in SELF PSYCHOLOGY, any one of a set of transferences that involve, and are used in treatment to activate, the narcissistic needs of the patient in relation to significant others; this contrasts with the classical psychoanalytic concept of transference as a transposition of one's needs (from various stages of PSYCHOSEXUAL DEVELOPMENT earlier in life) to a person who can fulfill them. Narcissistic transferences include IDEALIZING TRANSFERENCE, MIRROR TRANSFERENCE, and TWINSHIP

TRANSFERENCE. Also called **self-object** (or **selfobject**) **transference**. [first described by Austrian-born U.S. psychoanalyst Heinz Kohut (1913–1981)]

**narcissistic type** see LIBIDINAL TYPES.

**narcoanalysis** *n.* a form of psychoanalysis in which injections of drugs (often opioids) are used to induce a semi-hypnotic state in order to facilitate exploration and ventilation of feelings, uncover repressed traumatic memories, and, through the analyst's review and interpretation with the patient afterward, promote the patient's insight into the unconscious forces that underlie his or her symptoms. The technique was developed initially to treat COMBAT STRESS REACTIONS in the 1940s and is rarely if ever used now.

**narcolepsy** *n.* a disorder consisting of excessive daytime sleepiness accompanied by brief "attacks" of sleep during waking hours. These sleep attacks may occur at any time or during any activity, including in potentially dangerous situations such as while driving an automobile. The attacks are often associated with HYPNAGOGIC hallucinations, SLEEP PARALYSIS, and CATAPLEXY and are marked by immediate entry into REM sleep without going through the usual initial stages of sleep. Also called **paroxysmal sleep**. —**narcoleptic** *adj.*

**narcolepsy-cataplexy syndrome** a symptom pattern consisting of sudden, repeated loss of muscle tone (see CATAPLEXY) and recurrent sleep attacks (see NARCOLEPSY).

**narcomania** *n.* **1.** a pathological desire for narcotic drugs to relieve pain or discomfort. **2.** an obsolete name for psychosis resulting from long-term abuse of narcotic drugs.

**narcosynthesis** *n.* a treatment technique that involves the administration of narcotic drugs to stimulate recall of emotional traumas, followed by "synthesis" of these experiences with the patient's emotional life through therapeutic discussions in the waking state. [developed during World War II by U.S. psychiatrists Roy Richard Grinker (1901–1993) and John P. Spiegel (1911–1991)]

**narcotherapy** *n.* psychotherapy conducted while the patient is in a semiconscious state induced by narcotic drugs, such as amobarbital (Amytal) or thiopental. For example, narcotherapy was used with individuals experiencing COMBAT STRESS REACTIONS during and after World War II. See also NARCOANALYSIS; NARCOSYNTHESIS.

**narcotic** **1.** *n.* originally, any drug that induces a state of stupor or insensibility (narcosis). More recently, the term referred to strong OPIOIDS used clinically for pain relief, but this usage is now considered imprecise and pejorative; the term is still sometimes used in legal contexts to refer to a wide variety of abused substances. **2.** *adj.* of or relating to narcotics or narcosis.

**narcotic agonist** see OPIOID AGONIST.

**narcotic analgesic** see OPIOID ANALGESIC.

**narcotic antagonist** see OPIOID ANTAGONIST.

**narcotic dependence** see OPIOID DEPENDENCE.

**Narcotics Anonymous (NA)** a self-help organization for those who seek assistance with a drug addiction, based on a TWELVE-STEP PROGRAM and modeled after ALCOHOLICS ANONYMOUS. The only requirement for membership is the desire to stop using addictive drugs.

**narcotic stupor** a state of lethargy or limited mobility

and decreased responsiveness to stimulation due to the effects of an opioid drug. This state may border on loss of consciousness and may be followed by coma in extreme cases.

**Nardil** *n.* a trade name for PHENELZINE.

**NARHC** abbreviation for NATIONAL ASSOCIATION OF RURAL HEALTH CLINICS.

**narrative analysis** a type of QUALITATIVE ANALYSIS in which a researcher collects and examines stories from individuals about a variety of concrete life situations, ranging from first romantic involvements to divorce, aging, and life satisfaction. The goal is to understand how individuals experience certain events, structure them into coherent sequences, and give them subjective meaning. Also called **narrative inquiry**; **narrative research**.

**narrative method** **1.** a method of questioning eyewitnesses to an event that reconstructs the event using both the known facts and personal accounts of the experience. **2.** a method of presenting either opening or closing arguments to the jury in a way that tells a story, with events placed in chronological order and including vivid details. See also STORY MODEL.

**narrative psychology** a field in psychology that investigates the value of stories and storytelling in giving meaning to individuals' experiences—shaping their memory of past events, their understanding of the present, and their projections of future events—and in defining themselves and their lives. The term was introduced by Theodore R. SARBIN, whose edited volume *Narrative Psychology: The Storied Nature of Human Conduct* (1986) defined narrative as an integral feature in the scientific enterprise; he referred to narrative as a "root metaphor" for psychology—that is, a metaphor for examining and interpreting human behavior. Numerous other people in personality and social psychology, memory research, and other areas of inquiry have subsequently contributed to this field.

**narrative theory** a theoretical approach to the study of narratives and their structures. Narrative theory emerged as a branch of literary studies but has since been extended to various questions in psychology, notably the ways in which established narratives can shape our social and subjective experiences. See also DISCOURSE ANALYSIS.

**narrative therapy** treatment for individuals, couples, or families that helps them reinterpret and rewrite their life events into true but more life-enhancing narratives or stories. Narrative therapy posits that individuals are primarily meaning-making beings who are the linguistic authors of their lives and who can reauthor their life stories by learning to deconstruct them, by seeing patterns in their ways of interpreting life events or problems, and by reconstructing problems or events in a more helpful light. See also CONSTRUCTIVISM; CONSTRUCTIVIST PSYCHOTHERAPY; DECONSTRUCTION.

**narratophilia** *n.* sexual interest and arousal obtained from speaking or hearing sexually explicit words during sexual activity. It most commonly occurs in telephone or online computer sex, in which partners talk or write while masturbating. There are commercial services that employ people to engage in narratophilia with clients for a fee. In some cases of narratophilia, however, people prefer to make obscene phone calls to strangers or randomly selected numbers, as the involvement of a nonconsenting person adds to their pleasure. —**narratophile** *n.*

**NAS** abbreviation for NATIONAL ACADEMY OF SCIENCES.

**nasal 1.** *adj.* of or relating to the nose. **2.** *adj.* denoting a speech sound produced by letting all or most of the air-stream pass through the nasal (rather than the oral) cavity, for example, [ng] in *sing*, or the sound of *-on* in the French word *bon*. **3.** *n.* a nasal speech sound.

**nasal cavity** the space within the nose, divided into two halves by the **nasal septum**, that communicates with the exterior via the two nostrils and leads to the NASOPHARYNX. Separated from the oral cavity by the hard palate, it is lined with mucous membrane containing OLFACTORY EPITHELIUM and also forms part of the VOCAL TRACT.

**NASA Task Load Index (NASA TLX)** a subjective rating procedure that enables raters to assess the total workload of operatives in a variety of HUMAN-MACHINE SYSTEMS. An overall workload score is derived from a weighted average of ratings on six subscales: mental demands, physical demands, temporal demands, own performance, effort, and frustration.

**nasopharynx** *n.* the portion of the PHARYNX that lies above the level of the SOFT PALATE. The nasopharynx is closed off from other parts of the pharynx during swallowing and speaking by reflex raising of the soft palate.

**NASPSA** abbreviation for NORTH AMERICAN SOCIETY FOR THE PSYCHOLOGY OF SPORT AND PHYSICAL ACTIVITY.

**NASW** abbreviation for NATIONAL ASSOCIATION OF SOCIAL WORKERS.

**natality** *n.* see BIRTH RATE.

**National Academy of Sciences (NAS)** a private, nonprofit society of distinguished scholars engaged in scientific and engineering research, dedicated to the furtherance of science and technology and to their use for general welfare. Its headquarters are in Washington, DC. The NAS was founded by the U.S. Congress in 1863 and expanded to include the National Research Council in 1916, the National Academy of Engineering in 1964, and the Institute of Medicine in 1970. Collectively, the four organizations are known as the **National Academies**.

**National Alliance on Mental Illness (NAMI)** a network of SELF-HELP GROUPS that provides emotional and educational support for relatives and individuals affected by mental illness. As an organization, NAMI also advocates for better access to mental health services and for mental health research. Formerly called **National Alliance for the Mentally Ill**.

**National Assessment of Educational Progress (NAEP)** a set of assessments conducted periodically of U.S. students' knowledge of mathematics, reading, science, writing, the arts, civics, economics, geography, U.S. history, and technology and engineering. The results are based on a representative sample of students in Grades 4, 8, and 12 for the main assessments and at ages 9, 13, or 17 years for long-term trend assessments. These grades and ages were chosen because they represent critical junctures in academic achievement. Aggregate scores are provided for subject-matter achievement, instructional experiences, and school environment for populations of students (e.g., all fourth graders) and groups within those populations (e.g., female students, Hispanic students) but not for individual students or schools. The largest nationally representative and continuing assessment of its kind, NAEP is intended to

provide a clear picture of academic progress across all states and in selected urban districts over time.

**National Association of Rural Health Clinics (NARHC)** an organization that seeks to promote, expand, improve, and protect the delivery of quality, cost-effective health care services in underserved rural areas. NARHC actively engages in the legislative and regulatory process with the U.S. Congress, federal agencies, and rural health organizations.

**National Association of Social Workers (NASW)** the world's largest organization of professional social workers. Founded in 1955, NASW is dedicated to promoting the professional development of its members and setting ethical and professional standards of practice. The organization's certification programs are the ACADEMY OF CERTIFIED SOCIAL WORKERS and the Diplomate in Clinical Social Work. Chief among its publications is the journal *Social Work*.

**national character** the general personality characteristics attributed to the people of a nation. Although culture has a recognized effect on character formation, the idea of a national character is not generally considered a useful construct, as it invariably consists of an unexamined STEREOTYPE. See also CULTURAL DETERMINISM.

**National Chronic Fatigue Syndrome and Fibromyalgia Association (NCFSEA)** an organization, headquartered in Kansas City, Missouri, with the goal of providing information and educating the public about chronic fatigue syndrome, fibromyalgia syndrome, and related disorders.

**National Committee for Quality Assurance (NCQA)** a national nonprofit organization, founded in 1990, that reviews and accredits MANAGED CARE plans and measures the quality of care offered by them.

**National Eating Disorders Association (NEDA)** a nonprofit organization headquartered in Seattle, Washington, that provides education, support groups, and other assistance to individuals with eating disorders, their family members, and their friends. Formed in 2001 from the merger of the **American Anorexia/Bulimia Association** and **Eating Disorders Awareness and Prevention, Inc.**, NEDA seeks to promote research into and enhance the prevention and treatment of eating disorders. Its many activities include holding an annual conference; conducting public outreach and other media campaigns; developing and distributing toolkits for educators, parents, and other individuals; operating a nationwide information and referral helpline; and advocating for policy change.

**National Health Interview Survey (NHIS)** a questionnaire that is the principal source of information on the health of the civilian noninstitutionalized population of the United States and one of the major data-collection programs of the National Center for Health Statistics (NCHS). The survey includes core questions and sometimes questions relating to specific initiatives (e.g., aging, healthy people, AIDS).

**National Institute of Mental Health (NIMH)** an agency of the federal government established in 1949 to improve understanding of the mind, the brain, and behavior and reduce the burden of mental illness through research. It is committed to scientific programs to educate and train future mental health researchers, including those in molecular science, cognitive and affective neuro-

science, and other disciplines required for the study of mental illness and the brain.

**nationalism** *n.* **1.** strong, often excessive, feelings of pride in and allegiance to one's nation (usually the nation in which one is a citizen, although sometimes a nation with which one has ties via ETHNICITY or HERITAGE) and its culture or belief in its superiority. **2.** a goal or policy of national independence, especially in relation to a dominant colonial or occupying power. —**nationalist** *n., adj.* —**nationalistic** *adj.*

**National Labor Relations Act** legislation passed by the U.S. Congress in 1935 that legalized the rights of employees to form and operate unions, engage in COLLECTIVE BARGAINING, and strike. It also identified and prohibited certain UNFAIR LABOR PRACTICES of employers and created the National Labor Relations Board to administer and enforce the provisions of the act. Sponsored by German-born U.S. politician Robert F. Wagner (1877–1953), it is also known as the **Wagner Act**. See also LABOR MANAGEMENT RELATIONS ACT.

**National Mental Health Association (NMHA)** the former name for MENTAL HEALTH AMERICA.

**National Parent Teachers Association (NPTA)** see PARENT TEACHERS ASSOCIATION.

**National Practitioner Data Bank (NPDB)** a computerized database, established through Title IV of Public Law 99-660 (the Health Care Quality Improvement Act of 1986) and maintained and operated by the U.S. Department of Health and Human Services, that contains information on physicians and other health care professionals against whom MALPRACTICE claims have been paid or certain disciplinary actions taken. The database is primarily an alert or flagging system intended to facilitate a comprehensive review of health care practitioners' professional credentials.

**National Register of Health Service Providers in Psychology** a national, nonprofit CREDENTIALING organization for professional psychologists, founded in 1974 to advance psychology as a profession and improve the delivery of health services to the public.

**National Research Council** see NATIONAL ACADEMY OF SCIENCES.

**National Science Foundation (NSF)** an independent agency of the U.S. government, established by the National Science Foundation Act of 1950. Its mission is to promote the progress of science; to advance national health, prosperity, and welfare; and to secure the defense of the nation. Activities that fall within its purview include the initiation and support of scientific and engineering research; exchange of information among scientists; technological development; distribution of federal monies to universities and other research organizations; and political advocacy for national policies and research in science and engineering.

**native** *adj.* see INNATE.

**Native American** a member of any of various indigenous peoples of the western hemisphere whose ancestors populated that territory prior to European colonization. When referring to the indigenous peoples of North America, the term **American Indian** is also used.

**native speaker** a person who speaks a particular lan-

guage as a mother tongue rather than as a second or foreign language.

**nativism** *n.* **1.** the doctrine that the mind has certain innate structures and that experience plays a limited role in the creation of knowledge. See also INNATE IDEAS; NATIVISTIC THEORY. Compare CONSTRUCTIVISM; EMPIRICISM. **2.** the doctrine that mental and behavioral traits are largely determined by hereditary, rather than environmental, factors. See NATURE–NURTURE. **3.** the theory that individuals are born with all perceptual capabilities intact, although some capabilities may depend on the biological maturation of perceptual systems to reach adult levels. —**nativist** *adj., n.* —**nativistic** *adj.*

**nativistic theory** in linguistics, the theory that human beings are born with an innate knowledge of language that enables them to structure and interpret the data they encounter as language learners. Although certain theories about the origins of human language in prehistory have been termed *nativistic* (see LANGUAGE-ORIGIN THEORY), the term is now mainly associated with Noam CHOMSKY's theory of language acquisition in young children. See LANGUAGE ACQUISITION DEVICE; LANGUAGE UNIVERSAL.

**natural category** see BASIC-LEVEL CATEGORY.

**natural child** **1.** a biological offspring of a parent, in contrast to an adopted child. **2.** one of the child ego states in TRANSACTIONAL ANALYSIS, characterized as carefree, fun-loving, creative, impulsive, and impatient. Compare ADAPTED CHILD.

**natural childbirth** a method of labor and child delivery that does not include (or is designed to eliminate) the need for medical interventions, such as anesthetics. The mother receives preparatory education in areas such as breathing and relaxation coordination, exercise of the muscles involved in labor and delivery, and postural positions that make labor more comfortable and allow for conscious participation in delivery. See also LAMAZE METHOD.

**natural consequences** a form of discipline in which parents do not intervene in their children's actions but let the results of the actions serve as a punishment or lesson. For example, a lesson is learned by children when a toy they have failed to bring indoors during a rainstorm is ruined.

**natural experiment** the study of a naturally occurring situation as it unfolds in the real world. The researcher does not exert any influence over the situation but rather simply observes individuals and circumstances, comparing the current condition to some other condition. For example, an investigator might evaluate the influence of a new community policing program by observing neighborhood activities after it has been implemented and comparing the outcome to that for neighborhoods in which the policy has not been implemented. Since such real-life events cannot be manipulated or prearranged, natural experiments are QUASI-EXPERIMENTAL DESIGNS rather than true experiments. Also called **naturalistic design**; **naturalistic research**.

**natural family planning** avoiding pregnancy by the use of natural techniques of birth control, such as the RHYTHM METHOD, as opposed to the use of oral contraceptives, intrauterine devices, diaphragms, and similar methods.

**natural fertility** in physiology, the reproductive capacity of animals; in humans specifically, the reproductive ca-

capacity when unaffected by contraception or induced abortion.

**natural group 1.** any group formed through natural social processes, particularly when compared to ad hoc laboratory groups created by researchers in their studies of group processes. Examples include an audience, board of directors, clique, club, committee, crowd, dance troupe, family, gang, jury, orchestra, sorority or fraternity, and support group. Also called **bona fide group**. **2.** a group whose members are united through common descent or custom, such as a family or tribe.

**natural high** a state of well-being and happiness that is often associated with ordinary physical or mental exertion, in contrast to similar mood states artificially induced by drugs.

**naturalism** *n.* **1.** in philosophy, the doctrine that reality consists solely of natural objects and that therefore the methods of natural science offer the only reliable means to knowledge and understanding of reality. Naturalism is closely related to PHYSICALISM and MATERIALISM and explicitly opposes any form of supernaturalism or MYSTICISM that posits the existence of realities beyond the natural and material world. **2.** in literature and the other arts, a movement that developed in the late 19th century, often seen as arising out of REALISM, the literary movement and style that generally preceded it. Naturalistic writers aimed to depict life without idealistic illusions or literary artifice and often chose challenging or taboo subjects, such as divorce or prostitution. The plays and novels often show a strong leaning toward psychological DETERMINISM, with the behavior of the characters being explained in terms of their heredity or environment. Leading exponents of naturalism included French writers Émile Zola (1840–1902), Alphonse Daudet (1840–1897), and Guy de Maupassant (1850–1893), Norwegian dramatist Henrik Ibsen (1828–1906), and German dramatist Gerhart Hauptmann (1862–1946). See also POSITIVISM. —**naturalistic** *adj.*

**naturalistic environment** a type of laboratory environment that attempts to include many of the features found in natural environments. Examples are underground burrows for fossorial animals, flight cages for birds, and trees or other climbing structures for arboreal animals. Naturalistic environments allow the study of more species-typical behavior in captive animals while maintaining control over many other variables.

**naturalistic fallacy 1.** a putative logical error that occurs when an attempt is made to define values in terms of natural properties. Values such as *goodness* and *truth* are held to be human perceptions and to have no ontological status, or independent existence, as properties of things. **2.** more specifically, the fallacy of basing a moral conclusion (i.e., a conclusion about what ought to be) on ontological premises (i.e., premises about what is or is not the case). An example would be arguing that war is morally acceptable because wars have occurred throughout history. Not all philosophers would agree that all such arguments are necessarily fallacious. [identified by British philosopher George Edward Moore (1873–1958)]

**naturalistic observation** data collection in a field setting, without laboratory controls or manipulation of variables. These procedures are usually carried out by a trained observer, who watches and records the everyday behavior of participants in their natural environments. Examples of naturalistic observation include an ethologist's study of

the behavior of chimpanzees and a developmental psychologist's observation of playing children. Compare ANALOGUE OBSERVATION; SELF-MONITORING OBSERVATION; STRUCTURED OBSERVATION.

**naturalist intelligence** in the MULTIPLE-INTELLIGENCES THEORY, the intelligence involved in detecting patterns and regularities in natural phenomena, which is used, for example, in identifying varieties of plants or birds.

**natural killer cell (NK cell)** a type of LYMPHOCYTE that destroys infected or cancerous cells. Unlike the B and T lymphocytes, natural killer cells do not require the target cells to display on their surface foreign ANTIGENS combined with host histocompatibility proteins.

**natural language** a language that has evolved naturally among humans, as opposed to an ARTIFICIAL LANGUAGE, such as that used in computer programming.

**natural language category** a class of things, people, or the like that is defined as a category distinct from other categories by the semantic structure of a particular NATURAL LANGUAGE, rather than by an extralinguistic (scientific or logical) system of classification. Systems of categorization can vary widely from one language to another (see LINGUISTIC DETERMINISM; LINGUISTIC RELATIVITY). Some researchers believe that each natural language category is defined by a prototype and that membership in the category is determined by an entity's degree of resemblance to this prototype. For example, the category "birds" is defined by a prototype consisting of a set of features (has a beak, has feathers, can fly, etc.) representing the ideal or typical bird; an entity that has all or most of these features will be accepted as belonging to this category.

**natural law 1.** in science and natural philosophy, a fundamental truth about the observed regularities of the natural world, such as the law of gravity. See LAW. See also CAUSAL LAW. **2.** in ethics and political philosophy, an ethical principle reflecting a presumed natural or divine truth that is not derived from human reason or experience and that is universal in its application. A natural law is thus seen to provide a norm that should be reflected in human ethical and legal systems.

**natural law theory** in ethics and political philosophy, the position that there are certain ethical principles that are true and universal, originating in the very nature of reality itself or in the decrees of a divine law giver. In the dominant strain of natural law theory, it is assumed that these principles can be discerned by reason and apply only to beings capable of rational thought. Natural law theory can be traced back to the ancient Greek Stoic philosophers; it strongly influenced Roman law and was subsequently developed by Christian philosophers of the Middle Ages (see SCHOLASTICISM) and later periods. Compare RELATIVISM.

**natural monism** the position that there is a single reality underlying both mental and physical phenomena and that this reality is material. Such a position implies that all sciences, including psychology, are ultimately reducible to physics and chemistry (and that even chemistry obeys the laws of physics). Compare IDEALISTIC MONISM; NEUTRAL MONISM. See also MIND–BODY PROBLEM.

**natural reinforcer** a stimulus or circumstance, such as food or water, that is inherently reinforcing and does not depend on learning to become desirable. Natural reinforcers are more precisely known as **unconditioned** or **primary reinforcers** (see PRIMARY REINFORCEMENT), in contrast to

**conditioned** or **secondary reinforcers**, which are initially neutral stimuli (e.g., tones, lights) that become desirable through training (see **SECONDARY REINFORCEMENT**).

**natural selection** the process by which such forces as competition, disease, and climate tend to eliminate individuals who are less well adapted to a particular environment and favor the survival and reproduction of better adapted individuals, thereby changing the nature of the population over successive generations. This is the fundamental mechanism driving the evolution of living organisms and the emergence of new species, as originally proposed independently by British naturalists Charles DARWIN and Alfred Russel Wallace (1823–1913). See **DARWINISM**; **EVOLUTIONARY THEORY**; **SELECTION**; **SURVIVAL OF THE FITTEST**. Compare **ARTIFICIAL SELECTION**.

**natural work module** a unit of work in which an employee or team of employees produces a whole item or otherwise completes a meaningful sequence of tasks from start to finish. Such an approach has been found to yield greater **TASK IDENTITY** and therefore greater motivation than one in which employees perform their tasks with little or no sense of context.

**natural work team** a group of employees who perform related or complementary tasks working together as a cooperative unit. It has been found that creating such teams has a positive effect on **WORK MOTIVATION**.

**nature** *n.* **1.** the entirety of physical reality. **2.** the phenomena of the natural world, including plants, nonhuman animals, and physical features, as opposed to human beings and their creations. **3.** the fundamental or inherent qualities of something. See **ESSENCE**. **4.** the innate, presumably genetically determined, characteristics and behaviors of an individual. In psychology, the characteristics most often and traditionally associated with nature are temperament, body type, and personality. Compare **NATURE**. —**natural** *adj.*

**nature–nurture** the dispute over the relative contributions of hereditary and constitutional factors (**NATURE**) and environmental factors (**NURTURE**) to the development of an individual. Nativists emphasize the role of heredity, whereas environmentalists emphasize sociocultural and ecological factors, including family attitudes, child-rearing practices, and economic status. Most scientists now accept that there is a close interaction between hereditary and environmental factors in the ontogeny of behavior (see **EPIGENESIS**). Also called **heredity–environment controversy**; **nature–nurture issue**; **nature–nurture problem**.

**naturopathy** *n.* an alternative health care system that aims to prevent disease and promote physical and mental health by using natural and physiologically based therapies (e.g., dietary measures, acupuncture, massage) to address underlying disease processes. See also **COMPLEMENTARY AND ALTERNATIVE MEDICINE**.

**Naturwissenschaftliche Psychologie** one of two approaches to the study of psychological problems and issues identified by German psychologists in the late 19th century. This approach (translated literally as “natural science psychology”) adopted the experimental method and laboratory techniques as appropriate and useful for certain classes of phenomena, such as perceptual phenomena. These techniques were regarded as inappropriate for studying higher mental processes, language, and social phenomena,

for which a different approach (see **GEISTESWISSENSCHAFTLICHE PSYCHOLOGIE**) was required.

**nausea gravidarum** see **MORNING SICKNESS**.

**nauseous** *adj.* in the **ZWAARDEMAKER SMELL SYSTEM**, denoting an odor quality that is smelled in feces and carrion flowers.

**nautilus eye** the eye of the nautilus mollusk, which is of particular value in studies of vision. It consists mainly of a spherical cavity lined with photosensitive cells that respond to light entering through a small hole at the top. This eye is thus virtually a pinhole camera made of living tissue.

**Navane** *n.* a trade name for thiothixene. See **THIOXANTHENE**.

**navigation** *n.* the mechanisms used by an organism to find its way through the environment, such as to a **MIGRATION** site or its home site. A variety of navigational cues have been documented in nonhuman animals, including using the sun or stars as a compass (see **SUN COMPASS**) and responding to magnetic lines, olfactory cues, visual cues (e.g., rivers or coastlines), and wind-shear effects from air masses crossing mountain ranges.

**nay-saying** *n.* answering questions negatively regardless of their content, which can distort the results of surveys, questionnaires, and similar instruments. Compare **YEASAYING**.

**NBAS** abbreviation for Neonatal Behavioral Assessment Scale. See **BRAZELTON NEONATAL BEHAVIORAL ASSESSMENT SCALE**.

**NCFSEA** abbreviation for NATIONAL CHRONIC FATIGUE SYNDROME AND FIBROMYALGIA ASSOCIATION.

**NCLB** abbreviation for NO CHILD LEFT BEHIND ACT.

**NCQA** abbreviation for NATIONAL COMMITTEE FOR QUALITY ASSURANCE.

**NE** abbreviation for NOREPINEPHRINE.

**near-death experience (NDE)** an image, perception, event, interaction, or feeling (or a combination of any of these) reported by some people after a life-threatening episode. Typical features include a sense of separation from the body, often accompanied by the ability to look down on the situation; a peaceful and pleasant state of mind; and an entering into light, sometimes following an interaction with a spiritual being. Frightening NDEs have been reported as well. There is continuing controversy regarding the existence, cause, and nature of NDEs. Spiritual, biomedical, and contextual lines of explanation are still in play, and there is no solid evidence to support the proposition that NDEs prove survival after death. See also **DEATHBED ESCORTS AND VISIONS**. [term coined in 1975 by U.S. philosopher, psychologist, and physician Raymond A. Moody (1944– ) in his book *Life After Life*]

**near miss** in hearing studies, a small deviation from **WEBER'S LAW** in which the **WEBER FRACTION** for intensity discrimination decreases over a wide range of intensities of the standard. The near miss is observed for sounds with a restricted bandwidth and is thought to result from nonlinear growth of excitation in the **COCHLEA**.

**near point** the shortest distance at which an object is in focus for a single eye. Also called **near point of accommodation**. Compare **FAR POINT**.

**near point of convergence** the shortest distance at



which an object is in focus when viewed by both eyes without appearing as a double image.

**nearsightedness** *n.* see MYOPIA.

**necessary condition** see CONDITION.

**Necker cube** a line drawing of a cube in which all angles and sides can be seen, as if it were transparent. It is an AMBIGUOUS FIGURE whose three-dimensionality fluctuates when viewed for a prolonged period of time. [Louis Albert Necker (1730–1804), Swiss crystallographer]

**neck–eye reflex** a reflex involving compensatory movements of the eyes to maintain fixation on a target while the head moves. It is important for maintaining image stability.

**necro-** (**necr-**) *combining form* death or dissolution.

**necromancy** *n.* **1.** a form of DIVINATION in which a person supposedly conjures up the spirits of the dead to gain knowledge of future events. **2.** more generally, black magic or sorcery. —**necromancer** *n.* —**necromantic** *adj.*

**necromania** *n.* a morbid preoccupation with corpses, usually including sexual desire for dead bodies, and a morbid interest in funerals, morgues, autopsies, and cemeteries.

**necrophilia** *n.* **1.** sexual interest in or sexual contact with dead bodies. It is a rare PARAPHILIA seen almost exclusively in men. In some cases, they kill the victim themselves, but most frequently they gain access to corpses via funeral parlors, mortuaries, morgues, or graves. Numerous explanations have been offered for the behavior since it was first described by German psychiatrist Richard von Krafft-Ebing (1840–1902) in his 1886 book *Psychopathia Sexualis*, many of which were psychoanalytically oriented and have now generally been abandoned. More recent explanations have received some empirical support and suggest that necrophilia involves desire for a partner who is incapable of resistance or rejection, desire to exercise power over others as a means of enhancing self-esteem, and desire to counteract feelings of isolation. **2.** as described in 1964 by Erich FROMM, an attraction to death, decay, and sickness. He considered this attraction to be a fundamental yet pathological orientation within certain individuals' characters that reveals itself through increasing tendencies toward greed, narcissism, destruction, cruelty, and murder and a growing attachment to mechanical (i.e., nonliving) artifacts. According to Fromm, necrophilia stems from a person's desire to compensate for a lack of authenticity and self-identity. —**necrophile** *n.* —**necrophilic** *adj.*

**necrophilic fantasies** male (and occasionally female) fantasies about viewing or having heterosexual or same-sex intercourse with a corpse as a means of achieving sexual excitement. Such fantasies are sometimes acted out with the aid of prostitutes who satisfy necrophilic clients by simulating lifelessness.

**necrophobia** *n.* a persistent and irrational fear of corpses. See also THANATOPHOBIA.

**necrosis** *n.* the death of cells (e.g., neurons, muscle cells) from any of a variety of causes, including disease, injury, toxins, and obstruction of blood supply to an affected body part. —**necrotic** *adj.*

**NEDA** abbreviation for NATIONAL EATING DISORDERS ASSOCIATION.

**need** *n.* **1.** a condition of tension in an organism resulting

from deprivation of something required for survival, well-being, or personal fulfillment. **2.** a substance, state, or any other thing (e.g., food, water, security) whose absence generates this condition.

**need arousal** a motivational technique, used primarily by advertisers, in which a consumer is induced to feel that he or she needs a particular product because it represents some sought-after quality such as status, health, beauty, or security. Perception of a need for a product is the first stage of BUYING BEHAVIOR.

**need–fear dilemma** **1.** a simultaneous need for and fear of close relationships with others. **2.** a conflicting set of conditions facing those who need structured control but have an aversion to external control or influence. In its marked form, it is a characteristic condition in schizophrenia, particularly in terms of both greatly needing and greatly fearing other people.

**need for achievement (n-Ach)** a strong desire to accomplish goals and attain a high standard of performance and personal fulfillment. People with high need for achievement often undertake tasks in which there is a high probability of success and avoid tasks that are either too easy (because of lack of challenge) or too difficult (because of fear of failure). The need for achievement was proposed by Henry Alexander MURRAY and investigated extensively by David MCCLELLAND.

**need for affect** an individual difference reflecting variation in the motivation to approach or avoid emotion-inducing situations. According to one study, people with a strong need for affect tend to be extreme in their attitudes about various concerns and to be highly attentive to emotional events, such as the death of a public figure. See also NEED FOR COGNITION. [proposed by Canadian psychologists Gregory R. Maio and Victoria M. Esses]

**need for affection** the degree to which a person wants to be close or distant in a relationship with another. In intimate relationships, need for affection is often expressed concretely as a desire to be touched or held or to be commended verbally.

**need for affiliation (n-Aff)** the desire to have personal relationships with other individuals, which manifests itself in the urge to form friendships and attachments and to join organizations and enjoy social gatherings. People with a high need for affiliation often seek the approval and acceptance of others. Stressful situations typically intensify the need for affiliation; this is especially so when others are undergoing the same stress, perhaps because being part of a group helps reduce the unpleasantness of the situation. See also AFFILIATION; BELONGING; GREGARIOUSNESS. [proposed in 1938 by Henry Alexander MURRAY and extensively researched by David MCCLELLAND]

**need for closure** **1.** the motivation to achieve finality and absoluteness in decisions, judgments, and choices, often prematurely. A person with a high need for closure will often have a low tolerance for ambiguity and uncertainty and may be attracted to dogmatic political or religious views. In 1994, psychologists Donna M. Webster and Arie W. Kruglanski (1939– ) developed the **Need for Closure Scale**, a 42-item self-report inventory, to assess stable individual differences in the desire for closure. **2.** the need to achieve a sense of finality at the close of a painful or difficult episode in one's life. Some estranged couples, for example, feel a need to obtain a formal divorce for emotional as well as practical reasons.

**need for cognition** a personality trait reflecting a person's tendency to enjoy engaging in extensive cognitive activity. This trait primarily reflects a person's motivation to engage in cognitive activity rather than his or her actual ability to do so. Individuals high in need for cognition tend to develop attitudes or take action based on thoughtful evaluation of information. [originally investigated by U.S. psychologists John T. Cacioppo (1951– ) and Richard E. Petty (1951– )]

**need for control** see CONTROL.

**need for intimacy (n-Int)** the dispositional tendency to seek warm, positive relationships with others. It is one of the primary social needs, along with the NEED FOR ACHIEVEMENT and the NEED FOR AFFILIATION. [investigated extensively by U.S. developmental psychologist Dan P. McAdams (1954– )]

**need for power (n-Pow)** the dispositional tendency to seek control over other people. It has been hypothesized that people with a high need for power experience severe stress in the face of actual or anticipated social events that thwart their need to exert control or to achieve recognition for power-oriented behaviors. [investigated extensively by David McCLELLAND]

**need-hierarchy theory** see MASLOW'S MOTIVATIONAL HIERARCHY.

**needle exchange program** a program to reduce the sharing and reuse of needles by people who take illegal drugs intravenously. Drug users are given the opportunity to trade their used needles and syringes for new, unused equipment without fear of arrest; in some cases, users can receive the clean equipment without trading anything in. These programs often provide drug counseling, HIV testing, and other services as well. They have been shown to reduce the transmission of HIV and hepatitis, but they are criticized by people who believe that they tacitly condone drug abuse. Also called **syringe exchange program**.

**need–press theory** in the PERSONOLOGY of Henry Alexander MURRAY, an explanation of behavior in terms of the influence, or PRESS, of both the present environment and past experiences on the expression and activation of a need.

**need reduction** the decrease of a need, often achieved through a CONSUMMATORY RESPONSE. Also called **need gratification**. See DRIVE-REDUCTION THEORY.

**needs assessment** 1. the identification of currently unmet service needs in a community or other group, done prior to implementing a new service program or modifying an existing one. The perceived needs are generally assessed from multiple perspectives, including those of community or group leaders and each individual in the community or group. 2. the identification of areas that should be the focus of a PERSONNEL TRAINING program. Needs assessment involves analyses in three key areas: (a) the KNOWLEDGE, SKILLS, ABILITIES, AND OTHER CHARACTERISTICS of employees; (b) the requirements of the tasks performed by employees; and (c) the requirements of the organization. See also PERSON-NEEDS ANALYSIS.

**need to belong** the motivation, rooted in both biology and social norms, to be part of relationships, to belong to groups, and to be accepted by others. See also LOVE NEED.

**need to evaluate** a personality trait reflecting a person's tendency to engage in extensive evaluative thinking when encountering people, issues, or objects. People who

are high in need to evaluate tend to form attitudes and categorize objects spontaneously along a positive–negative scale. People who are low in need to evaluate tend to think of objects in evaluative terms only when the context encourages such categorization. [originally investigated by U.S. psychologists William Blair Gage Jarvis and Richard E. Petty (1951– )]

**nefazodone** *n.* a MULTIFUNCTIONAL ANTIDEPRESSANT chemically related to TRAZODONE but with some important pharmacological distinctions. It is an antagonist at 5-HT<sub>2</sub> SEROTONIN RECEPTORS and an inhibitor of both serotonin and norepinephrine reuptake. This combination of actions is thought to be related to the lack of SSRI-like side effects associated with its antidepressant properties. Its sedative effects may be useful in the treatment of depression-related anxiety and insomnia; however, due to the risk of serious hepatic injury associated with nefazodone, it is now rarely used.

**negation** *n.* in PIAGETIAN THEORY, a mental process—a form of REVERSIBILITY—in which one realizes that any operation can always be negated or inverted. Also called **inversion**. See IDENTITY, NEGATION, RECIPROCAL, AND CORRELATIVE OPERATIONS. —**negate** *vb.*

**negative** *n.* in linguistics, the form of a sentence used to make a negative assertion about something rather than an AFFIRMATIVE statement or a question (see INTERROGATIVE). In modern English, negatives are nearly always formed using *not* or *no* and an auxiliary verb (usually *be*, *have*, or *do*). The structural relationship between positive and negative forms of a statement (e.g., between *I went* and *I did not go*) is of major interest in GENERATIVE GRAMMAR and PSYCHOLINGUISTICS.

**negative acceleration** a situation in which the rate of increase in a given activity or function slows down as a result of practice or training. For example, successive practice trials may produce smaller and smaller gains in learning or performance. See LEARNING CURVE. Compare POSITIVE ACCELERATION.

**negative adaptation** a gradual loss of sensitivity or weakening of response due to prolonged stimulation.

**negative affect** the internal feeling state (AFFECT) that occurs when one has failed to achieve a goal or to avoid a threat or when one is not satisfied with the current state of affairs. The tendency to experience such states is known as **negative affectivity**.

**Negative Affect Scale** see POSITIVE AND NEGATIVE AFFECT SCHEDULE.

**negative affect syndrome** see GENERAL NEUROTIC SYNDROME.

**negative afterimage** see AFTERIMAGE.

**negative afterpotential** the small additional negative membrane potential (HYPERPOLARIZATION) shown by nerve and muscle cells during recovery from an ACTION POTENTIAL. The nerve or muscle is less excitable during the negative afterpotential.

**negative attitude** in psychotherapy and counseling, the client's feeling of rejection or disapproval of the therapist or counselor, of the therapeutic or counseling process, of another person, or of himself or herself. Compare POSITIVE ATTITUDE.

**negative conditioned stimulus** in CLASSICAL CONDITIONING, a stimulus that, when presented in the context of

CONDITIONED STIMULUS–UNCONDITIONED STIMULUS pairings, is not followed by an unconditioned stimulus.

**negative contingency** see CONTINGENCY.

**negative contrast** see BEHAVIORAL CONTRAST.

**negative correlation** a relationship between two variables in which the value of one variable increases as the value of the other decreases. For example, in a study about babies crying and being held, the discovery that those who are held more tend to cry less is a negative correlation. Also called **inverse correlation**. Compare POSITIVE CORRELATION.

**negative discriminative stimulus** (symbol:  $S^A$  or  $S^-$ ) in OPERANT CONDITIONING, a stimulus signifying that a given response will not be reinforced, implying that there is at least one other stimulus circumstance in which the response will be reinforced. Compare DISCRIMINATIVE STIMULUS.

**negative emotion** an unpleasant, often disruptive, emotional reaction designed to express a NEGATIVE AFFECT. Negative emotion is not conducive to progress toward obtaining one's goals. Examples are anger, envy, sadness, and fear. Compare POSITIVE EMOTION.

**negative eugenics** see EUGENICS.

**negative exercise addiction** an inordinate attraction to habitual physical exercise that has a detrimental effect on physical, psychological, or social well-being. Also called **exercise obsession**. Compare POSITIVE EXERCISE ADDICTION.

**negative feedback** **1.** an arrangement whereby some of the output of a system, whether mechanical or biological, is fed back to reduce the effect of input signals. Such systems, which measure the deviation from a desired state and apply a correction, are important in achieving HOMEOSTASIS, whereas systems employing POSITIVE FEEDBACK tend to amplify small deviations and become highly unstable. See FEEDBACK SYSTEM. **2.** nonconstructive criticism, disapproval, and other negative information received by a person in response to his or her performance.

**negative hallucination** a false perceptual experience characterized by failure to see something while looking directly at it, as in failing to perceive a certain person in a group in response to hypnotic suggestion. Compare POSITIVE HALLUCINATION.

**negative imagery** mental images that incorporate sensations of performance errors, unwanted outcomes, DEMOTIVATION, or self-degradation.

**negative incentive** an object or condition that constitutes an AVERSIVE STIMULUS and therefore facilitates avoidance behavior. Compare POSITIVE INCENTIVE.

**negative induction** a reduction in the response to one stimulus, in circumstances in which conditions remain fixed, as a result of a reduction of response brought about in another experiment in which stimuli were alternated. See also BEHAVIORAL CONTRAST.

**negative priming** the ability of a preceding stimulus to inhibit the response to a subsequent stimulus. This is measured by the detectability of the second stimulus or the time taken to make a response to the second stimulus. The most striking examples occur when the participant is instructed to ignore a feature of the first stimulus (e.g., its

color) and then to attend to that same feature in the second stimulus. PRIMING effects are usually facilitative.

**negative punishment** punishment that results because some stimulus or circumstance is removed as a consequence of a response. For example, if a response results in a subtraction of money from an accumulating account, and the response becomes less likely as a result of this experience, then negative punishment has occurred. Compare POSITIVE PUNISHMENT.

**negative recency** in recalling a list of items, the tendency to recall fewer of the final items of the list than the middle and early items. Negative recency contrasts with the enhanced recall of final items seen in the RECENCY EFFECT. Also called **negative recency effect**

**negative reference group** a group with which a person does not want to be identified and whose norms and standards he or she consciously rejects.

**negative reinforcement** the removal, prevention, or postponement of an AVERSIVE STIMULUS as a consequence of a response, which, in turn, increases the probability of that response. Compare POSITIVE REINFORCEMENT.

**negative relationship** an association in which one variable decreases as the other variable increases, or vice versa. Also called **inverse relationship**. See also INDIRECT RELATIONSHIP. Compare DIRECT RELATIONSHIP.

**negative response** a response that involves avoidance of or withdrawal from a stimulus.

**negative schizophrenia** a form of schizophrenia characterized by a predominance of NEGATIVE SYMPTOMS, suggesting deficiency or absence of behavior normally present in a person's repertoire, as shown in apathy, blunted affect, emotional withdrawal, poor rapport, and lack of spontaneity. Compare POSITIVE SCHIZOPHRENIA. [defined in 1982 by U.S. psychiatrists Nancy C. Andreasen and Scott A. Olsen]

**negative self-talk** see SELF-TALK.

**negative skew** see SKEWNESS.

**negative-state-relief model** the hypothesis that HELPING behavior is used by some people in stressful situations and periods of boredom and inactivity to avoid or escape negative moods.

**negative stereotype** a STEREOTYPE that purports to describe the undesirable, objectionable, or unacceptable qualities and characteristics of the members of a particular group or social category. Compare POSITIVE STEREOTYPE.

**negative suggestion** a statement intended to deter or suppress a feeling, thought, or action on the part of another person.

**negative symptom** a deficit in the ability to perform the normal functions of living—for example, logical thinking, self-care, social interaction, and planning, initiating, and carrying out constructive actions—as shown in apathy, blunted affect, emotional withdrawal, poor rapport, and lack of spontaneity. In schizophrenia, a predominance of negative symptoms is often associated with a poor prognosis. Compare POSITIVE SYMPTOM. See NEGATIVE SCHIZOPHRENIA.

**negative transfer** **1.** a process in which previous learning obstructs or interferes with present learning. For instance, tennis players who learn racquetball must often unlearn their tendency to take huge, muscular swings with

the shoulder and upper arm. See also TRANSFER OF TRAINING. Compare POSITIVE TRANSFER. **2.** see LANGUAGE TRANSFER.

**negative transference** in psychoanalysis, a patient's transfer onto the analyst or therapist of feelings of anger or hostility that the patient originally felt toward parents or other significant individuals during childhood. Compare POSITIVE TRANSFERENCE.

**negative triad** see COGNITIVE TRIAD.

**negative tropism** the orientation of an organism away from a particular source of stimulation. See TROPISM.

**negativism** *n.* **1.** an attitude characterized by persistent resistance to the suggestions of others (**passive negativism**) or the tendency to act in ways that are contrary to the expectations, requests, or commands of others (**active negativism**), typically without any identifiable reason for opposition. In young children and adolescents, such reactions may be considered a healthy expression of self-assertion. Negativism may also be associated with a number of disorders (extreme negativism is a feature of CATATONIC SCHIZOPHRENIA), and it can be an expression of opposition, withdrawal, or anger or a method of gaining attention. Also called **negativistic response**. See also OPPOSITIONAL DEFIANT DISORDER; PASSIVE-AGGRESSIVE PERSONALITY DISORDER. **2.** any philosophy or doctrine based on negation, such as nihilism or skepticism. —**negativistic** *adj.*

**negativistic personality disorder** see PASSIVE-AGGRESSIVE PERSONALITY DISORDER.

**negativistic response** see NEGATIVISM.

**negativity bias** see TRAIT NEGATIVITY BIAS.

**neglect** *n.* **1.** failure to provide for the basic needs of a person in one's care. The neglect may be emotional (e.g., rejection or apathy), material (e.g., withholding food or clothing), or service-oriented (e.g., depriving of education or medical attention). See CHILD NEGLECT; ELDER NEGLECT. See also MALTREATMENT. **2.** a neurological syndrome characterized by lack of awareness of a specific area of the visual field (VISUAL NEGLECT) or side of the body (UNILATERAL NEGLECT). This is most often associated with an injury to the right cerebral hemisphere with corresponding left-sided neglect. Neglect has also been found in auditory, tactile, and proprioceptive tasks. See also MOTOR NEGLECT; SENSORY NEGLECT.

**neglect dyslexia** a type of VISUAL WORD-FORM DYSLEXIA associated with VISUAL NEGLECT, a condition in which a person is unaware of half of the visual field as a result of neurological damage. Either the initial parts of words are misread (left neglect) or the terminal parts of words are misread (right neglect), and the errors are not simple deletions but typically guesses of real though incorrect words with approximately the right number of letters.

**neglected child** **1.** see CHILD NEGLECT. **2.** see SOCIOMETRIC STATUS.

**negligence** *n.* failure to fulfill a duty or to provide some response, action, or level of care that is appropriate or reasonable to expect. In ergonomics, for example, negligence involves the failure to take reasonable care to protect human safety or equipment in the design, development, or evaluation of a system. A variety of different types of negligence exist in law. See also MALPRACTICE. —**negligent** *adj.*

**negligent hiring** a basis for a civil lawsuit against an employer in which a person claims that he or she suffered

injury, loss, or harm as a result of actions by an incompetent employee who would not have been hired had the organization followed responsible hiring practices.

**negotiation** *n.* a reciprocal communication process in which two or more parties to a dispute examine specific issues, explain their positions, and exchange offers and counteroffers in an attempt to identify a solution or outcome that is acceptable to all parties. Compare BARGAINING. —**negotiate** *vb.*

**neighborhood control** a group of individuals selected from the same region or area as that of a targeted study group in order to serve as a comparison group. The assumption is that such a group will share similar experiences, risk exposure, and other relevant characteristics with the study group, given their geographical proximity. Used in epidemiological or clinical research, neighborhood controls generally are chosen according to some rule-based procedure and matched to members of the target group on certain attributes, such as age or sex. For example, a researcher investigating cancer might go to every second house on the same city block as that of each person in the study group to identify similar individuals who do not have the disease to become part of a neighborhood control. Also called **community control**.

**Neil v. Biggers** a case resulting in an influential 1972 U.S. Supreme Court decision in which the court identified factors that should be considered when assessing the validity of eyewitness identification. These factors are (a) certainty as to the identification, (b) delay between the witnessed event and identification, (c) ability to clearly view the witnessed event, (d) level of attention paid to the witnessed event, and (e) the accuracy of the witness's initial description of the individual involved in the event.

**Nelson–Denny Reading Test** a multiple-choice test of vocabulary, reading rate, and reading comprehension for high school and college students as well as adults. The vocabulary section consists of 80 one-sentence statements requiring participants to choose the proper meaning of a specific word used in that sentence from among four options. The reading rate and reading comprehension sections are combined; the former requires participants to read as much of a given narrative passage as possible within 1 minute, whereas the latter requires participants to answer questions about that same passage and six others. Originally developed in 1929, the Nelson–Denny Reading Test is in its fifth edition (published in 1993). [M. J. Nelson (1894–1970) and E. C. Denny (1887–1984), U.S. educators]

**Nembutal** *n.* a trade name for PENTOBARBITAL.

**neobehaviorism** *n.* an approach to psychology influenced by LOGICAL POSITIVISM that emphasized the development of comprehensive theories and frameworks of behavior, such as those of Clark L. HULL and Edward C. TOLMAN, through empirical observation of behavior and the use of consciousness and mental events as explanatory devices. It thus contrasted with classical BEHAVIORISM, which was concerned with freeing psychology of mentalistic concepts and explanations. According to Sigmund KOCH, neobehaviorism replaced classical behaviorism as the dominant 20th-century program for experimental psychology around 1930; its influence began to wane in the 1950s. See also RADICAL BEHAVIORISM. —**neobehaviorist** *adj., n.*

**neocerebellum** *n.* the dorsal and most recently evolved

part of the CEREBELLUM, which appears only in mammals. It contains fibers that communicate with nuclei of the PONS. Compare ARCHICEREBELLUM; PALEOCEREBELLUM.

**neocortex** *n.* regions of the CEREBRAL CORTEX that are the most recently evolved and contain six main layers of cells. Neocortex, which comprises the majority of human cerebral cortex, includes the primary sensory and motor cortex and association cortex. Also called **neopallium**. Compare ALLOCORTEX. —**neocortical** *adj.*

**neo-Darwinism** *n.* see DARWINISM.

**neodissociation theory** a theory that explains the dissociative phenomena of hypnosis as a result of DIVIDED CONSCIOUSNESS. For example, HYPNOTIC ANALGESIA can produce subjective relief from pain while physiological measures indicate that some pain response is still being registered. See also HIDDEN OBSERVER. [proposed by Ernest R. HILGARD]

**neo-Freudian** **1.** *adj.* denoting an approach that derives from the CLASSICAL PSYCHOANALYSIS of Sigmund FREUD but with modifications and revisions that typically emphasize social and interpersonal elements over biological instincts. The term is not usually applied to the approaches of Freud's contemporaries, such as Alfred ADLER and Carl JUNG, who broke away from his school quite early. Erik ERIKSON, Erich FROMM, Karen D. HORNEY, Harry Stack SULLIVAN, and ego psychologists such as Austrian-born U.S. psychoanalyst Heinz Hartman (1894–1970) are considered to be among the most influential neo-Freudian theorists and practitioners. **2.** *n.* an analyst or theoretician who adopts such an approach.

**neolalia** *n.* the abnormal tendency to use NEOLOGISMS when speaking. Also called **neolallism**.

**neolocal** *adj.* denoting a living arrangement in which a newly married couple begin a new household separate from their kin, or a culture in which this is the norm. Compare MATRILOCAL; PATRILOCAL.

**neologism** *n.* a newly coined word or expression. In a neurological or psychopathological context, neologisms, whose origins and meanings are usually nonsensical and unrecognizable (e.g., *klipno* for watch), are typically associated with aphasia or schizophrenia. See also PORTMANTEAU NEOLOGISM. —**neologistic** *adj.*

**neologistic jargon** unintelligible speech containing a mixture of inappropriately combined words and bizarre expressions coined by the speaker. Also called **neologistic paraphasia**. See JARGON APHASIA; WORD SALAD.

**neo-Malthusian** *adj.* denoting the contemporary doctrine or movement that supports population control, especially by the use of family planning and contraception, to ensure adequate resources and protect the environment. See MALTHUSIAN THEORY.

**neomammalian brain** see TRIUNE BRAIN.

**neonatal** *adj.* referring to a newborn child or to the period shortly after childbirth.

**Neonatal Behavioral Assessment Scale (NBAS)** see BRAZELTON NEONATAL BEHAVIORAL ASSESSMENT SCALE.

**neonatal drug dependency syndrome** a syndrome in which a baby is born with drug dependence due to the mother's drug abuse (most often opioid abuse) during the latter part of pregnancy. Such babies are often of low birth weight. Other severe problems that accompany drug abuse

by pregnant women include increased risk of intrauterine death, premature delivery, and increased neonatal mortality.

**neonatal imitation** the ability of newborn babies to reproduce some behavior, such as a facial expression, that they see in others. See also ACTIVE INTERMODAL MAPPING.

**neonatal period** in human development, the period from birth to approximately 1 month of age for infants born after a full-term pregnancy (for infants born prematurely, the period is longer). Among nonhuman species, the neonatal period varies depending on the species. For example, in dogs the period extends from birth to approximately 12 to 14 days of age; for some rats it lasts approximately 21 days. See also DEVELOPMENTAL LEVELS.

**neonate** *n.* a newborn human or nonhuman animal. Human infants born after the normal gestational period of 36 weeks are known as full-term neonates; infants born before the end of this period are known as preterm neonates (or, colloquially, as preemies).

**neonaticide** *n.* the killing of an infant who is less than 24 hours old. See also FILICIDE; INFANTICIDE.

**neonativism** *n.* the belief that much cognitive knowledge, such as OBJECT PERMANENCE and certain aspects of language, is innate, requiring little in the way of specific experiences to be expressed. Neonativists hold that cognitive development is influenced by biological constraints and that individuals are predisposed to process certain types of information. Also called **structural constraint theory**. —**neonativist** *adj.*, *n.*

**neopallium** *n.* see NEOCORTEX.

**NEO Personality Inventory (NEO-PI)** a personality questionnaire designed to assess the factors of the FIVE-FACTOR PERSONALITY MODEL. First published in 1985 and revised in 1992 (**NEO-PI-R**) and 2010 (**NEO-PI-3**), the inventory takes its name from three factors of the model: neuroticism, extraversion, and openness to experience. It is available in two versions (Form S for self-reports and Form R for observer ratings), each comprising 240 statements to which participants respond using a 5-point LIKERT SCALE format, ranging from *strongly disagree* to *strongly agree*. [developed by U.S. psychologists Paul T. Costa Jr. (1942– ) and Robert R. McCrae (1949– )]

**neophasia** *n.* a complex language system created by and idiosyncratic to a person, with its own vocabulary and rules of grammar.

**neophenomenology** *n.* an approach to psychology that emphasizes the role of the individual's phenomenological (immediate and conscious) experience in the determination of action. See PERSONALISTIC PSYCHOLOGY; PHENOMENOLOGY. [attributed to U.S. psychologists Donald Snygg (1904–1967) and Arthur W. Combs (1912–1999)]

**neophilia** *n.* a strong desire for anything new or different, such as new foods. The term is increasingly used as a synonym for NOVELTY SEEKING.

**neophobia** *n.* **1.** a persistent and irrational fear of change or of anything new, unfamiliar, or strange. **2.** the avoidance of new stimuli, especially foods. —**neophobic** *adj.*

**neoplasm** *n.* a new, abnormal growth; that is, a benign or malignant tumor, although the term is generally used to specify a malignancy (see CANCER). A neoplasm usually grows rapidly by cellular proliferation but generally lacks

structural organization. A malignant neoplasm is usually invasive, destroying or damaging neighboring normal tissues, and can spread to distant sites by the process of metastasis; benign neoplasms are usually encapsulated and do not spread but may damage neighboring tissues by compression. —**neoplastic** *adj.*

**Neoplatonism** *n.* a school of philosophy based on a particular understanding of the teachings of Greek philosopher PLATO, especially as interpreted by Alexandrian philosopher Plotinus (204–270 CE). Neoplatonism retains Plato's view that there is another perfect and eternal world that accounts for the things of the physical world (see PLATONIC IDEALISM). In the strain developed by Plotinus, however, there is greater emphasis on an ultimate unity of the universe and a new sense that MYSTICISM, as opposed to reason, is the way through which the other world is experienced. Neoplatonism was influential in the reconciliation of Christianity with classical philosophy in the Middle Ages (see SCHOLASTICISM) and the Renaissance. —**Neoplatonist** *n., adj.*

**neostigmine** *n.* an anticholinesterase (see CHOLINERGIC DRUG) used in the diagnosis and treatment of myasthenia gravis and glaucoma. U.S. trade name: **Prostigmin**.

**neostriatum** *n.* a portion of the BASAL GANGLIA that has evolved relatively recently. It includes the PUTAMEN and the CAUDATE NUCLEUS. It is contrasted with the phylogenetically older **paleostriatum** (GLOBUS PALLIDUS). —**neostriatal** *adj.*

**neoteny** *n.* **1.** in zoology, sexual maturation in the larval state. **2.** in evolution, the retention into adulthood of juvenile characteristics of an ancestral species, such as the large ratio of brain size to body size in humans. —**neote-nous** *adj.*

**nephrogenic diabetes insipidus** a form of diabetes in which the kidneys are unable to produce a normal concentration of urine because the kidney tubules do not respond to VASOPRESSIN produced by the pituitary gland. Individuals with this disorder drink enormous amounts of water and excrete large volumes of dilute urine. The disorder can be critical in infants, who cannot communicate their thirst and therefore suffer water depletion, which may lead to brain damage and intellectual disability before the cause can be diagnosed.

**nepiophilia** *n.* sexual interest in and arousal by infants; a type of PEDOPHILIA. The person with nepiophilia generally does not find adults, or sometimes even older children, sexually arousing. Nepiophilia is rarely seen in females.

**Nernst equation** an equation used to calculate the EQUILIBRIUM POTENTIAL at a membrane. [Walther Hermann Nernst (1864–1941), German chemist]

**nerve** *n.* a bundle of AXONS outside the central nervous system (CNS), enclosed in a sheath of connective tissue to form a cordlike structure. Nerves connect the CNS with the tissues and organs of the body. They may be motor, sensory, or mixed (containing axons of both motor and sensory neurons). See CRANIAL NERVE; SPINAL NERVE. Compare TRACT.

**nerve block** the blocking of nerve impulses by drugs (e.g., anesthetics) or by mechanical means.

**nerve cell** see NEURON.

**nerve deafness** see SENSORINEURAL DEAFNESS.

**nerve ending** the terminus of an AXON. There are various types of nerve endings, including ANNULOSPIRAL END-

INGS and FLOWER-SPRAY ENDINGS in muscle spindles and BASKET ENDINGS, KRAUSE END BULBS, MEISSNER'S CORPUSCLES, and FREE NERVE ENDINGS.

**nerve fiber** **1.** the AXON of a neuron, extending from the cell body. **2.** loosely, the neuron itself.

**nerve growth factor (NGF)** an endogenous polypeptide that stimulates the growth and development of neurons in SPINAL GANGLIA and in the ganglia of the SYMPATHETIC NERVOUS SYSTEM.

**nerve impulse** a wave of DEPOLARIZATION, in the form of an ACTION POTENTIAL, that is propagated along a neuron or chain of neurons as the means of transmitting signals in the nervous system. Also called **nervous impulse**; **neural impulse**. See also SYNAPSE.

**nerve-muscle preparation** a muscle and its motor nerve, both at least partially dissected from the body, used for physiological experiments.

**nerve of Wrisberg** see GREATER SUPERFICIAL PETROSAL NERVE. [Heinrich A. Wrisberg (1739–1808), German anatomist]

**nerve pathway** see NEURAL PATHWAY.

**nerve root** the part of a nerve that connects directly to the brain or spinal cord. Spinal nerves arise from the spinal cord via a DORSAL ROOT and a VENTRAL ROOT, which then combine to form the spinal nerve. Certain CRANIAL NERVES also are formed by the combination of two nerve roots.

**nerve tissue** the cell bodies and fibrous processes of neurons that make up the functional components of the nervous system. Supporting tissues, such as GLIA, are sometimes also included. Also called **nervous tissue**.

**nerve tract** see TRACT.

**nerve trunk** the main body of a nerve, in which all the axons run together. The trunk of a typical spinal nerve is formed by the combination of the two SPINAL ROOTS and distributes to peripheral organs and tissues via its branches.

**nervios** *n.* a wide range of symptoms affecting Latino groups in the United States and Latin America (the word literally means “nerves”) and attributed to stressful and difficult life experiences and circumstances. Symptoms include headache, dizziness, concentration difficulties, sleep disturbances, stomach upsets, and tingling sensations; mental disorder may or may not be present. See also ATAQUE DE NERVIOS.

**nervous** *adj.* **1.** in a transient emotional state of anxious apprehension. **2.** of an excitable, highly strung, or easily agitated disposition. **3.** referring to the structures or functions of the nervous system. See also NEURAL.

**nervous breakdown** a lay term for an emotional illness or other mental disorder that has a sudden onset, produces acute distress, and significantly interferes with one's functioning. Also called **nervous prostration**.

**nervous exhaustion** a lay term for a state of severe fatigue due to emotional strain. See also NEURASTHENIA.

**nervous habit** stereotyped behavior, such as nail biting or tics, presumed to be caused by anxiety and performed to reduce tension.

**nervous impulse** see NERVE IMPULSE.

**nervousness** *n.* a state of restless tension and emotion-

ality characterized by trembling, feelings of apprehensiveness, or other signs of anxiety or fear.

**nervous prostration** see NERVOUS BREAKDOWN.

**nervous system** the system of NEURONS, NERVES, TRACTS, and associated tissues that, together with the endocrine system, coordinates activities of the organism in response to signals received from the internal and external environments. The nervous system of higher vertebrates is often considered in terms of its divisions, principally the CENTRAL NERVOUS SYSTEM, the PERIPHERAL NERVOUS SYSTEM, and the AUTONOMIC NERVOUS SYSTEM. See also CONCEPTUAL NERVOUS SYSTEM.

**nervous tissue** see NERVE TISSUE.

**nervus terminalis** a collection of unmyelinated nerve fibers that emanates from ganglia and terminates in the nasal mucosa. It has been demonstrated to be involved in the release of LUTEINIZING HORMONE and is therefore thought to play a role in reproduction.

**NES** **1.** abbreviation for NEUROLOGICAL EVALUATION SCALE. **2.** abbreviation for NONEPILEPTIC SEIZURE.

**nest building** a form of parental behavior, observed mainly in fish, birds, and nonhuman mammals, that involves finding and preparing a site for laying eggs or giving birth to young. The forms of nest building vary widely, but generally all are associated with hormonal activity induced in the female by changes in day length, temperature, courtship with a male, or the presence of offspring. In species with biparental care, such as many monogamous birds and rodents, nest building may be done by both sexes. In some fish, males are the exclusive nest builders. Nest building in nonpregnant female mammals can be induced by exposure to young animals (see CONCAVEATION).

**nested design** see HIERARCHICALLY NESTED DESIGN.

**nested model** see HIERARCHICAL MODEL.

**nesting** *n.* in an experimental design, the appearance of the levels of one factor (the **nested factor**) only within a single level of another factor. For example, classrooms are nested within a school because each specific classroom is found only within a single school; similarly, schools are nested within school districts. See HIERARCHICALLY NESTED DESIGN.

**network** *n.* any system of interconnected units or elements. The term is applied broadly in psychology, referring, for example, to participants in social relationships or interactions (as in SOCIAL NETWORK, COMMUNICATION NETWORKS), to neural processes (as in NEURAL NETWORK), or to entities of linguistic meaning (see SEMANTIC NETWORK).

**network analysis** the study of the relationships among sampling units (e.g., individuals) within an interconnected group of such units (e.g., a friendship network) and the implications of these networks for the system in which they occur. In organizational contexts, for example, network analysis involves identifying patterns of communication, influence, liking, and other interpersonal behaviors and attitudes among employees and quantifying them in statistical and graphical models. Properties of systems are assumed to be emergent, that is, not immediately predictable from a knowledge of networks among individuals. See also SOCIOMETRY.

**network-analysis evaluation** a method of studying networks of services from the vantage point of either agen-

cies within a system or the flow of service recipients through the system.

**network effect** the impact that the system or network of interpersonal interactions and relationships in an individual's environment has on the development of psychopathology in that individual. [defined by German-born psychoanalyst Sigmund Heinrich Foulkes (1898–1976)]

**networking** *n.* **1.** establishing contacts and relationships inside and outside one's place of work with the intent of advancing one's career. **2.** forming networks of computing resources by connecting computers via communication systems. See COMPUTER NETWORK.

**network-memory model** the concept that LONG-TERM MEMORY is made up of a series of knowledge representations that are connected or linked together. The strength of the connections is determined by experience factors, such as repetition and associations. See also CONNECTIONIST MODEL; SPREADING ACTIVATION.

**network sampling** a sampling technique in which members of a study group recruit their peers to participate in the research. It is similar in process, benefits, and drawbacks to SNOWBALL SAMPLING but distinct in that new participants are acquired directly by existing ones according to certain rules (e.g., no more than four recruits per person) and that various incentives are provided for participation and recruitment.

**network therapy** individual psychotherapy or FAMILY THERAPY in which an attempt is made to involve not only immediate family members but also other relatives, friends, and neighbors as sources of emotional support and possible vocational opportunity. See also SOCIAL-NETWORK THERAPY.

**Neudexta** *n.* a trade name for DEXTROMETHORPHAN in combination with quinidine.

**neur-** *combining form* see NEURO-.

**neural** *adj.* pertaining to the nervous system, its parts, and its functions.

**neural arc** the pathway followed by nerve impulses from a RECEPTOR to an EFFECTOR. In a REFLEX ARC, a sensory neuron (or bundle of neurons) is connected either directly or via one or more INTERNEURONS to one or more MOTOR NEURONS; in more complex behaviors, the pathways are longer and the connections are more complicated.

**neural axis** **1.** the CENTRAL NERVOUS SYSTEM as a whole. **2.** the structures of the central nervous system that lie along the midline, including the spinal cord and brainstem but excluding the cerebral hemispheres and the cerebellar hemispheres. Also called **neuraxis**.

**neural chain** a simple type of NEURAL CIRCUIT in which neurons are attached end to end.

**neural circuit** an arrangement of NEURONS and their interconnections. Neural circuits, such as NEGATIVE FEEDBACK circuits, POSITIVE FEEDBACK circuits, and OSCILLATOR CIRCUITS, often perform particular limited functions. In a **local circuit**, the neurons are all contained within a level of brain organization of a particular region.

**neural coding** the rules and mechanisms by which neurons communicate: specifically, the unique pattern, temporal relationship, amplitude, and other characteristics of pulses (i.e., ACTION POTENTIALS) or other signals that carry out a particular sensory or other function in the nervous

system. Researchers can utilize a variety of theoretical models to analyze and understand the neural coding that underlies, for example, how birds sing or how humans perceive color. See also NEURAL REPRESENTATION.

**neural conduction** the passage of a NERVE IMPULSE along a nerve fiber. See CONDUCTION. Compare NEUROTRANSMISSION.

**neural constructivism** the theory that brain development, and thus cognitive development, proceeds as a dynamic interaction between the development of the NEURAL SUBSTRATE and the environment.

**neural correlate** an association between a physical occurrence in the nervous system and a mental state or event. In the cerebellum, for example, the neural correlate of fear memory is provided by a LONG-TERM POTENTIATION of the excitatory synapses between the PARALLEL FIBERS and the PURKINJE CELLS. The existence of neural correlates suggests potential biological bases for a variety of complex cognitive, emotional, and behavioral phenomena, including consciousness (awareness), perception, learning and memory, judgments and decisions, attitudes, and motivation.

**neural crest** an embryonic structure consisting of a ridgelike area of ectodermal tissue on either side of the NEURAL TUBE that develops into the spinal ganglia and various structures within the sympathetic and peripheral nervous systems.

**neural Darwinism** a neurobiological theory that uses Darwinian NATURAL SELECTION to account for brain development and functioning in terms of selectionist amplification, pruning, and strengthening of neurons, synapses, and dynamic signaling. During brain development, billions of neurons emerge and send axonal cones to target other neurons and make connective synapses. Both neurons and their synapses are then pruned so that only the most functional cells and connections survive. When neuronal pathways are established, a similar amplification and pruning process occurs among active connections. Critics of the theory have argued that natural selection cannot apply without reproduction. To this, its supporters argue that the dynamic reentry of signaling (functional mapping) among neural connections established during earlier selection is equivalent to reproduction. Also called **neuronal group selection**; **selectionist brain theory**. [proposed by U.S. neuroscientist Gerald M. Edelman (1929–2014) in 1987]

**neural facilitation** see FACILITATION.

**neural fibril** see NEUROFIBRIL.

**neural folds** in the developing embryo, ridges of ectoderm on the NEURAL PLATE that form around the **neural groove** and fuse to form the NEURAL TUBE.

**neuralgia** *n.* pain, typically recurrent, sharp, and spasmodic, that occurs along the course of a nerve or a group of nerves. See TRIGEMINAL NEURALGIA. —**neuralgic** *adj.*

**neural groove** see NEURAL FOLDS.

**neural impulse** see NERVE IMPULSE.

**neural induction** the influence of a neuron or group of neurons on the development of other cells, particularly other neurons.

**neural integration** a process during which the electrochemical weighing of competing and canceling MEMBRANE

POTENTIALS is resolved, leading to a neuron firing (excitatory) or not firing (inhibitory or subthreshold).

**neural irritability** a property of NERVE TISSUE that makes it sensitive to stimulation and capable of responding by transmitting ACTION POTENTIALS. It is dependent on rapid, transient movement of ions through ion channels in the plasma membrane, causing a reversible DEPOLARIZATION of the membrane.

**neural network 1.** a technique for modeling the neural changes in the brain that underlie cognition and perception in which a large number of simple hypothetical neural units are connected to one another. **2.** an ARTIFICIAL INTELLIGENCE system used for learning and classifying data and applied in research on pattern recognition, speech recognition, machine translation of languages, and financial prediction, among other areas. Neural networks are usually abstract structures modeled on a computer and consist of a number of interconnected processing elements (**nodes**), each with a finite number of inputs and outputs. The elements in a network can have a “weight” determining how they process data, which can be adjusted according to experience. In this way, the network can be trained to recognize patterns in input data by optimizing the output of the network. The analogy is with the supposed action of neurons in the brain. In addition, neural networks are often structured into layers, including an input layer (in which properties of input parameters are encoded), possibly multiple hidden layers (in which generalizations of the input parameters are reflected), and an output layer (in which the response of the neural network system is reported to the environment). The connectivity of these layers often differs, usually reflecting the algorithms the neural network uses for learning. There are multiple families of algorithms used for learning patterns in data, including Hebbian learning and back-propagation learning. See also PERCEPTRON.

**neural parenchyma** the essential functioning tissue of the nervous system, as distinguished from the structural or supporting elements.

**neural pathway** any route followed by a nerve impulse through central or peripheral nerve fibers of the nervous system. A neural pathway may consist of a simple REFLEX ARC or a complex but specific route, such as that followed by impulses transmitting a specific wavelength of sound from the COCHLEA to the auditory cortex. Also called **nerve pathway**. See also AFFERENT PATHWAY; EFFERENT PATHWAY; MOTOR PATHWAY.

**neural plasticity** the ability of the nervous system to change in response to experience or environmental stimulation. For example, following an injury remaining neurons may adopt certain functions previously performed by those that were damaged, or a change in reactivity of the nervous system and its components may result from constant, successive activations. Also called **neuroplasticity**.

**neural plate** a specific region of the outer primary cell layer (ectoderm) on the dorsal surface of an embryo that develops ultimately into the central nervous system. As development proceeds, the neural plate folds into the NEURAL TUBE. See also NEURULATION.

**neural progenitor cell (NPC)** a stemlike cell capable of developing into a neuron or other nervous system cell. Although NPCs are also sometimes called **neural stem cells**, they differ from STEM CELLS in two significant ways: They can only differentiate into nervous system cells, and they



are capable of only a limited number of replications. As people age, their NPC biomarker levels decrease, suggesting that they are producing fewer neurons.

**neural quantum theory** a theory to explain linear psychophysical functions, which are sometimes obtained instead of the ogival (S-shaped) form, whereby changes in sensation are assumed to occur in discrete steps and not along a continuum, based on the all-or-none law of neural activity. In this context, *quantum* refers to a functionally distinct unit in the neural mechanisms that mediate sensory experience—that is, a perceptual rather than a physical unit. Also called **quantal hypothesis**; **quantal theory**.

**neural receptor** see NEURORECEPTOR.

**neural regeneration** regrowth of injured neurons, which occurs at a very slow rate. Complete replacement of injured neurons is rare in mammals but common in some fish and amphibians. Even in mammals, severed axons in the peripheral nervous system regrow readily. Sprouts of the growing axons are guided by CELL ADHESION MOLECULES. Also called **neuronal regeneration**; **regeneration of nerves**.

**neural reinforcement** the strengthening of a neuron's response by the simultaneous or contingent activity of a second neuronal response.

**neural representation** the brain's model of the outside world, based on the overall NEURAL CODING that occurs in the brain and on which parts of the brain are activated during a particular mental experience. This representation includes content (what is being seen, felt, heard, remembered, thought, etc.) and function (the role of the neural signals in the organism's response to a stimulus). Research is ongoing to plot the neural representations of odor memories, semantic processing in bilingual people, and various emotions, for example.

**neural reserve** see BRAIN RESERVE.

**neural retina** see RETINA.

**neural satiation** a period of lessened reactivity or the inhibition of a neuronal response following strong stimulation of an area or adjacent regions.

**neural set** a disposition, often temporary, of a NEURAL PATHWAY to respond in a certain way.

**neural stem cell** see NEURAL PROGENITOR CELL.

**neural substrate** the part of the nervous system that mediates a particular behavior.

**neural synchrony** the simultaneous firing or activation of neurons in multiple areas of the brain, particularly in response to the same stimulus. Many motor and higher level cognitive processes (see EXECUTIVE FUNCTIONS) appear to be based on the coordinated interactions of large numbers of neurons distributed within and across different specialized brain areas. Additionally, recent research suggests dysfunctions in neural synchrony may be associated with several psychological disorders, including AUTISM SPECTRUM DISORDERS.

**neural transmission** see NEUROTRANSMISSION.

**neural tube** a structure formed during early development of an embryo, when folds of the NEURAL PLATE curl over and fuse. Cells of the neural tube differentiate along its length on the anterior–posterior axis to form swellings that correspond to the future FOREBRAIN, MIDBRAIN, and HIND-

BRAIN; the posterior part of the tube develops into the spinal cord. The cavity of the tube ultimately becomes the interconnected cerebral VENTRICLES and the central canal of the spinal cord. In **neural tube defects**, which are a group of congenital defects caused by faulty development of the neural tube from the neural plate, portions of the brain or spinal cord or their covering membranes (the meninges) protrude through a gap in the skull or spinal column, giving rise to neurological disorders, intellectual disability, or physical disability of varying severity. ANENCEPHALY and SPINA BIFIDA are examples of such defects. See also NEURULATION.

**neurasthenia** *n.* a condition marked by fatigue, weakness, insomnia, aches, and pains. The term (from Greek *neurastheneia*, “nerve weakness”) originated in the 19th century, when the symptoms were believed to be due to exhaustion, primarily from overwork. It is rarely used today. The condition is now attributed primarily to emotional conflicts, tensions, frustrations, and other psychological factors, and in *DSM-IV-TR* it is classified as UNDIFFERENTIATED SOMATOFORM DISORDER. [coined in 1869 by U.S. neurologist George Miller Beard (1839–1883)] —**neurasthenic** *adj.*

**neuraxis** *n.* see NEURAL AXIS.

**neurite** *n.* a projection from the neuronal cell body: an AXON or a DENDRITE. This general term is used especially in relation to developing neurons whose axons and dendrites often are difficult to distinguish from one another.

**neuritic plaque** see AMYLOID PLAQUE.

**neuritis** *n.* inflammation of a nerve, especially resulting from infection or autoimmune factors. See also NEUROPATHY.

**neuro-** (**neur-**) *combining form* nerves or the nervous system.

**neuroanatomy** *n.* the study of the structures and relationships among the various parts of the nervous system. —**neuroanatomist** *n.*

**neurobiofeedback** *n.* see NEUROFEEDBACK.

**neurobiology** *n.* a branch of biology that studies the structures and processes of the nervous system. —**neurobiological** *adj.*

**neurobiotaxis** *n.* the growth of a nerve fiber toward the tissue it will innervate, which occurs during embryological development. The factors that influence neurobiotaxis are currently the subject of research on nerve growth in adult organisms, which may contribute to nerve regeneration or replacement after injury or disease.

**neuroblast** *n.* an undifferentiated cell that is capable of developing into a neuron.

**neuroblastoma** *n.* a type of tumor that develops from nerve cells that resemble the primitive neural cells of the embryo. The cells of a neuroblastoma are very small with very large nuclei, often arranged in sheets, clumps, or cords. Most such tumors develop in the adrenal medulla or autonomic nervous system.

**neurochemistry** *n.* the branch of NEUROSCIENCE that deals with the roles of atoms, molecules, and ions in the functioning of nervous systems. Because chemical substances in a physiological system obey the laws of nature that apply in other environments, the activities of neurotransmitters, drugs, and other molecules in the nervous

system can be explained in terms of basic chemical concepts.

**neurocognition** *n.* **1.** cognitive processes or functioning understood in relation to the specific neural mechanisms by which they occur in the brain and any impairment of these mechanisms. **2.** see COGNITIVE NEUROSCIENCE. —**neurocognitive** *adj.*

**neurocontrol** *n.* **1.** the control of electronic devices by energy transformed from neural output. Such devices have been developed for the use of people with paralysis or other severe impairments of bodily function. See BIOENGINEERING. **2.** more generally, any method of controlling an automated system or device that is modeled on the neuronal architecture in human beings. Such methods have been developed in advanced robotics and in such high-tech applications as spacecraft navigation.

**neurocrine** *adj.* referring to neurons that secrete agonists, especially NEUROTRANSMITTERS, at synapses, or to those agonists themselves.

**neurodegenerative disease** any disease characterized by progressive nervous system dysfunction and loss of neural tissue. Alzheimer's disease, amyotrophic lateral sclerosis, and Parkinson's disease are all examples of neurodegenerative diseases. Also called **neurodegenerative disorder**.

**neurodermatitis** *n.* an eczematous skin lesion that may be associated with psychological stress and is exacerbated by rubbing or scratching the skin.

**neurodevelopmental hypothesis** a prominent theory stating that schizophrenia results from an early brain lesion, either fetal or neonatal, that disrupts normal neurological development and leads to abnormalities and later psychotic symptoms. Consequences of this early disruption appear in childhood and adolescence, prior to the actual onset of schizophrenic symptoms, as subtle differences in motor coordination, cognitive and social functioning, and temperament. There is evidence that supports this hypothesis, and risk factors operating in early life (e.g., obstetric complications) have been shown to be associated with the later development of schizophrenia. [originally proposed in 1987 by U.S. neuropsychiatrist Daniel Roy Weinberger]

**neurodidactics** *n.* see NEUROEDUCATION.

**neuroeconomics** *n.* a rapidly emerging field that focuses on understanding how the brain assesses the costs and benefits of the possible outcomes of specific actions and then uses this information to make choices. Combining perspectives and techniques from neuroscience, psychology, and economics, the field addresses the physiological basis of strategic thinking and decision making under uncertainty and examines brain function when individuals perform such choice-behavior tasks as formulating or expressing preferences and beliefs, evaluating decisions, categorizing risks and rewards, computing value, and delaying gratification. Neuroeconomics challenges the assumption that decision making is a logical, analytical process—a simple matter of UTILITY maximization—suggesting instead that it often involves emotion and other psychological variables. For example, individuals making buying decisions tend to show overactivation in the “wanting” or reward area of the brain, whereas individuals making decisions about money during times of economic volatility show strong activation in the areas of the brain associated with fear.

**neuroeducation** *n.* the study of the activities that occur in the brain when individuals learn and the application of this knowledge to improve classroom instructional practices and optimize curriculum design. This emerging field represents the intersection of the broader areas of neuroscience, psychology, and education, integrating research on neuronal functioning with educational improvement to understand how the brain enables learning, working memory, intelligence, and creative thinking. For example, a neuroeducational investigation of the relationship between young children's insight into spatial structures and the development of spatial and number sense might result in a series of classroom activities to stimulate children's acquisition of spatial and number skills. However, such investigations are not without their critics. Many researchers point to the gap separating microscopic neural processes from macroscopic classroom behaviors as a major obstacle to establishing the neuroscience–education bridge. Prominent among these critics is U.S. philosopher and cognitive scientist John T. Bruer, who argues that the study of brain–behavior relationships is too far removed from the development of learning strategies and teaching methods to offer any useful benefits. Also called **brain-based learning**; **educational neuroscience**; **mind–brain–education (MBE)**; **neurodidactics**; **neuropedagogy**.

**neuroeffector junction** the functional connection between a neuron and a muscle or a gland. See also NEUROMUSCULAR JUNCTION.

**neuroeffector transmission** the transmission of nerve impulses from neurons through NEUROEFFECTOR JUNCTIONS to the two general types of effectors, muscles and glands.

**neuroendocrinology** *n.* the study of the relationships between the nervous system—especially the brain—and the endocrine system. Some cells within the nervous system release hormones into the local or systemic circulation; these are called **neuroendocrine** (or **neurosecretory**) **cells**. The HYPOTHALAMUS, for example, produces **RELEASING HORMONES** that regulate secretion of pituitary hormones. Certain substances, such as **NOREPINEPHRINE**, act both as hormones and as neurotransmitters. See also **PSYCHONEUROENDOCRINOLOGY**. —**neuroendocrinological** *adj.* —**neuroendocrinologist** *n.*

**neuroethics** *n.* a rapidly growing subdiscipline of BIOETHICS that focuses on the moral, social, and public policy implications of conducting NEUROSCIENCE research and of translating the findings into clinical practice. The explosive increase in knowledge about the biology of human behavior, cognition, and emotion and the growing ability to monitor and even intervene in their functioning—through the use of brain imaging, psychopharmacology, neurosurgery, and other techniques—have led not only to new diagnostic capabilities and therapeutic innovations but also to numerous concerns. These include issues relating to **INFORMED CONSENT**; personal responsibility; free will; conceptions of health and well-being; and predictions of disease, behavior, and other factors. For example, **TRANSCRANIAL MAGNETIC STIMULATION** shows promise for treating certain movement and psychological disorders but could also potentially be used for nontherapeutic purposes, such as cognitive enhancement to directly manipulate attention, memory, mood, or other psychological capacities to make a “better” brain. See also **NEUROLAW**.

**neuroethology** *n.* a branch of biology that studies non-

human animal behavior in relation to neural processes and structures. See ETHOLOGY.

**neurofeedback** *n.* a type of BIOFEEDBACK training intended to enable people to alter their brain waves by using information from a video display or auditory signal of electroencephalograph (EEG) recordings of their brain-wave characteristics. Neurofeedback has been used with mixed results in the treatment of attention-deficit/hyperactivity disorder and epilepsy and is being investigated as a possible intervention for other conditions as well (e.g., headaches, insomnia, anxiety). Also called **EEG biofeedback**; **neuro-biofeedback**; **neurotherapy**. See ALPHA-WAVE TRAINING.

**neurofibril** *n.* a fine fiber found in the cytoplasm of a neuron. It is composed of microscopic protein filaments and MICROTUBULES. Abnormal formation of neurofibrils leads to the development of NEUROFIBRILLARY TANGLES, which are characteristic of Alzheimer's disease. Also called **neural fibril**.

**neurofibrillary tangles** twisted strands of abnormal filaments within neurons that are associated with Alzheimer's disease. The filaments form microscopically visible knots or tangles consisting of tau protein, which normally is associated with MICROTUBULES. If the structure of tau is rendered abnormal, the microtubule structure collapses, and the tau protein collects in neurofibrillary tangles.

**neurofibroma** *n.* a tumor of peripheral nerves caused by abnormal proliferation of SCHWANN CELLS. A neurofibroma is very similar to a SCHWANNOMA but is distinguished by its lack of a capsule.

**neurofibromatosis** *n.* an autosomal dominant neurological disorder that is characterized by tumors of the peripheral nervous system (NEUROFIBROMAS). The tumors may be firm subcutaneous nodules or soft cutaneous lumps that form a pocket when pressed. Three subtypes have been identified: **Type 1** (also called **von Recklinghausen's disease**) is present at birth with pigmented (pale brown) patches on the skin and deformed bones; **Type 2** begins in adolescence with ringing in the ears, poor balance, and eventual hearing loss; and **schwannomatosis**, the rarest form, causes intense, chronic pain and other neurological symptoms such as tingling, numbness, and weakness in the fingers and toes. Neurofibromatosis can be either an inherited disorder or the product of a gene mutation.

**neurofilament** *n.* a small, rodlike structure found in the axons of neurons. Neurofilaments are involved in the transport of materials along the axon. See AXONAL TRANSPORT.

**neurogenesis** *n.* the production of new neurons during early nervous system development and throughout the lifespan. The failure or interruption of neurogenesis is implicated in neurological diseases such as Alzheimer's and Parkinson's, as well as in psychiatric disorders such as depression, bipolar disorder, and schizophrenia.

**neurogenic** *adj.* pertaining to a condition or event caused or produced by a component of the nervous system.

**neurogenic communication disorder** any speech or language problem due to nervous system impairment that causes some difficulty or inability in exchanging information with others.

**neuroglia** *n.* see GLIA. —**neuroglial** *adj.*

**neuroglioma** *n.* see GLIOMA.

**neurogram** *n.* **1.** see ENGRAM. **2.** a wavelike tracing, ei-

ther printed or displayed on a monitor, that represents the electrical impulses of neurons. **3.** a three-dimensional image of nerves in the brain provided by a specialized MAGNETIC RESONANCE IMAGING technique.

**neurohormone** *n.* a hormone produced by neural tissue and released into the general circulation. See NEUROENDOCRINOLOGY.

**neurohypophysis** *n.* see PITUITARY GLAND; POSTERIOR PITUITARY.

**neuroimaging** *n.* the use of various technologies to noninvasively study the structures and functions of the brain. These technologies include MAGNETIC RESONANCE IMAGING, FUNCTIONAL MAGNETIC RESONANCE IMAGING, COMPUTED TOMOGRAPHY, and POSITRON EMISSION TOMOGRAPHY.

**neurokinin** *n.* a neurotransmitter family comprising three related neuropeptides: SUBSTANCE P, **neurokinin A**, and **neurokinin B**. They appear to play roles in emotion and in pain perception.

**neurolaw** *n.* a rapidly growing field representing the intersection of NEUROSCIENCE and the legal system. It encompasses not only the study of the neural workings of the human brain as they relate to issues of crime, guilt, and punishment but also the emerging applications of imaging technologies within courtroom proceedings. For example, in a murder trial a defense attorney might use a brain scan showing a tumor pressing on the defendant's AMYGDALA to argue that he or she couldn't control his or her behavior and should be absolved of any CRIMINAL RESPONSIBILITY for the act. Similarly, in civil litigation a lawyer might introduce a scan as evidence that his or her client has a traumatic brain injury.

Despite its increasing popularity and prevalence, neurolaw remains controversial. Many argue that using neuroimaging—originally developed as a diagnostic tool for medical professionals—to “prove” unobservable psychological attributes (e.g., thoughts, feelings, intentions) through brain activity is an invasion of privacy and infringement of freedom of thought that is devoid of scientifically demonstrated accuracy and validity. Others question the implications of neurolaw for such traditional notions as free will, rational choice, and voluntary conduct (ACTUS REUS). Proponents, however, point out potential benefits of applying neuroscience findings and techniques to law, such as developing more accurate methods for lie detection and criminal behavior prediction, developing more effective means of criminal rehabilitation, improving sentencing procedures, and detecting stereotypes or biases unconsciously held by potential jurors. See also NEUROETHICS.

**neuroleptic** *n.* see ANTIPSYCHOTIC.

**neuroleptic malignant syndrome** a rare complication of therapy with conventional (typical or first-generation) ANTIPSYCHOTICS, characterized by fever, inability to regulate blood pressure, difficulty in breathing, and changes in consciousness (including coma); mortality rates approaching 25% have been observed. It occurs primarily at the start of treatment or with a sudden increase in dose. The incidence of the syndrome, which was never high, has declined further with the abandonment of MEGA-DOSE PHARMACOTHERAPY with conventional antipsychotics and the advent of second-generation ATYPICAL ANTIPSYCHOTICS.

**neuroleptic syndrome** the series of effects observed in individuals who have taken ANTIPSYCHOTICS. It is charac-

terized by reduced motor activity and emotionality, an indifference to external stimuli, and a decreased ability to perform tasks that require good motor coordination. With high doses, patients may become cataleptic.

**neurolinguistic programming (NLP)** a set of techniques and strategies designed to improve interpersonal communications and relationships by modifying the “mental programs,” or MENTAL MODELS of the world, that individuals develop and use to respond to and interact with the environment and other people. This approach uses principles derived from NEUROLINGUISTICS and presumes that these mental programs, as well as the behaviors they influence, result from interactions among the brain, language, and the body. In order to achieve desired change, one must first understand subjective experience and the structures of thought (i.e., mental programs) underlying the experience, and then learn to modify those programs as needed. For example, one might use NLP to enhance adaptive behavior across a variety of situations or to attain excellence in personal performance. Although originally applied to psychotherapy and counseling, neurolinguistic programming has uses in other fields, such as business management, artificial intelligence, and education. [developed in the United States in 1976 by U.S. mathematician and therapist Richard Bandler (1950– ) and U.S. linguist John Grinder (1940– )]

**neurolinguistics** *n.* the branch of linguistics that investigates how language organization and language processing are encoded in the brain.

**neurological amnesia** a loss or impairment of memory due to disease or injury of the nervous system.

**neurological evaluation** analysis of the data gathered by an examining physician of an individual's mental status and sensory and motor functioning. The examination typically includes assessment of cognition, speech and behavior, orientation and level of alertness, muscular strength and tone, muscle coordination and movement, TENDON REFLEXES, cranial nerves, pain and temperature sensitivity, and discriminative senses.

**Neurological Evaluation Scale (NES)** an assessment instrument originally developed in 1989 to provide a standardized tool for the evaluation of neurological abnormalities and impairments associated with schizophrenia. It is often used in researching other severe mental illnesses (e.g., bipolar disorders) as well. [developed by U.S. psychiatrists Robert W. Buchanan and Douglas W. Heinrichs]

**neurological impairment** any condition marked by disruption of the nervous system as a result of disease, injury, or the effects of a drug or other chemical.

**neurology** *n.* a branch of medicine that deals with the nervous system in both healthy and diseased states. The diagnosis and treatment of diseases of the nervous system is called **clinical neurology**; **neurologists** diagnose and treat patients with stroke, dementia, headaches, and back pain, among other disorders. —**neurological** *adj.*

**neuromarketing** *n.* a subdiscipline of MARKET RESEARCH that examines changes in brain activity as they relate to product liking and purchasing and other consumer behavior. Measures commonly used in neuromarketing to reveal the frequency, location, and timing of neuronal activity include ELECTROENCEPHALOGRAPHY, ELECTROMYOGRAPHY, FUNCTIONAL MAGNETIC RESONANCE IMAGING, MAGNETOENCEPHALOGRAPHY, and SKIN CONDUCTANCE monitoring. For example, researchers may analyze blood flow to

different regions of the brain or record the brain's electrical activity as volunteers watch television advertisements or shop in supermarkets to help determine why those individuals prefer certain brands or how they make decisions to buy specific items. Some people criticize neuromarketing as an invasion of privacy—a peering into the mind to examine neurophysiological responses and emotional reactions that may not consciously be registered—with potentially exploitative applications. Practitioners, however, note that the purpose of neuromarketing is only to provide insight and that their research complements already extant techniques (e.g., focus groups, surveys, interviews) that are used to create more effective products, services, and advertising campaigns. Also called **consumer neuroscience**. [coined in 2002 by Dutch cognitive neuroscientist Ale Smids]

**neuromatrix theory** the theory that pain is produced by patterns of nerve impulses, or **neurosignatures**, that can be triggered not only by painful stimuli but also by other means, such as chronic stress. The theory attempts to account for such phenomena as PHANTOM LIMB pain and chronic pain syndromes. See also GATE-CONTROL THEORY. [proposed by Canadian psychologist Ronald Melzack (1929– )]

**neuromodulator** *n.* a substance that modulates the effectiveness of a neurotransmitter by influencing its release or RECEPTOR response to it. See TAURINE.

**neuromuscular disorder** any pathological condition that involves the nerves and muscles. Common symptoms include weakness, cramps, and paralysis. Examples of such disorders include MUSCULAR DYSTROPHY, MYASTHENIA GRAVIS, and the MYOPATHIES.

**neuromuscular junction** the junction between a motor neuron and the muscle fiber it innervates. In skeletal muscle, the muscle-cell plasma membrane (sarcolemma) is greatly folded in the region opposite the terminus of a motor axon, forming a motor END PLATE. When impulses arrive at the axon terminus, a neurotransmitter diffuses across the gap separating the axon and motor end plate. The neurotransmitter binds to receptors in the sarcolemma and causes an end-plate potential, which can trigger muscle contraction. Also called **myoneural junction**; **neuromuscular synapse**.

**neuromuscular system** see MOTOR SYSTEM.

**neuromyopathy** *n.* see MYOPATHY.

**neuron (neurone)** *n.* the basic cellular unit of the nervous system. Each neuron is composed of a CELL BODY; fine, branching extensions (DENDRITES) that receive incoming nerve signals; and a single, long extension (AXON) that conducts nerve impulses to its branching terminal. The axon terminal transmits impulses to other neurons or to effector organs (e.g., muscles and glands) via junctions called SYNAPSES or NEUROMUSCULAR JUNCTIONS. Neurons can be classified according to their function as MOTOR NEURONS, SENSORY NEURONS, or INTERNEURONS. There are various structural types, including UNIPOLAR NEURONS, BIPOLAR NEURONS, and MULTIPOLAR NEURONS. The axons of vertebrate neurons are often surrounded by a MYELIN SHEATH. In contrast to other cell types, neurons possess the capacity to modify their structure and function based on the receipt of information and stimuli from their immediate environment (see NEURAL PLASTICITY). Also called **nerve cell**. [term coined by German physician Heinrich Wilhelm von Waldeyer-Hartz (1836–1921)] —**neuronal** *adj.*

**neuronal cell death** the selective, genetically programmed death of nerve cells that occurs during development of the nervous system. See also PROGRAMMED CELL DEATH.

**neuronal differentiation** the final stage in the development of neurons, during which they increase in size, produce more dendrites, extend their axons farther away from the cell body, and form new connections with other cells. In humans, neuronal development begins when the fetus is about 20 weeks old and continues after birth and throughout the lifespan.

**neuronal group selection** see NEURAL DARWINISM.

**neuronal regeneration** see NEURAL REGENERATION.

**neuronal transmission** see NEUROTRANSMISSION.

**neuron doctrine** the principle that the nervous system is composed of individual cells (neurons) that make contact with each other but do not interpenetrate. Before this doctrine was accepted, many assumed that the nervous system consisted of continuous tubelike networks. Also called **neuron theory**. [presented in 1891 by German physician Heinrich Wilhelm von Waldeyer-Hartz (1836–1921)]

**neurone** *n.* see NEURON.

**Neurontin** *n.* a trade name for GABAPENTIN.

**neuroparalytic ophthalmia** see OPHTHALMIA.

**neuropathic pain** pain caused by damage to peripheral nerves.

**neuropathology** *n.* the study of diseases of the nervous system. —**neuropathological** *adj.* —**neuropathologist** *n.*

**neuropathy** *n.* disease of the nervous system, particularly the peripheral nerves. See PERIPHERAL NEUROPATHY. —**neuropathic** *adj.*

**neuropedagogy** *n.* see NEUROEDUCATION.

**neuropeptide** *n.* any of several peptides that are released by neurons as NEUROTRANSMITTERS or NEUROHORMONES. They include the ENDOGENOUS OPIOIDS (e.g., enkephalin, endorphin); peptides found in both the brain and the peripheral nervous system (e.g., SUBSTANCE P, NEUROTENSIN); hypothalamic RELEASING HORMONES (e.g., thyrotropin-releasing hormone); pituitary hormones (e.g., GROWTH HORMONE, PROLACTIN); and other circulating peptides (e.g., atrial natriuretic peptide, bradykinin).

**neuropeptide Y** a neuropeptide transmitter found in the brain, heart, and adrenal glands that stimulates vasoconstriction and regulates feeding behavior. Some research suggests that it may have a role in Alzheimer's disease.

**neuropharmacology** *n.* the scientific study of the effects of drugs on the nervous system. —**neuropharmacological** *adj.* —**neuropharmacologist** *n.*

**neurophysiology** *n.* a branch of NEUROSCIENCE that is concerned with the normal and abnormal functioning of the nervous system, including the chemical and electrical activities of individual neurons. —**neurophysiological** *adj.* —**neurophysiologist** *n.*

**neuropil** *n.* a weblike network of AXON and DENDRITE filaments that forms the bulk of the GRAY MATTER of the central nervous system. The CELL BODIES of neurons are embedded in the network of fibers.

**neuroplasticity** *n.* see NEURAL PLASTICITY.

**neuroprotective** *adj.* denoting agents, such as drugs and hormones, that are believed to prevent damage to the brain or spinal cord.

**neuropsychological assessment** an evaluation of the presence, nature, and extent of brain damage or dysfunction derived from the results of various NEUROPSYCHOLOGICAL TESTS.

**Neuropsychological Assessment Battery (NAB)** an integrated battery consisting of 33 tests for assessing cognitive skills in adults (ages 18–97) with a variety of neurological disorders. The tests are organized in six modules, including five domain-specific modules (comprised of tests for attention, language, memory, spatial ability, and executive functions) and a screening module. Among the tests included in the domain-specific modules are five whose cognitive demands resemble those in the everyday environment so as to assess cognitive daily living skills: Driving Scenes (in the Attention module), Bill Payment (Language module), Daily Living Memory (Memory module), Map Reading (Spatial module), and Judgment (Executive Functions module). [published in 2003 by U.S. neuropsychologists Robert A. Stern and Travis White]

**neuropsychological test** any of various clinical instruments for assessing cognitive impairment, including those measuring memory, language, learning, attention, and visuospatial and visuoconstructive functioning. Examples are the TRAIL MAKING TEST, STROOP COLOR–WORD INTERFERENCE TEST, and COMPLEX FIGURE TEST.

**neuropsychology** *n.* the branch of science that studies the physiological processes of the nervous system and relates them to behavior and cognition, in terms both of their normal function and of the dysfunctional processes associated with brain damage. See also CLINICAL NEUROPSYCHOLOGY; COGNITIVE NEUROPSYCHOLOGY; COMPARATIVE NEUROPSYCHOLOGY; EXPERIMENTAL NEUROPSYCHOLOGY; PEDIATRIC NEUROPSYCHOLOGY; REHABILITATION NEUROPSYCHOLOGY; SCHOOL NEUROPSYCHOLOGY. —**neuropsychological** *adj.* —**neuropsychologist** *n.*

**neuroreceptor** *n.* a molecule located in a neuron cell membrane that binds molecules of a particular neurotransmitter, hormone, drug, or the like and initiates a particular response within the neuron. Also called **neural receptor**; **neurotransmitter receptor**; **receptor molecule**.

**neuroregulator** *n.* any of various chemical substances that act on neurons and that are generally classified as NEUROHORMONES, NEUROMODULATORS, and NEUROTRANSMITTERS.

**neuroscience** *n.* the scientific study of the nervous system, including NEUROANATOMY, NEUROBIOLOGY, NEUROCHEMISTRY, NEUROPHYSIOLOGY, and NEUROPHARMACOLOGY, and its applications in psychology, psychiatry, and neurology. See also BEHAVIORAL NEUROSCIENCE; CLINICAL NEUROSCIENCE; COGNITIVE NEUROSCIENCE.

**neurosecretion** *n.* **1.** the secretion of substances, such as hormones or neurotransmitters, by neural tissue. **2.** a substance secreted in this way.

**neurosecretory cell** see NEUROENDOCRINOLOGY.

**neurosignature** *n.* see NEUROMATRIX THEORY.

**neurosis** *n.* any one of a variety of mental disorders characterized by significant anxiety or other distressing

emotional symptoms, such as persistent and irrational fears, obsessive thoughts, compulsive acts, dissociative states, and somatic and depressive reactions. The symptoms do not involve gross personality disorganization, total lack of insight, or loss of contact with reality (compare PSYCHOSIS). In psychoanalysis, neuroses are generally viewed as exaggerated, unconscious methods of coping with internal conflicts and the anxiety they produce. Most of the disorders that used to be called neuroses are now classified as ANXIETY DISORDERS. Also called **psychoneurosis**. —**neurotic** *adj.*, *n.*

**neurosurgery** *n.* surgical procedures performed on the brain, spinal cord, or peripheral nerves for the purpose of restoring functioning or preventing further impairment. See also PSYCHOSURGERY. —**neurosurgeon** *n.* —**neurosurgical** *adj.*

**neurosyphilis** *n.* a late manifestation of untreated or inadequately treated syphilis, usually occurring years after the initial infection, in which the causative bacterium, *Treponema pallidum*, damages and destroys the brain and spinal cord. This results in blindness and severe neurological deficits, including memory impairment, inability to concentrate, and behavioral deterioration. See ASYMPTOMATIC NEUROSYPHILIS; GENERAL PARESIS; LOCOMOTOR ATAXIA.

**neurotensin (NT)** *n.* a NEUROPEPTIDE released from the hypothalamus into the circulation and widely distributed throughout the central nervous system.

**neurotherapy** *n.* see NEUROFEEDBACK.

**neurotic anxiety** in psychoanalytic theory, anxiety that originates in unconscious conflict and is maladaptive in nature: It has a disturbing effect on emotion and behavior and also intensifies resistance to treatment. Neurotic anxiety contrasts with REALISTIC ANXIETY about an external danger or threat and with moral anxiety, which is guilt posited to originate in the superego.

**neurotic character** see CHARACTER NEUROSIS.

**neurotic conflict** **1.** in psychoanalytic theory, an INTRAPSYCHIC CONFLICT that leads to persistent maladjustment and emotional disturbance. **2.** in the approach of Karen D. HORNEY, the clash that occurs between opposing NEUROTIC NEEDS, such as an excessive need for power and independence and an excessive need for love and dependence. See also NEUROTIC TREND.

**neurotic depression** a less common name for REACTIVE DEPRESSION or DYSTHYMIC DISORDER.

**neurotic inventory** a questionnaire designed to reveal a person's tendency toward NEUROTICISM. Statements are taken from case histories and related material, and the participant indicates agreement or disagreement with each statement. Theoretically, the more statements with which a participant agrees, the greater the tendency toward neuroticism.

**neuroticism** *n.* **1.** the state of being neurotic or a proneness to NEUROSIS. **2.** a mild condition of neurosis. **3.** one of the dimensions of the FIVE-FACTOR PERSONALITY MODEL and the BIG FIVE PERSONALITY MODEL, characterized by a chronic level of emotional instability and proneness to psychological distress. **4.** in EYSENCK'S DIMENSIONS, one of three major dimensions, the others being EXTRAVERSION and PSYCHOTICISM. See also FACTOR THEORY OF PERSONALITY.

**neurotic need** in psychoanalytic theory, an excessive drive or demand that may arise out of the strategies individuals use to defend themselves against BASIC ANXIETY. Karen D. HORNEY enumerated 10 neurotic needs: for affection and approval, for a partner to take over one's life, for restriction of one's life, for power, for exploitation of others, for prestige, for admiration, for achievement, for self-sufficiency and independence, and for perfection. When an individual's personality is dominated by a few neurotic needs, he or she may exhibit a NEUROTIC TREND.

**neurotic solution** a method of resolving a NEUROTIC CONFLICT by removing it from awareness. [proposed by Karen D. HORNEY]

**neurotic trend** in the theory of Karen D. HORNEY, any one of three basic tendencies stemming from an individual's choice of strategies to counteract BASIC ANXIETY. These strategies generate insatiable NEUROTIC NEEDS and include (a) moving toward people, or clinging to others (see COMPLIANT CHARACTER); (b) moving away from people, or insisting on independence and self-dependence (see DETACHED CHARACTER); and (c) moving against people, or seeking power, prestige, and possessions (see AGGRESSIVE CHARACTER).

**neurotoxicology** *n.* the study of the effects of toxins and poisons on the nervous system. —**neurotoxicological** *adj.*

**neurotoxin** *n.* any substance that is destructive to the central or peripheral nervous system, causing temporary or permanent damage. Heavy metals such as lead and mercury, some pesticides and industrial or cleaning solvents, some drugs (e.g., those used in chemotherapy), and snake venom are examples of substances with the capacity (**neurotoxicity**) to produce this effect. —**neurotoxic** *adj.*

**neurotransmission** *n.* the process by which a signal or other activity in a neuron is transferred to an adjacent neuron or other cell. **Synaptic transmission**, which occurs between two neurons via a SYNAPSE, is largely chemical, occurring through the release and binding of NEUROTRANSMITTER, but it may also be electrical (see ELECTRICAL SYNAPSE). Neurotransmission also occurs between a neuron and an effector organ or gland and between a neuron and a skeletal muscle cell (see NEUROMUSCULAR JUNCTION). Also called **neural transmission**; **neuronal transmission**.

**neurotransmitter** *n.* any of a large number of chemicals that can be released by neurons to mediate transmission of nerve signals across the junctions (SYNAPSES) between neurons. When triggered by a nerve impulse, the neurotransmitter is released from the terminal button (see AXON), travels across the SYNAPTIC CLEFT, and binds to and reacts with RECEPTOR molecules in the postsynaptic membrane. Neurotransmitters include amines (e.g., NOREPINEPHRINE, SEROTONIN) and amino acids (e.g., GLUTAMATE, GLYCINE). Some neurotransmitters can be categorized as generally excitatory (e.g., glutamate, glycine) or generally inhibitory (e.g. GAMMA-AMINOBUTYRIC ACID). **Excitatory neurotransmitters** exert a facilitatory or activating downstream effect on postsynaptic neurons. That is, they depolarize the postsynaptic neurons, resulting in a greater likelihood of an ACTION POTENTIAL. **Inhibitory neurotransmitters** hyperpolarize the postsynaptic neurons—thereby making the intracellular space more negative, and hence, requiring a greater positive charge to overcome—resulting in a smaller likelihood of an action potential. However,

some neurotransmitters have both excitatory and inhibitory receptors; these include ACETYLCHOLINE and DOPAMINE. Also called **chemical transmitter**; **synaptic transmitter**.

**neurotransmitter receptor** see NEURORECEPTOR.

**neurotrophin** *n.* any of various proteins that promote the development and survival of specific populations of neurons. Neurotrophins include NERVE GROWTH FACTOR, deficits in the AXONAL TRANSPORT of which have been linked to Alzheimer's disease, and BRAIN-DERIVED NEUROTROPHIC FACTOR, which plays a crucial role in cognition, learning, and memory formation by modulating synaptic PLASTICITY. Also called **neurotrophic factor**.

**neurulation** *n.* the process of development of the rudimentary nervous system in early embryonic life, including formation of the NEURAL TUBE from the NEURAL PLATE.

**neutral color** a less common name for an ACHROMATIC color.

**neutrality** *n.* an approach that is nonjudgmental, as exhibited, for example, by a therapist who refrains from expressing judgments of right and wrong or suggesting what is proper behavior on the part of the client.

**neutralization** *n.* in classical psychoanalytic theory, the use of sexual or aggressive energy in the service of the EGO—that is, in functions such as problem solving, creative imagination, scientific inquiry, and decision making—rather than for gratification of the INSTINCTS. SUBLIMATION uses neutralized energy. Also called **taming of the instinct**. See also DESEXUALIZATION. —**neutralize** *vb.*

**neutralizer** *n.* a member of a therapy group who plays a role of modifying and controlling impulsive, aggressive, or destructive behaviors of other members of the group. [first described by Russian-born U.S. psychotherapist Samuel Richard Slavson (1890–1981)]

**neutral monism** a position holding that there is a single substance to reality, but that this is neither physical (body) nor mental (mind). It seeks to avoid both IDEALISM and MATERIALISM and the philosophical problems that attend them. William JAMES advocated such a position (see RADICAL EMPIRICISM), as did British philosopher Bertrand Russell (1872–1970). However, it has been difficult to convey satisfactorily what the nature of such a substance might be. Compare IDEALISTIC MONISM; NATURAL MONISM. See also MIND–BODY PROBLEM.

**neutral point** the single wavelength of visible light that appears uncolored (white or gray) to a person with DICHROMATISM (someone with only two cone photopigments, rather than three). The specific wavelength of the neutral point varies according to which photopigment is missing. Those with normal color vision (TRICHROMATISM) and three cone photopigments have no neutral point.

**neutral stimulus** in CLASSICAL CONDITIONING, a stimulus that does not elicit a response of the sort to be measured as an index of conditioning. For example, the sound of a bell has no effect on salivation, therefore it is a neutral stimulus with respect to salivation and a good candidate for conditioning of that response.

**Nevo syndrome** see SOTOS SYNDROME.

**New Age therapy** any of a number of popular treatments that lack a sound scientific basis and are generally not accepted by health professionals as valid, effective therapeutic practice. Support for such therapies does not come

from independent scientific studies but typically is derived primarily from the “insights” and observations of their founders or from participant feedback. An example of a New Age therapy is REBIRTHING.

**new-look theory** a version of COGNITIVE DISSONANCE THEORY postulating that cognitive dissonance is a result of behavior that causes aversive consequences. The dissonance occurs when a person assumes responsibility for these consequences and experiences physiological arousal that he or she perceives to be negative and a result of the consequences. [originally proposed by U.S. psychologists Joel Cooper (1943– ) and Russell H. Fazio (1952– )]

**Newman–Keuls multiple comparison test** a statistical procedure in which sets of means are compared following a significant result from an ANALYSIS OF VARIANCE. The mean values of all experimental groups are arranged in order of size and formed into pairs, and the differences between members of each pair are evaluated against a critical value known as the STUDENTIZED RANGE STATISTIC. Also called **Newman–Keuls multiple range test**; **Newman–Keuls test**. [D. Newman, British statistician; M. Keuls, Dutch horticulturalist]

**Newtonian view** see MAXWELLIAN VIEW. [Isaac NEWTON]

**Newton's law of color mixture** the principle that color mixtures appearing identical to one another will produce the same perceived color when they are mixed with one another. [Isaac NEWTON]

**nexus** *n.* **1.** a bond or connection, especially between members of a group or series. **2.** a connection of mutual dependence or causality between variables.

**Neyman–Pearson theory** an approach to formulating two competing hypotheses (the NULL HYPOTHESIS and an ALTERNATIVE HYPOTHESIS) and identifying appropriate statistical procedures for choosing between them. It focuses on identifying CRITICAL REGIONS, minimizing errors in estimation, and obtaining an appropriate balance in the probability of committing TYPE I ERRORS and TYPE II ERRORS. [Jerzy Neyman (1894–1981), Russian-born U.S. statistician; Egon S. Pearson (1895–1980), British statistician]

**NGF** abbreviation for NERVE GROWTH FACTOR.

**NGRI** abbreviation for NOT GUILTY BY REASON OF INSANITY.

**NGT** abbreviation for NOMINAL GROUP TECHNIQUE.

**NGU** abbreviation for NONGONOCOCCAL URETHRITIS.

**NH** abbreviation for NULL HYPOTHESIS.

**NHIS** abbreviation for NATIONAL HEALTH INTERVIEW SURVEY.

**NHST** abbreviation for null hypothesis SIGNIFICANCE TESTING.

**niacin** *n.* see NICOTINIC ACID.

**nicotine** *n.* an alkaloid obtained primarily from the TOBACCO plant (*Nicotiana tabacum*). Today, nicotine is one of the most widely used psychoactive drugs; it is the primary active ingredient in tobacco and accounts for both the acute pharmacological effects of smoking or chewing tobacco (e.g., a discharge of EPINEPHRINE; a sudden release of glucose; an increase in blood pressure, respiration, heart rate, and cutaneous vasoconstriction) and the dependence that develops (see NICOTINE DEPENDENCE; NICOTINE WITH-

DRAWAL). The behavioral effects of the drug include enhanced alertness, decreased reaction time, improved attention, and feelings of calm. Nicotine produces multiple pharmacological effects on the central nervous system by activating NICOTINIC RECEPTORS as well as cannabinoid and other receptors, thus facilitating the release of several neurotransmitters, particularly dopamine (a reaction similar to that seen with such drugs as cocaine and heroin). In large doses, it is highly poisonous, producing effects such as dizziness, diarrhea, vomiting, tremors, spasms, unconsciousness, heart attack, and potentially death via paralysis of the muscles of respiration. Nicotine was isolated from the tobacco plant in 1828 and was named for the French diplomat Jean Nicot, who introduced tobacco in France in 1560. —**nicotinic** *adj.*

**nicotine dependence** in *DSM-IV-TR*, a pattern of repeated or compulsive use of nicotine despite significant nicotine-related behavioral, physiological, and psychosocial problems, with tolerance and characteristic withdrawal symptoms if use is suspended (see NICOTINE WITHDRAWAL). The equivalent term in *DSM-5* is **tobacco use disorder**. See also SUBSTANCE DEPENDENCE.

**nicotine withdrawal** a characteristic withdrawal syndrome that develops after cessation of (or reduction in) prolonged, heavy nicotine consumption. Two or more of the following are required for a *DSM-IV-TR* diagnosis of nicotine withdrawal: DYSPHORIA or depressed mood; insomnia; irritability, frustration, or anger; anxiety; difficulty in concentrating; restlessness; decreased heart rate; and increased appetite or weight gain. The equivalent term in *DSM-5* is **tobacco withdrawal**.

**nicotinic acid** a vitamin of the B complex that serves as an essential precursor of the coenzyme NAD (nicotinamide adenine dinucleotide) and related coenzymes, which are vital for energy metabolism. In 1937, U.S. biochemist Conrad Arnold Elvehjem (1901–1962) discovered that nicotinic acid can prevent or cure PELLAGRA. Also called **niacin**.

**nicotinic acid deficiency** see PELLAGRA.

**nicotinic receptor (nAChR)** a type of ACETYLCHOLINE RECEPTOR that responds to NICOTINE as well as to acetylcholine. Nicotinic receptors mediate chiefly the excitatory activities of acetylcholine, including those at NEUROMUSCULAR JUNCTIONS. There are several nicotinic receptor subtypes, which have various roles; for example, both the  $\alpha 4\beta 2$  and  $\alpha 7$  nicotinic subtypes have roles in memory. The latter,  $\alpha 7$ , is being studied as a potential target for the treatment of Alzheimer's disease and schizophrenia. Also, a large reduction in the  $\alpha 6\beta 3^*$  subtype has been found in Parkinson's disease. Compare MUSCARINIC RECEPTOR.

**nictitating membrane** a fold of transparent or semi-transparent membrane, present in many vertebrates, that can be drawn laterally over the eye like a third eyelid, independently of the other eyelids. This "blink" (the nictitating-membrane response) can be conditioned in a nonhuman animal (e.g., a rabbit) by pairing a puff of air (the UNCONDITIONED STIMULUS) with a light or tone (the CONDITIONED STIMULUS).

**NIDDM** abbreviation for noninsulin-dependent DIABETES MELLITUS.

**Niemann-Pick disease** an inherited group of lipid-storage disorders generally marked by a deficiency of the enzyme acid sphingomyelinase and accumulation of lipids in brain tissue and visceral organs. Massive liver and spleen

enlargement (hepatomegaly and splenomegaly) may occur. In **Type A**, progressive deterioration of the nervous system, blindness, and death before adulthood are common. In **Type B**, the nervous system is not affected and individuals may live into adulthood. **Types C1** and **C2** usually appear in childhood but can appear in infancy or adulthood. They are characterized by severe liver disease, jaundice, breathing difficulties, developmental delay, seizures, poor muscle tone, lack of coordination, problems with feeding, and an inability to move the eyes vertically. Type A occurs more frequently among individuals of Ashkenazi (eastern and central European) Jewish descent and is caused by mutations in the *SMPD1* gene, whereas Type C1 occurs more frequently in people of French-Acadian descent in Nova Scotia and is caused by mutations in the *NPC1* gene. Also called **sphingomyelin lipidosis**. See also LIPID-METABOLISM DISORDERS. [Albert Niemann (1880–1921) and Ludwig Pick (1868–1944), German physicians]

**night blindness** a visual impairment marked by partial or complete inability to see objects in a dimly lighted environment. Night blindness can be inherited or due to defective DARK ADAPTATION or a dietary deficiency of vitamin A. Also called **nyctalopia**.

**night-eating syndrome** an eating disorder characterized by INSOMNIA, nocturnal HYPERPHAGIA, and morning ANOREXIA that persist for at least 3 months. Recent research suggests night-eating syndrome is related to hormonal irregularities and a disturbed CIRCADIAN RHYTHM of food intake, although chronic stress may also be a contributing factor. This type of eating disorder is estimated to affect 1.5% of the global population and is thought to occur in 10%–25% of obese individuals. [first described in 1955 by U.S. psychiatrist Albert J. Stunkard (1922–2014)]

**night hospital** a unit within a hospital in which patients receive psychiatric care at night but spend the day in the community. See also PARTIAL HOSPITALIZATION.

**nightmare** *n.* a frightening or otherwise disturbing dream in which fear, sadness, despair, disgust, or some combination thereof forms the emotional content. Nightmares contain visual imagery and some degree of narrative structure and typically occur during REM SLEEP. The dreamer tends to waken suddenly from a nightmare and is immediately alert and aware of his or her surroundings. See NIGHTMARE DISORDER; SLEEP TERROR DISORDER. —**nightmarish** *adj.*

**nightmare-death syndrome** the unexpected and mysterious nocturnal death of an apparently healthy individual that occurs among southeast Asian refugees, especially Hmong, in the United States. It is attributed by some Hmong to a nocturnal spirit encounter and is similar to the Filipino concept of BANGUNGUT. Also called **sudden unexpected nocturnal-death syndrome**.

**nightmare disorder** in *DSM-IV-TR* and *DSM-5*, a SLEEP DISORDER characterized by the repeated occurrence of frightening dreams that lead to awakenings from sleep. It was formerly known as **dream anxiety disorder**. See PARASOMNIA.

**night terror** see SLEEP TERROR DISORDER.

**nigrostriatal tract** the neural pathway that extends from the SUBSTANTIA NIGRA to the striatum of the BASAL GANGLIA. It contains DOPAMINERGIC neurons and is associated with the production of voluntary movement.

**nihilism** *n.* 1. the delusion of nonexistence; a fixed belief



that the mind, body, or the world at large—or parts thereof—no longer exists. Also called **delusion of negation**;  **nihilistic delusion**. **2.** the belief that existence is without meaning or value. —**nihilistic** *adj.*

**nilutamide** *n.* see ANTIANDROGEN.

**NIMH** abbreviation for NATIONAL INSTITUTE OF MENTAL HEALTH.

**n-Int** abbreviation for NEED FOR INTIMACY.

**ninth cranial nerve** see GLOSSOPHARYNGEAL NERVE.

**nirvana** *n.* **1.** in HINDUISM, a state of liberation or illumination, characterized by the extinction of individual consciousness as it merges into *brahman*, the eternal Absolute. Nirvana frees one from suffering, death and rebirth, and all other worldly bonds. **2.** in BUDDHISM, the state of perfect blessedness that is the goal of all spiritual practice. **3.** in general use, any place or condition of great peace or bliss. [Sanskrit, literally: “extinction”]

**nirvana principle** in classical psychoanalytic theory, the tendency of all INSTINCTS and life processes to remove tension and seek the stability and equilibrium of the inorganic state—that is, death. This is the trend of the DEATH INSTINCT, which Sigmund FREUD believed to be universal.

**Nissl bodies** microscopic particles, consisting of granular endoplasmic reticulum and ribosomes, found in large numbers in the cell bodies of neurons. Nissl bodies can be stained by toluidine blue (**Nissl stain**), which allows measurement of cell-body size and the density of neurons in different regions of the nervous system. Also called **Nissl granules**; **Nissl substance**; **tigroid bodies**. [Franz Nissl (1860–1919), German neuropathologist]

**Nissl method** any one of certain techniques used to stain neurons for microscopic examination, especially the use of Nissl stain to reveal NISSL BODIES. [Franz Nissl]

**nisus** *n.* in the system of Gottfried Wilhelm LEIBNIZ, the inherent tendency in all MONADS to strive toward the perfect realization of their innate and appropriate ends. See also ENTELECHY. [Latin, literally: “effort”]

**Nitoman** *n.* a Canadian trade name for TETRABENAZINE.

**nitrazepam** *n.* a long-acting BENZODIAZEPINE with a HALF-LIFE of more than 24 hours, used as a hypnotic. Though nitrazepam has no active metabolic products, its lengthy half-life may cause unwanted accumulation with daily dosing. It is not currently marketed in the United States. Canadian trade name: **Mogadon**.

**nitric oxide** a compound present in numerous body tissues, where it has a variety of functions. It is synthesized in the body by the enzyme nitric oxide synthase from arginine, nicotinamide adenine dinucleotide phosphate (NADPH), and oxygen. In the brain and other parts of the central nervous system, nitric oxide functions as a neurotransmitter, or as an agent that influences neurotransmitters. In peripheral tissues, it is involved in the relaxation of smooth muscle and thus acts as a vasodilator, as a bronchodilator, and as a relaxant of smooth muscle in the penis and clitoris, being involved in erection and other components of the sexual response.

**nitrous oxide** an analgesic gas that is commonly used in outpatient dental procedures and as an adjunct in surgical anesthesia. It is also used as a propellant in aerosolized foods (e.g., whipped cream). In low doses, nitrous oxide produces sensations of giddiness, elation, and euphoria.

This property was apparent when it was initially synthesized in 1772 by British chemist Joseph Priestley (1733–1804), and nitrous oxide has long been known colloquially as **laughing gas**. Its euphoriant effects make nitrous oxide a popular inhalant in social settings. Also called **dinitrogen monoxide**.

**Nizoral** *n.* a trade name for KETOCONAZOLE.

**NK cell** abbreviation for NATURAL KILLER CELL.

**NLD** abbreviation for NONVERBAL LEARNING DISORDER.

**NLP** abbreviation for NEUROLINGUISTIC PROGRAMMING.

**nm** symbol for NANOMETER.

**NMDA** *N*-methyl-D-aspartate: an AGONIST that binds to a class of GLUTAMATE RECEPTORS that are both ligand-gated and voltage-sensitive (see NMDA RECEPTOR).

**NMDA receptor** a type of GLUTAMATE RECEPTOR that binds NMDA as well as glutamate. NMDA receptors are coupled to LIGAND-GATED ION CHANNELS and are also voltage-sensitive, which enables them to participate in a variety of information-processing operations at synapses where glutamate is the neurotransmitter. The drugs of abuse KETAMINE and PCP are antagonists at NMDA receptors, preventing the influx of calcium ions at CALCIUM CHANNELS, which may cause the hallucinogenic effects of these drugs. Excessive flow of calcium ions into the presynaptic neuron via the NMDA receptor is thought to contribute to glutamate toxicity. A hypothesis on the etiology of schizophrenia involves dysfunction of the NMDA glutamate receptor (see GLUTAMATE HYPOTHESIS). Compare AMPA RECEPTOR.

**N-methyl-D-aspartate** *n.* see NMDA.

**NMHA** abbreviation for National Mental Health Association. See MENTAL HEALTH AMERICA.

**NMR** abbreviation for NUCLEAR MAGNETIC RESONANCE.

**NNAT** abbreviation for NAGLIERI NONVERBAL ABILITY TEST.

**noble savage** a conceit positing that people from nonindustrial or nontechnological societies were the most noble of human beings because they were untouched by civilization, which was viewed as a degrading influence on human thought and behavior. Historically, the conceit is associated with ROMANTICISM. [proposed by French philosopher and author Jean-Jacques Rousseau (1712–1778)]

**nocebo** *n.* an adverse or otherwise unwanted physical or emotional symptom caused by the administration of a PLACEBO.

**No Child Left Behind Act (NCLB)** U.S. federal legislation enacted in 2001 with the intention of raising academic standards, closing achievement gaps, encouraging more school accountability, and offering to families and students more choices in the form of better schools. In order to receive federal educational funding, states are now required to administer standardized tests that measure progress toward achievement of these goals.

**nociceptin** *n.* see ENDOGENOUS OPIOID; OPIOID RECEPTOR.

**nociception** *n.* see PAIN PERCEPTION. —**nociceptive** *adj.*

**nociceptive reflex** a defensive reflex evoked by a painful stimulus or a stimulus that threatens damage to the organism.

**nociceptor** *n.* a sensory RECEPTOR that responds to stim-

uli that are generally painful or detrimental to the organism. Also called **pain receptor**.

**noctambulation** *n.* see SLEEPWALKING DISORDER.

**nocti- (noct-)** *combining form* night.

**noctiphilia (noctophilia)** *n.* see NYCTOPHILIA.

**nocturia** *n.* the need to urinate during the night. The condition may simply be the result of excessive fluid intake before going to sleep, but it can also be a sign of a disease of the heart, liver, or reproductive or urinary systems.

**nocturnal** *adj.* active or occurring during the dark period of the daily cycle. Compare DIURNAL.

**nocturnal emission** an involuntary ejaculation that occurs during a nocturnal dream, known popularly as a **wet dream**. Studies show that the majority of males experience a nocturnal emission before the age of 21. Orgasm as part of nocturnal dreams is rare among adolescent females but increases among mature females.

**nocturnal enuresis** see ENURESIS.

**nocturnal myoclonus** involuntary jerking of the limbs (MYOCLONUS) that occurs when a person is falling asleep. The involuntary spasms may occur repeatedly and with sufficient activity to awaken the person. Nocturnal myoclonus is not necessarily a sign of a neurological disorder.

**nodal behavior** in group psychotherapy, a period of increased activity, which may be interpersonally challenging, aggressive, or disorderly, followed by a relatively quiet period of **antinodal behavior**.

**nodal point** the point in the optical axis of the eye that connects locations in the visual field with their projections on the retina.

**node** *n.* **1.** a point in a graph, tree diagram, or the like at which lines intersect or branch. **2.** a single point or unit in an associative model of memory. Nodes typically represent a single concept or feature, are connected to other nodes (usually representing semantically related concepts and features) by links in an associative network, and may be activated or inhibited to varying degrees depending on the conditions. **3.** in artificial intelligence, see NEURAL NETWORK. —**nodal** *adj.*

**node of Ranvier** any of successive regularly spaced gaps in the MYELIN SHEATH surrounding an axon. The gaps permit the exchange of ions across the plasma membrane at those points, allowing the nerve impulse to leap from one node to the next in so-called SALTATORY CONDUCTION along the axon. [Louis A. **Ranvier** (1835–1922), French pathologist]

**noëgenesis** *n.* the production of new knowledge from sensory or cognitive experience. There are three laws of noëgenesis: (a) the apprehension of experience (by which new stimuli are encoded), (b) the EDUCTION of relations (by which the nature of relations between stimuli is inferred), and (c) the eduction of correlates (by which a relation previously inferred is applied in a new context). [proposed in 1923 by Charles SPEARMAN] —**noëgenetic** *adj.*

**noesis** *n.* **1.** in philosophy, the exercise of the higher reason or NOUS, especially in its role of apprehending truths that cannot be derived from experience. Compare DIANOIA. **2.** in psychology, the functioning of the intellectual or cognitive processes.

**noetic** *adj.* describing a state of knowledge or memory in which there is awareness of the known or remembered thing but not of one's personal experience in relation to that thing. **Noetic consciousness** is a kind of consciousness in which one is aware of facts, concepts, words, and meanings but not of any connection to one's own experience. Compare ANOETIC; AUTONOETIC. [defined by Endel TULVING]

**no excuse** in REALITY THERAPY, the concept that there are no acceptable reasons to condone irresponsible behavior or attribute it to another source. According to this concept, all behavior stems directly from the client and the client is therefore completely and solely responsible for his or her behavior. [devised by U.S. psychiatrist William Glasser (1925–2013)]

**N-of-1 design** see SINGLE-CASE DESIGN.

**N/OFG** abbreviation for nociceptin/orphanin FQ. See ENDOGENOUS OPIOID; OPIOID RECEPTOR.

**noise** *n.* **1.** any unwanted sound or, more generally, any unwanted disturbance (e.g., electrical noise). **2.** a random or aperiodic waveform whose properties are described statistically. There are many types of noise, which are distinguished by their spectral or statistical properties. **White noise** has equal energy at all frequencies; **broadband noise** has energy over a relatively wide frequency range (e.g., 50 Hz to 10 kHz for audition); **pink noise** has energy that is inversely proportional to frequency; and **Gaussian noise** has instantaneous values that are determined according to a normal probability density function. **3.** anything that interferes with, obscures, reduces, or otherwise adversely affects the clarity or precision of an ongoing process, such as the communication of a message or signal.

**noise abatement** the application of legislation or technology to reduce the level of noise pollution. Noise abatement may require the redesign of automobile or aircraft engines, ordinances that prohibit use of airports at night, or the routing of traffic away from residential areas. See also NOISE EFFECTS.

**noise dose** a percentage indicating the amount of noise to which a person is exposed in his or her working environment relative to permissible levels of noise exposure. It is used to determine points at which the employer must apply ENGINEERING CONTROLS or ADMINISTRATIVE CONTROLS.

**noise effects** physiological stress responses to noise, especially if it is prolonged or occurs during demanding cognitive or physical tasks. Noise interferes with the performance of complex tasks and can produce LEARNED HELPLESSNESS, prevent or disturb sleep, and—with provocation—heighten aggression. See also ENVIRONMENTAL STRESS.

**noise-induced hearing loss** hearing loss that develops over time due to continuous exposure to noise. See EXPOSURE DEAFNESS.

**noise pollution** any environmental noise (e.g., traffic sounds) that is unwanted or detrimental to one's health or welfare.

**nomadism** *n.* **1.** a pathological tendency to wander from place to place and repeatedly change one's residence and occupation, often giving rise to instability and social MALADJUSTMENT. In milder form, this tendency may be an attempt to escape from a distressing situation or from responsibility, but in extreme form, it may be associated with brain damage, epilepsy, intellectual disability, or psychosis. See also DROMOMANIA; PORIOMANIA. **2.** the lifestyle

of a group of people with no fixed residence, characterized by frequent movement from place to place, often in search of resources or in accordance with seasonal changes.

**nomifensine** *n.* an antidepressant that is structurally different from any in current use. It blocks the synaptic reuptake of norepinephrine and dopamine but not of serotonin. Due to severe, sometimes fatal, drug reactions, including acute hemolytic anemia, it was withdrawn worldwide in 1986. However, it is still used in research with nonhuman animals. Former U.S. trade name: **Merital**.

**nominal** *adj.* denoting a number that indicates membership in a category, such as coding political party affiliations with a 0 for Democrat, a 1 for Republican, and a 2 for Independent. A nominal value is not an indication of rank order or magnitude. Compare **CARDINAL**; **ORDINAL**.

**nominal aphasia** see **ANOMIC APHASIA**.

**nominal classification** see **CONCEPTUAL CLASSIFICATION**.

**nominal data** numerical values that represent membership in specific categories. For example, the category male could be labeled 0 and the category female labeled 1, with each person in the population of interest (e.g., a particular town) assigned the number corresponding to their sex. Nominal data are similar to **CATEGORICAL DATA**, and the two terms are often used interchangeably.

**nominal group** a presumptive, “in name only” group lacking the usual features of a group, such as interaction among members, shared goals, and **GROUP STRUCTURE**. Such groups are used in experimental studies of group productivity as controls for determining the influence of group interaction on performance.

**nominal group technique (NGT)** a structured technique of group problem solving that aims to improve the quality of group decisions by reducing the pressures on group members to conform. Individuals first state their ideas privately and anonymously, and these ideas are posted for discussion and clarification. The group votes anonymously on the ideas and then goes through another round of discussion and clarification, followed by another round of voting. The intent is to reach a consensus on the relative merits of the ideas generated by the group.

**nominalism** *n.* in medieval philosophy (see **SCHOLASTICISM**), the position that only concrete particulars have real substantial existence, while universals (i.e., general qualities, such as “redness” or “beauty”) are mere names with at most a mental existence. Compare **PLATONIC IDEALISM**; **REALISM**. —**nominalist** *n., adj.*

**nominal leader** an individual who is named to direct and guide a group but does not perform the activities associated with that role. Compare **FUNCTIONAL LEADER**.

**nominal realism** a young child’s conviction that the name of an object is not just a symbol but an intrinsic part of the object. The tendency toward this conviction also occurs in adults, as shown, for example, in one study in which adult participants refused food that was identified as toxic with a label they knew to be false. Also called **word realism**. See also **MAGICAL THINKING**. [first described by Jean **PIAGET**]

**nominal scale** a sequence of numbers that do not indicate order, magnitude, or a true zero point but rather identify items as belonging to mutually exclusive categories. For example, a nominal scale for the performance of a specific

group of people on a particular test might arbitrarily use the number 1 to denote pass and the number 2 to denote fail. Since the numbers represent category labels, they cannot be manipulated mathematically or otherwise quantitatively compared. A nominal scale is one of four types of measurement scale, the others being an **ORDINAL SCALE**, an **INTERVAL SCALE**, and a **RATIO SCALE**. See also **CATEGORICAL SCALE**.

**nominal stimulus** in stimulus–response experiments, the stimulus as defined and presented by the experimenter. This may be different from the **FUNCTIONAL STIMULUS** experienced by the organism.

**nominal variable** a variable whose possible values are unordered categories or labels. For example, choice of college major is a nominal variable.

**nominalive** *n.* the **CASE** of a noun, pronoun, or noun phrase that forms the **SUBJECT** of a clause or sentence. Compare **ACCUSATIVE**; **DATIVE**; **GENITIVE**.

**nominalive self** the self as knower of the self, rather than the self so known. In the psychology of William **JAMES**, the nominalive self, or “I,” is contrasted with the **EMPIRICAL SELF**, or “me.”

**nomological network** a conceptual network: a broadly integrative theoretical framework that identifies the key constructs associated with a phenomenon of interest and the associations among those constructs. For example, psychopathy is a complex notion involving a significant nomological network of knowledge and speculations about components, causes, correlates, and consequences as well as their interrelationships and means of measurement or evaluation.

**nomological validity** the degree to which a measure assesses the specific construct it is designed to assess, as formulated from the **NOMOLOGICAL NETWORK** for the construct being measured. See **CONSTRUCT VALIDITY**.

**nomology** *n.* **1.** the science or study of law and lawfulness. **2.** the branch of science concerned with the formulation of **NATURAL LAWS**, especially **CAUSAL LAWS**. A nomological approach is one that strives for causal explanations of phenomena, rather than merely classifying them. See **DEDUCTIVE-NOMOLOGICAL MODEL**. —**nomological** *adj.*

**nomothetic** *adj.* relating to the formulation of general laws as opposed to the study of an individual case. A **nomothetic approach** involves the study of groups of people or cases for the purpose of discovering those general and universally valid laws or principles that characterize the average person or case. Compare **IDIOGRAPHIC**.

**nomothetic score** a score on a dimension that is common to all people tested (e.g., general intelligence), which implicitly or explicitly compares the individual receiving the score with other individuals receiving a score.

**nonaccidental properties** visual characteristics of objects that are unaffected by the viewpoint of the observer and therefore provide useful cues for object recognition.

**nonactional verb** see **ACTIONAL VERB**.

**nonadaptive trait** a trait that has no specific value with respect to **NATURAL SELECTION**, being neither useful nor harmful for **REPRODUCTIVE SUCCESS**. In human beings, eye color, earlobe size, and the ability to curl one’s tongue are nonadaptive traits.

**nonadditive** *adj.* describing values or measurements that cannot be meaningfully summarized through addition because the resulting total does not correctly reflect the underlying properties of and associations between the component values. For example, if two variables *a* and *b* interact to influence another variable *y*, the addition of the separate effects of *a* and *b* will not equal the total effect since the contribution of the interaction needs to be included. Compare ADDITIVE.

**nonadherence** *n.* failure of an individual to follow a prescribed therapeutic regimen. Although nonadherence has traditionally been ascribed to oppositional behavior, it is more likely due to inadequate communication between the practitioner and the individual, physical or cognitive limitations that prevent the patient from following therapeutic recommendations (e.g., physical disabilities), or adverse effects that are not being adequately addressed. A primary aspect of HEALTH PSYCHOLOGY involves methods of reducing nonadherence and increasing adherence. Also called **noncompliance**.

**nonaggressive society** a culture or subculture whose goal is one of peaceful isolation from or coexistence with its neighbors. Socialization in such societies is marked by demphasis of achievement or power needs, disapproval of aggression, and affirmation of basic pleasures.

**nonassociative learning** a process in which an organism's behavior toward a specific stimulus changes over time in the absence of any evident link to (association with) consequences or other stimuli that would induce such change. Nonassociative learning is thus based on FREQUENCY. There are two major forms of nonassociative learning: HABITUATION and SENSITIZATION. Compare ASSO-CIATIVE LEARNING.

**nonattitude** *n.* an extremely weak attitude that has little persistence over time and minimal resistance to persuasion. Such attitudes have little impact on information processing and behavior. In extreme cases, nonattitudes may be reports of attitudes that reflect no meaningful evaluation of the ATTITUDE OBJECT. See also ATTITUDE STRENGTH. [originally proposed by U.S. political scientist Philip E. Converse (1928– )]

**noncardiac chest pain** recurrent chest pain that cannot be attributed to heart disease. It is commonly caused by problems with the esophagus, such as gastroesophageal reflux disease or esophageal spasm, or by musculoskeletal disorders, especially fibromyositis (muscle inflammation). Anxiety and panic attacks can also produce pain that resembles cardiac chest pain. See also PSEUDOANGINA.

**noncentral distribution** a DISTRIBUTION in which the NONCENTRALITY PARAMETER is not equal to zero: In statistical SIGNIFICANCE TESTING, such a distribution is obtained when the NULL HYPOTHESIS under test is false. The noncentral version of a distribution has a different mean, SKEWNESS, and VARIANCE (among other properties) than its corresponding **central distribution**, as well as a larger proportion of numbers beyond the CRITICAL VALUES. For example, the CHI-SQUARE DISTRIBUTION, F DISTRIBUTION, and T DISTRIBUTION all have corresponding noncentral versions signified by a noncentrality parameter that is not equal to zero.

**noncentrality parameter** in many PROBABILITY DISTRIBUTIONS used in SIGNIFICANCE TESTING, a PARAMETER that has a value different from zero when the NULL HYPOTHESIS under test is false. This parameter is important in

determining the POWER of a statistical procedure. See NON-CENTRAL DISTRIBUTION.

**noncommunicating hydrocephalus** HYDROCEPHALUS associated with blockage of the ventricular system, which interferes with the normal flow and reabsorption of cerebrospinal fluid. It is typically caused by a tumor. Also called **obstructive hydrocephalus**. Compare COMMUNICATING HYDROCEPHALUS.

**noncompetitive** *adj.* in pharmacology, referring to a drug that affects a neurotransmitter RECEPTOR while binding at a site other than that bound by the endogenous LI-GAND.

**noncompliance** *n.* see NONADHERENCE.

**non compos mentis** in law, mentally deficient or legally insane and therefore not responsible for one's conduct. See INCOMPETENCE; INSANITY. Compare COMPOS MENTIS.

**nonconformity** *n.* expressing opinions, making judgments, or performing actions that are inconsistent with those of other people or of the normative standards of a social group or situation. Nonconformity can reflect individuals' ignorance of the group's standards, an inability to reach those standards, independence (as when individuals retain their preferred position despite group pressure to change it), or the ANTICONFORMITY of individuals who deliberately disagree with others or act in atypical ways. Compare CONFORMITY.

**nonconscious** *adj.* **1.** describing that which is not explicitly in the contents of conscious experience. **2.** describing any cognitive process or event that is not available to introspection or report. **3.** a synonym for UNCONSCIOUS. Compare PRECONSCIOUS; SUBCONSCIOUS.

**nonconscious processes** cognitive processes that do not themselves reach consciousness, although they may have consciously experienced outcomes. Highly practiced automatisms (habit components) are an example.

**noncontingent reinforcement** the process or circumstances in which a stimulus known to be effective as a REINFORCER is presented independently of any particular behavior. Because contingencies may arise by accident (see ACCIDENTAL REINFORCEMENT), behavior-independent presentation of stimuli cannot guarantee that no contingency exists between a response and the stimuli. See REINFORCEMENT.

**nondeclarative memory** a collection of various forms of memory that operate automatically and accumulate information that is not accessible to conscious recollection. For instance, one can do something faster if one has done it before, even if one cannot recall the earlier performance. Nondeclarative memory includes PROCEDURAL LEARNING and PRIMING. It does not depend on the MEDIAL TEMPORAL LOBES and is preserved in individuals with MEDIAL TEMPORAL AMNESIA. Compare DECLARATIVE MEMORY.

**nondecremental conduction** the propagation of a nerve impulse along an axon in which the amplitude of the impulse is maintained as it progresses. Compare DECREMENTAL CONDUCTION. See also ALL-OR-NONE LAW.

**nondemand pleasuring** caressing a partner's body for the sensual pleasure involved, with no expectation of sexual arousal. In sex therapy, this practice, which excludes any touching of breasts or genitals, is often prescribed to eliminate performance anxiety: It allows a

couple with a sexual dysfunction to begin to enjoy physical relations with each other without the risk of experiencing another coital failure. Also called **nondemanding pleasuring**.

**nondirected discussion method** a discussion between two or more people about a specific topic without guidelines or restrictions or the intervention of a leader, whose only role is to assign the topic. The goal is to generate participant-directed discussion.

**nondirectional hypothesis** a hypothesis that one experimental group will differ from another without specification of the expected direction of the difference. For example, a researcher might hypothesize that college students will perform differently from elementary school students on a memory task without predicting which group of students will perform better. Also called **nondirectional alternative hypothesis; two-tailed (alternative) hypothesis**. Compare **DIRECTIONAL HYPOTHESIS**.

**nondirectional test** a statistical test of an experimental hypothesis that does not specify the expected direction of an effect or a relationship. Also called **nondirectional alternative hypothesis test; nondirectional hypothesis test; two-tailed test**. See **NONDIRECTIONAL HYPOTHESIS**. Compare **DIRECTIONAL TEST**.

**nondirective approach** an approach to psychotherapy and counseling in which the therapist or counselor establishes an encouraging atmosphere and clarifies the client's ideas rather than directing the process. The client leads the way by expressing his or her own feelings, defining his or her own problems, and interpreting his or her own behavior. This approach is a cornerstone of **CLIENT-CENTERED THERAPY**. [originally advocated by Carl ROGERS]

**nondirective counseling** see **CLIENT-CENTERED THERAPY**.

**nondirective interview** see **UNSTRUCTURED INTERVIEW**.

**nondirective play therapy** a form of **PLAY THERAPY** based on the principle that a child has the capacity to revise his or her own attitudes and behavior. The therapist provides a variety of play materials and either assumes a friendly, interested role without giving direct suggestions or interpretations or engages the child in conversation that focuses on the child's present feelings and present life situations. The therapist's accepting attitude encourages the child to try new and more appropriate ways of dealing with problems.

**nondirective teaching model** a person-oriented teaching model, associated with Carl ROGERS's approach, that is primarily concerned with helping a student develop the capacity for self-instruction while emphasizing self-discovery, self-understanding, and the realization of the student's innate potential.

**nondirective therapy** see **CLIENT-CENTERED THERAPY**.

**nondiscriminated avoidance** see **DISCRIMINATED AVOIDANCE**.

**nondisjunction** *n.* the failure of pairs of chromosomes to separate during cell division, with the result that both chromosomes move to the nucleus of one daughter cell.

**non-Duchenne smile** see **DUCHENNE SMILE**.

**nonepileptic seizure (NES)** an episode that resembles an epileptic seizure but is not produced by an abnormal electrical discharge in the brain. According to the Epilepsy

Foundation, such seizures may be classified as **physiologic nonepileptic seizures**, which are associated with metabolic disturbances (e.g., changes in heart rhythm or sudden drops in blood pressure) and include **SYNCOPE** and **TRANSIENT ISCHEMIC ATTACKS**, or as **PSYCHOGENIC NONEPILEPTIC SEIZURES**. Nonepileptic seizures are also called **nonepileptic events** (or **attacks**), **pseudoseizures**, or **pseudoepilepsy**, although use of the latter two terms is now discouraged.

**nonequivalent-groups design** a **QUASI-EXPERIMENTAL DESIGN** in which the responses of a treatment group and a control group are compared on measures collected at the beginning and end of the research. In psychology and other social sciences, these designs often involve self-selection, in which the members of the treatment group are those who volunteer or otherwise seek the treatment whereas the comparison group members do not. Since participants are not assigned to conditions at random, the two groups are likely to exhibit preexisting differences on both measured and unmeasured factors that must be taken into account during statistical analyses. Also called **nonequivalent comparison-group design; nonequivalent control-group design**.

**nonexperimental** *adj.* denoting a research project that is lacking manipulation of **INDEPENDENT VARIABLES** by a researcher or **RANDOM ASSIGNMENT** of participants to treatment conditions, as in **OBSERVATIONAL STUDIES** and **QUASI-EXPERIMENTAL DESIGNS**.

**nonexperimental research** see **QUASI-EXPERIMENTAL RESEARCH**.

**nonfluency** *n.* a type of speech that involves disturbances such as dysprosody (altered speech rhythms or intonation), dysarthria (impaired articulation), and often agrammatism (deviation from grammatical rules).

**nonfluent aphasia** see **APHASIA**.

**nongenetic inheritance** the transmission of behavioral or physiological functions between generations without any direct genetic basis. For example, because dominant female macaques intervene more frequently and successfully on behalf of their offspring than do subordinate females, the offspring inherit the status of their female parents. The type of maternal care a young rodent or monkey receives can lead to permanent physiological and neurological changes that affect its own parental behavior.

**nongonococcal urethritis (NGU)** an infection of the genital tract, usually sexually transmitted, caused by an agent other than the gonococcus (responsible for gonorrhea), often a strain of chlamydia. The symptoms typically include inflammation of the urethra and sometimes a puslike discharge (see **URETHRITIS**). Also called **nonspecific urethritis (NSU)**.

**nongraded school 1.** a school that groups students by academic achievement, mental and physical ability, or emotional development rather than by age or grade level. **2.** a place of learning that does not use letter or number grades to reflect the quality of a student's work.

**noninsulin-dependent diabetes mellitus (NIDDM)** see **DIABETES MELLITUS**.

**nonintentional learning** see **INCIDENTAL LEARNING**.

**noninvasive** *adj.* **1.** denoting procedures or tests that do not require puncture or incision of the skin or insertion of an instrument or device into the body for diagnosis or treatment. **2.** not capable of spreading from one tissue to

another, as in the case of a benign tumor. Compare INVASIVE.

**nonjudgmental approach** in psychotherapy, the presentation or display of a neutral, noncritical attitude on the part of the therapist to encourage the client to give free expression to ideas and feelings. See also NEUTRALITY.

**nonlanguage test** see NONVERBAL TEST.

**nonlinear** *adj.* describing any relationship between two variables ( $x$  and  $y$ ) that cannot be expressed in the form  $y = a + bx$ , where  $a$  and  $b$  are numerical constants. The relationship therefore does not appear as a straight line when depicted graphically. Compare LINEAR.

**nonlinear model** any model that attempts to relate the values of an outcome or dependent variable to the explanatory or independent variables using an equation that involves exponents. Compare LINEAR MODEL.

**nonlinear regression** a procedure for analyzing the relationship between an INDEPENDENT VARIABLE ( $x$ ) and a DEPENDENT VARIABLE ( $y$ ) wherein the REGRESSION EQUATION involves exponential forms of  $x$ . That is, the changes in  $y$  are not consistent for unit changes in the  $x$  variable(s) but are a function of the particular values of  $x$ . For example, a nonlinear regression model is given by  $y = a + b_1x_1 + b_2x_2^2 + e$ , where  $a$  indicates the place where the line of BEST FIT crosses the  $y$ -axis,  $b_1$  indicates the number of units that  $y$  changes when  $x$  is changed by 1 point, and  $e$  is error. Also called **curvilinear regression**. Compare LINEAR REGRESSION. See REGRESSION ANALYSIS.

**nonlinear relationship** an association between two variables in which the direction and rate of change fluctuate. That is, the amount of change in a DEPENDENT VARIABLE ( $y$ ) varies as a function of the particular value or level of the INDEPENDENT VARIABLE ( $x$ ). Compare LINEAR RELATIONSHIP.

**nonlinear transformation** a TRANSFORMATION of a data set that uses a function to change the linear relationship between variables. For example, a **normalizing transformation** creates a new set of scores that approximate a NORMAL DISTRIBUTION from the original nonnormal data set, and a LOGARITHMIC TRANSFORMATION may be used to convert raw data into a form that more closely matches the ASSUMPTIONS required in particular statistical analyses. Compare LINEAR TRANSFORMATION.

**nonliterate** *adj.* 1. denoting a culture or social group that has not developed a written language. 2. see PRELITERATE.

**nonmetric** *adj.* describing data that are NOMINAL or ORDINAL, as opposed to INTERVAL DATA or RATIO DATA. Such data cannot be precisely quantified. Examples include *yes/no* answers or a list ranking individuals on some attribute.

**nonmonotonic logic** a mathematical reasoning system in which information previously considered correct can be revised and removed in the light of new information. This means that any other information believed to be correct on the basis of the removed information must also be reconsidered. The system is said to be nonmonotonic because information considered correct does not remain the same or grow larger with further reasoning. Nonmonotonic systems are often controlled by "belief revision" or "truth maintenance" algorithms.

**nonnormative** *adj.* not conforming to or not reflecting

an established NORM; more specifically, deviating from a specific standard of comparison for a person or group of people, particularly a standard determined by cultural ideals of how things ought to be. This general term is used in a variety of contexts, referring, for example, to socially deviant or otherwise distinct behavior, ordinary life events happening at unusual times (e.g., a 78-year-old man earning his bachelor's degree), or statistical results that do not reflect the standard of a measured group (i.e., values well above or below the mean or other measure of CENTRAL TENDENCY). Compare NORMATIVE.

**nonnutritive sucking** the sucking by infants of objects that do not provide milk (e.g., a thumb, pacifier), in order, for example, to induce calm or aid sleep. The SUCKING REFLEX thus plays a part in the development of emotional control and self-regulation. Nonnutritive sucking has been used in research studies as a way of inferring infant preferences, by observing differences in sucking rate as infants are presented with different stimuli.

**nonoffspring nursing** see ALLONURSING.

**nonovert appeal** in marketing and advertising, a technique in which the advertising message is presented by apparently ordinary people who make no obvious attempt to persuade. In nonovert appeals, consumers may be given the impression that they are "overhearing" an independent endorsement of a product. Nonovert appeals are commonly used in television **slice-of-life commercials**.

**nonparametric** *adj.* describing any analytic method that does not involve making ASSUMPTIONS about the data of interest. Compare PARAMETRIC.

**nonparametric regression** a form of REGRESSION ANALYSIS in which the relationship between an outcome or DEPENDENT VARIABLE and one or more predictors or INDEPENDENT VARIABLES is analyzed without the assistance of a preexisting model. In contrast to traditional regression, in which the structure of the REGRESSION EQUATION is known and only the REGRESSION COEFFICIENTS are estimated from the data set, nonparametric regression requires that both the equation and coefficients be determined from the data.

**nonparametric statistics** statistical procedures in which the nature of the data being analyzed is such that certain common assumptions about the distribution of the attribute(s) in the population being tested (e.g., normality, homogeneity of variance) are not necessary or applicable. Compare PARAMETRIC STATISTICS.

**nonparametric test** a type of HYPOTHESIS TEST that does not make any assumptions (e.g., of normality or homogeneity of variance) about the population of interest. Nonparametric tests generally are used in situations involving NOMINAL or ORDINAL data. Also called **distribution-free test**; **nonparametric hypothesis test**. Compare PARAMETRIC TEST.

**nonprescription drug** see OVER-THE-COUNTER.

**nonprimary motor cortex** see MOTOR CORTEX.

**nonprimary sensory area** see SECONDARY SENSORY AREA.

**nonprobability sampling** nonrandom selection: any process of choosing a subset of participants or cases from a larger population in which it is impossible to precisely determine each unit's likelihood of being selected. Examples include CONVENIENCE SAMPLING and QUOTA SAMPLING. Nonprobability sampling makes it difficult to determine

how well the target population is represented by the subset, thus limiting the GENERALIZABILITY of findings. Compare PROBABILITY SAMPLING.

**nonrandomized clinical trial** a type of CLINICAL TRIAL in which the participants are not assigned by chance to the different treatment groups or interventions. For example, if participants choose whether to receive a new treatment or an existing standard of care, then the trial would be nonrandomized. Compare RANDOMIZED CLINICAL TRIAL.

**nonrandomized design** any of a large number of research designs in which participants or cases are not assigned to experimental conditions via a chance process. For example, FIELD EXPERIMENTS often are nonrandomized. Compare RANDOMIZED DESIGN.

**nonrapid-eye-movement sleep** see NREM SLEEP.

**nonrational** *adj.* **1.** incapable of being validated by reason. For example, in the opinion of most modern philosophers, it is impossible to confirm the proposition that God exists. A nonrational belief is not necessarily irrational. **2.** describing actions or behaviors that cannot easily be explained in terms of the rational self-interest of the actor.

**nonreactive measure** see UNOBTRUSIVE MEASURE.

**nonreassuring fetal status** see FETAL DISTRESS.

**nonrecursive model** a set of relationships in which a particular variable is sometimes a cause and sometimes an effect, thus suggesting there is a reciprocal relationship between that variable and others in the model. For example, high job satisfaction may lead to increased pay and job responsibility, which in turn may further enhance job satisfaction. Compare RECURSIVE MODEL.

**nonregulatory drive** any generalized state of arousal or motivation that serves functions that are not related to preserving physiological HOMEOSTASIS and thus are not necessary for the survival of the individual organism (e.g., sex, achievement). Also called **general drive**. Compare REGULATORY DRIVE.

**non-REM sleep** see NREM SLEEP.

**nonresponse** *n.* a participant's failure to answer one or more survey, questionnaire, or test items or to provide a measurement on some study variable. If data values are missing completely at random, then nonresponse does not distort results. In most research situations, however, nonresponse is not a purely random phenomenon; participants who do not answer questions differ in some important, systematic way from those who do answer. The basic method for compensating for such **nonresponse** (or **nonresponder**) **bias** involves estimating the probability that each sample case will become a respondent.

**nonresponse rate** see REFUSAL RATE.

**nonreversal shift** in DISCRIMINATIONS involving two alternatives, a change in contingencies such that stimuli that were irrelevant in the initial phase of training become the relevant stimuli in a later phase. For example, in initial training involving the presentation of squares, circles, and other shapes, white shapes might be designated correct and black ones incorrect. In a following condition, squares might be designated correct and circles incorrect. Compare REVERSAL SHIFT.

**nonседating antihistamine** see ANTIHISTAMINE.

**nonsense figure** a figure that appears to have no mean-

ing since it does not correspond to any common or familiar object and is not a recognizable geometric form, such as a circle or triangle.

**nonsense syllable** any three-letter nonword used in learning and memory research to study learning of items that do not already have meaning or associations with other information in memory. See also CONSONANT TRIGRAM. [introduced in 1885 by Hermann EBBINGHAUS]

**non sequitur** **1.** in logic, a conclusion that does not follow from the premises of an argument; this conclusion may be either true or false. **2.** in general usage, any statement that appears puzzlingly unrelated to previous statements. [Latin, literally: "it does not follow"]

**nonshared environment** in behavior genetic analyses, aspects of an environment that individuals living together (e.g., in a family household) do not share and that therefore cause them to become dissimilar to each other. Examples of nonshared environmental factors include different friends or teachers that siblings in the same household might have at school or elsewhere outside of the home. Also called **unshared environment**. Compare SHARED ENVIRONMENT.

**nonsignificant** *adj.* see NOT SIGNIFICANT.

**nonspecific effect** a result or consequence whose specific cause or precipitating factors are unknown. An example would be the effect on a patient of the belief that he or she has received medication or some other intervention when no true treatment has been given (see PLACEBO EFFECT).

**nonspecificity theory** see PATTERN THEORY.

**nonspecific urethritis (NSU)** see NONGONOCOCCAL URETHRITIS.

**nonspectral hue** see EXTRASPECTRAL HUE.

**nonstate theories of hypnosis** explanations of hypnosis in terms of psychological, physiological, and behavioral aspects of ordinary waking consciousness, rather than as a distinctive, altered state of consciousness. Compare STATE THEORIES OF HYPNOSIS.

**nonsteroidal anti-inflammatory drug** see NSAID.

**nonstriate visual cortex** the many regions of cortex that surround the STRIATE CORTEX and participate in the processing of visual stimuli beyond the simple analysis of features that occurs in striate cortex. The nonstriate visual cortex includes parietal regions associated with visuospatial functions, temporal regions important for object recognition, and cortical areas that contribute to eye movements. It is thus somewhat more extensive than PRE-STRIATE CORTEX.

**non-syphilitic interstitial keratitis** see COGAN'S SYNDROME.

**nontraditional education** **1.** an educational plan that does not conform to the accepted or customary ideas of an ordinary educational system and that may include innovative approaches to teaching, curriculum, grading, or degree requirements. **2.** an educational plan that allows an individual to gain credentials without going through the usual channels.

**nontraditional marriage** a marriage that deviates from the traditional patterns of marriage in a society. In the United States and western Europe, such marriages may

include those that permit the partners to have sexual relations with other people. Compare TRADITIONAL MARRIAGE.

**nonulcer dyspepsia** see DYSPEPSIA.

**nonverbal ability** the ability to understand and manipulate nonverbal stimuli, such as colors, patterns, and shapes.

**nonverbal auditory agnosia** see AUDITORY AGNOSIA.

**nonverbal auditory perception test** a test that evaluates nonverbal auditory skills, such as the analysis of rhythm and tone and the recognition of nonverbal sounds (e.g., bell, train, mooing cow).

**nonverbal behavior** actions that can indicate an individual's attitudes or feelings without speech. Nonverbal behavior can be apparent in facial expressions, gaze direction, INTERPERSONAL DISTANCE, posture and postural changes, and gestures. It serves a number of functions, including providing information to other people (if they can detect and understand the signals), regulating interactions among people, and revealing the degree of intimacy between those present. Nonverbal behavior is often used synonymously with NONVERBAL COMMUNICATION, despite the fact that nonverbal actions are not always intended for, or understood by, other people.

**nonverbal communication (NVC)** the act of conveying information without the use of words. Nonverbal communication occurs through facial expressions, gestures, body language, tone of voice, and other physical indications of mood, attitude, approbation, and so forth, some of which may require knowledge of the culture or subculture to understand. See also NONVERBAL BEHAVIOR.

**nonverbal intelligence** an expression of intelligence that does not require language. Nonverbal intelligence can be measured with tests such as RAVEN'S PROGRESSIVE MATRICES and the TEST OF NONVERBAL INTELLIGENCE.

**nonverbal leakage** see VERBAL LEAKAGE.

**nonverbal learning** the process of learning about nonverbal materials, such as pictures or drawings, odors, or nonlanguage sounds. Compare VERBAL LEARNING.

**nonverbal learning disorder (NLD)** a LEARNING DISORDER that is characterized by limited skills in critical thinking and deficits in processing nonverbal information. This affects a child's academic progress as well as other areas of functioning, which may include social competencies, visual-spatial abilities, motor coordination, and emotional functioning.

**nonverbal reinforcement** any form of NONVERBAL COMMUNICATION, such as a gesture, facial expression, or body movement, that increases the frequency of the behavior that immediately precedes it. For example, a parent's smile following a desired response from a child, such as saying "thank you," reinforces the child's behavior. See also SOCIAL REINFORCEMENT.

**nonverbal test** a test in which the questions or problems as well as the answers or solutions are not conveyed in words. Mazes and PERFORMANCE TESTS are examples. Also called **nonlanguage test**.

**nonverbal vocabulary test** a test of vocabulary that does not require a verbal response, such as a test in which the participant is required to point to a picture associated with a printed word. An example is the PEABODY PICTURE VOCABULARY TEST.

**non-Western therapies** alternatives or complements to traditional Western forms of and approaches to treatment that emphasize the body (e.g., acupuncture, yoga) and the interdependency of all beings and de-emphasize individualism and rigid autonomy. These therapies have typically developed outside of Europe and North America. See also COMPLEMENTARY AND ALTERNATIVE MEDICINE.

**non-zero-sum game** in GAME THEORY, a situation in which the rewards and costs experienced by all players do not balance (i.e., they add up to less than or more than zero). In such a situation, unlike a ZERO-SUM GAME, one player's gain is not necessarily another player's loss.

**noology** *n.* the science of the human mind (from Greek *nous*, "mind, reason"). See NOUS. [coined by Viktor E. FRANKL]

**Noonan syndrome** a genetic disorder that involves the skin, heart, gonads, and skeleton and is transmitted as an autosomal dominant trait. Affected individuals often have short stature, cardiovascular defects, and deafness. Intellectual development varies: Some have above-average intelligence, and most have normal intelligence, but a small percentage have special educational needs or intellectual disability. Male patients are seldom fertile. Also called **familial Turner syndrome; Ullrich-Noonan syndrome**. [reported in 1963 by Jacqueline Noonan (1928– ), U.S. pediatrician]

**nootropic** *n.* an obsolete name for COGNITIVE ENHANCER.

**noradrenergic** *adj.* responding to, releasing, or otherwise involving norepinephrine (noradrenaline). For example, a **noradrenergic neuron** is one that employs norepinephrine as a neurotransmitter.

**noradrenergic receptor** any of certain receptors in the central nervous system and sympathetic nervous system that bind and respond to norepinephrine (noradrenaline) or substances that mimic its action. See ADRENERGIC RECEPTOR.

**norepinephrine (NE)** *n.* a catecholamine NEUROTRANSMITTER and hormone produced mainly by brainstem nuclei and in the adrenal medulla. Also called **noradrenaline**.

**Norflex** *n.* a trade name for ORPHENADRINE.

**norm** *n.* **1.** a standard or range of values that represents the typical performance of a group or of an individual (of a certain age, for instance) against which comparisons can be made. **2.** a conversion of a raw score into a scaled score that is more easily interpretable, such as a percentile or an IQ score. —**normative** *adj.*

**normal** *adj.* relating to what is considered standard, average, typical, or healthy. This general meaning is applied in a variety of different contexts, including statistics (referring to scores that are within the usual or expected range), biology (referring to the absence of malformation or other pathology), and development (referring to progression and growth that are comparable to those seen in others of similar ages). However, the term is most often applied to behavior that conforms to a culturally accepted norm, especially as an indication that a person is mentally healthy and does not have a psychological disorder.

**normal distribution** a THEORETICAL DISTRIBUTION in which values pile up in the center at the MEAN and fall off into tails at either end. When plotted, it gives the familiar bell-shaped curve expected when variation about the mean value is random. The normal distribution has several pri-



mary characteristics: It is symmetrical, it has both upper and lower ASYMPTOTES, and its mean, MEDIAN, and MODE are the same value. Perhaps most important, however, fixed proportions of values fall within defined sections of the distribution. For example, 34.13% of values fall between the mean and one STANDARD DEVIATION *above* the mean, and a corresponding 34.13% of values fall between the mean of the distribution and one standard deviation *below* the mean. Many statistical models are based on the assumption that data follow a normal distribution. For example, it is reasonable to expect that human height follows a normal distribution with a mean of 5 feet and several inches, such that very few adults are less than 3 feet or greater than 7 feet tall. Also called **Gaussian distribution**; **normal curve**.

**normality** *n.* **1.** a broad concept that is roughly the equivalent of MENTAL HEALTH. Although there are no absolutes and there is considerable cultural variation, some flexible psychological and behavioral criteria can be suggested: (a) freedom from incapacitating internal conflicts; (b) the capacity to think and act in an organized and reasonably effective manner; (c) the ability to cope with the ordinary demands and problems of life; (d) freedom from extreme emotional distress, such as anxiety, despondency, and persistent upset; and (e) the absence of clear-cut symptoms of mental disorder, such as obsessions, phobias, confusion, and disorientation. **2.** in statistics, the condition in which a data set presents a NORMAL DISTRIBUTION of values.

**normalization principle** the concept that people with mental or physical disability should not be denied social and sexual relationships and participation in community life merely because of their disability. Social and sexual relationships can include a wide range of emotional and physical contacts, from simple friendship to sexual stimulation and satisfaction. Participation in community life includes engaging in typical everyday activities, such as work and recreation. See also SOCIAL ROLE VALORIZATION. [introduced in 1969 by Swedish psychologist Bengt Nirje (1924–2006)]

**normalize** *vb.* to apply a TRANSFORMATION to data to produce a new set of scores that approximately follow the NORMAL DISTRIBUTION.

**normal-pressure hydrocephalus (NPH)** HYDROCEPHALUS associated with ventricular enlargement but normal intracranial pressure. NPH is classically associated with the symptom triad of dementia, gait disturbances, and urinary incontinence. Most common in older adults, the condition frequently benefits from shunting procedures, though complications may occur.

**normal random variable** any RANDOM VARIABLE whose values are theoretically infinite but follow a NORMAL DISTRIBUTION that is centered around the MEAN for the population and that has a STANDARD DEVIATION matching that of the population. A STANDARD NORMAL VARIABLE is similar but has a mean of 0 and a standard deviation of 1.

**normal saline** see PHYSIOLOGICAL SALINE.

**normal science** a science at the stage of development when it is characterized by a PARADIGM consisting of universal agreement about the nature of the science and its practices, assumptions, and methods, as well as satisfaction with its empirical progress. Compare IMMATURE SCIENCE; PREPARADIGMATIC SCIENCE. See PARADIGM SHIFT; SCIENTIFIC

REVOLUTION. [proposed by U.S. philosopher of science Thomas Kuhn (1922–1996)]

**normal score** see STANDARDIZED SCORE.

**normal variable** see NORMAL RANDOM VARIABLE.

**Norman and Shallice model** see CONTROL OF ACTION MODEL. [Donald A. Norman (1935– ), U.S. cognitive scientist; Timothy Shallice (1940– ), British neuropsychologist]

**normative** *adj.* relating to a NORM: pertaining to a particular standard of comparison for a person or group of people, often as determined by cultural ideals regarding behavior, achievements or abilities, and other concerns. For example, a **normative life event** such as marriage or the birth of a child is expected to occur during a similar period within the lifespans of many individuals, and **normative data** reflect group averages with regard to particular variables or factors, such as the scores of females on a specific test or the language skills of 10-year-olds. Compare NONNORMATIVE.

**normative crisis** see MATURATIONAL CRISIS.

**normative ethics** see ETHICS.

**normative influence** the personal and interpersonal processes that cause individuals to feel, think, and act in ways that are consistent with SOCIAL NORMS, standards, and conventions. Normative influence is partly personal, because individuals who have internalized their group's norms will strive to act in ways that are consistent with those norms. It is also interpersonal, because groups place direct and indirect pressure on members to comply with their norms. Those who consistently violate the group's norms are often subjected to negative interpersonal consequences (e.g., ostracism, ridicule, punishment), whereas those who conform are typically rewarded. Also called **normative social influence**. Compare INFORMATIONAL INFLUENCE; INTERPERSONAL INFLUENCE.

**normative male alexithymia** a subclinical form of ALEXITHYMIA found in boys and men reared to conform to traditional masculine norms that emphasize toughness, teamwork, stoicism, and competition and that discourage the expression of vulnerable emotions. [proposed in 1992 by U.S. clinical psychologist Ronald F. Levant (1942– )]

**normative-reeducative strategy** in social psychology, the idea that societal change should be based on active reeducation of people within the framework of their cultural milieu. Normative-reeducative strategy holds that a program for social change based only on rational appeal is inadequate because behavioral patterns are largely determined by traditional attitudes and cultural norms. See also EMPIRICAL-RATIONAL STRATEGY; POWER-COERCIVE STRATEGY.

**normative research** research conducted for the purpose of ascertaining NORMS.

**normative scale** any evaluative instrument on which the respondent provides ratings for a series of items or chooses scores to indicate his or her agreement with a series of statements. Unlike an IPSATIVE SCALE, there is no requirement for these scores to sum to a particular total (e.g., 100%). For example, a supervisor using a normative scale to assess an employee's job performance might be asked to choose a number from 1 to 5 to indicate how well the employee performed in each of several areas, such as communication, timekeeping, and quality of work. The scores

given in any area would not be affected by those given in any of the others (e.g., the supervisor could award all 5s or all 1s if he or she thought this was merited).

**normative science** a scientific approach concerned with establishing NORMS or typical or desirable values for behavior, education, health, or other cultural or societal factors. In contrast to **descriptive science**, which attempts to characterize behavior and other phenomena as they actually exist, normative science attempts to determine what they should be in order to satisfy various criteria.

**normative social influence** see NORMATIVE INFLUENCE.

**norm group** see STANDARDIZATION GROUP.

**norm of reaction** all possible phenotypic outcomes, or observable characteristics of an individual, that could theoretically result from a given genotype in relation to its environment. See GENE-ENVIRONMENT INTERACTION.

**normosplanchnic type** a constitutional body type that corresponds roughly to the ATHLETIC TYPE in KRETSCHEMER TYPOLOGY. [described by Italian physician Gicinto Viola (1870–1943)]

**normotensive** *adj.* describing individuals whose blood pressure is within the normal range for their age.

**normotype** *n.* a constitutional body type that is morphologically average (EUMORPHIC).

**norm-referenced test** any assessment in which scores are interpreted by comparison with a NORM, generally the average score obtained by members of a specified group. For example, a teacher might administer a norm-referenced reading test to the students in his or her classroom, with each person's score indicating how well that test taker reads relative to other examinees of that age. Thus, if a student obtains a score of 70% but the standard test score (norm) for those of the same age is 90%, then the student has done relatively poorly. See also CRITERION-REFERENCED TEST; DOMAIN-REFERENCED TEST.

**Norpramin** *n.* a trade name for DESIPRAMINE.

**Norrie disease** a type of congenital blindness that is inherited in an X-linked recessive pattern or, rarely, is caused by a spontaneous genetic mutation and almost always affects males. Progressive hearing loss is seen in about one third of cases, and more than half of affected individuals experience developmental delays in motor skills such as sitting up and walking. Additional problems associated with this disease are mild to moderate intellectual disability; psychosis; and abnormalities that interfere with breathing, circulation, excretion, or reproduction. [reported in 1927 by Gordon Norrie (1855–1941), Danish ophthalmologist]

**North American Society for the Psychology of Sport and Physical Activity (NASPSPA)** a multidisciplinary association of scholars from the behavioral sciences and related professions, with the goals of promoting the scientific study of human behavior in sport and physical activity, facilitating dissemination of scientific knowledge, and advancing the improvement of research and teaching in SPORT PSYCHOLOGY, MOTOR LEARNING, MOTOR CONTROL, and MOTOR DEVELOPMENT.

**Northern blot** a method of detecting a particular RNA fragment in a mixture, such as one derived from a tissue extract. It involves separating the various RNA molecules using GEL ELECTROPHORESIS, blotting the separated RNAs onto nitrocellulose, and then using a NUCLEOTIDE probe to

hybridize with, and highlight, the RNA fragment of interest. [named by analogy with SOUTHERN BLOT]

**nortriptyline** *n.* a TRICYCLIC ANTIDEPRESSANT, a so-called secondary tricyclic, that is the principal metabolic product of AMITRIPTYLINE. Although its clinical efficacy is the same as other tricyclics, nortriptyline and the other secondary tricyclic agent, DESIPRAMINE, were often preferred because they are less sedating and have fewer ANTI-CHOLINERGIC EFFECTS. A THERAPEUTIC WINDOW is thought to exist for nortriptyline: Although plasma levels do not always correlate with clinical effectiveness, optimum responses are thought to occur when serum levels of the drug are between 50 and 150 ng/ml. Plasma levels over 500 ng/ml are toxic. The availability of newer antidepressants that do not require therapeutic monitoring has led to a decline in its use. U.S. trade names: **Aventyl; Pamelor**.

**NOS** abbreviation for NOT OTHERWISE SPECIFIED.

**nose** *n.* the organ that contains the sensory tissue (about 600 mm<sup>2</sup>) that underlies olfactory sensitivity (see OLFAC-TORY EPITHELIUM). The major functions of the nose are to modulate the temperature and adjust the humidity of inspired air and to direct that air toward the sensory tissue in the nasal cavity.

**nos-** (**nos-**) *combining form* disease.

**nosocomial** *adj.* denoting or relating to a hospital-acquired infection that is unrelated to the patient's primary illness.

**nosogenesis** *n.* see PATHOGENESIS.

**nosological approach** a method or procedure that focuses on the naming and classifying of disorders, the identification of their PATHOGNOMONIC signs and symptoms, and their grouping into syndromes for diagnostic purposes. In psychology and psychiatry, the nosological approach contrasts with the PSYCHODYNAMIC APPROACH, which emphasizes causal factors.

**nosology** *n.* the scientific study and classification of diseases and disorders, both mental and physical. See also PSYCHIATRIC CLASSIFICATION. —**nosological** *adj.*

**nosomania** *n.* a rarely used term for an unfounded, abnormal belief that one is suffering from a particular disease. See HYPOCHONDRIASIS.

**nostalgia** *n.* **1.** a longing to return to an earlier period or condition of life recalled as being better than the present in some way. **2.** a longing to return to a place to which one feels emotionally bound (e.g., home or a native land). See also HOMESICKNESS. —**nostalgic** *adj.*

**no-suicide contract** a specific agreement made between a therapist and a client who is a suicide risk that the client will not take his or her own life. The therapist often establishes this agreement as an intermediary measure (e.g., until the next therapy session). See also CONTRACT.

**not guilty by reason of insanity (NGRI)** **1.** a final judgment made in a court of law that the defendant has been found to lack the mental capacity to be held criminally responsible for his or her actions. See CRIMINAL RESPONSIBILITY; INSANITY. **2.** a plea entered for a defendant in a criminal trial indicating that he or she is NON COMPOS MENTIS and thus not responsible for the crime that he or she is charged with committing.

**nothingness** *n.* in EXISTENTIALISM, the void associated with the belief that nothing structures existence. Within

this theoretical framework, the nothingness or meaninglessness of human existence is thought to be the primary cause of EXISTENTIAL ANXIETY or anguish.

**Nothnagel's acroparesthesia** see ACROPARESTHESIA. [Carl Wilhelm Hermann **Nothnagel** (1841–1905), German neurologist]

**not me** in the SELF-SYSTEM theory of Harry Stack SULLIVAN, the part of the personified self that is based on past interpersonal experiences evoking overwhelming anxiety, dread, and horror and that may lead to nightmares, emotional crises, and schizophrenic reactions. Compare BAD ME; GOOD ME.

**not otherwise specified (NOS)** in *DSM-IV-TR*, denoting a broad-based diagnostic category chosen when the patient's problems seem to fall into a particular family of disorders (e.g., depressive disorders, anxiety disorders) but do not precisely meet the criteria established for specific diagnoses within that family. *DSM-5* has replaced this designation with two alternatives—either *other specified disorder* or *unspecified disorder*—for clinicians to use when describing a patient whose presenting symptoms do not meet formal criteria for a specific diagnosis; for example, a clinician may describe an individual as having an “unspecified depressive disorder.”

**no-treatment control group** a CONTROL GROUP whose members are not exposed to any experimental manipulation or intervention, thus serving as a neutral comparison for study groups receiving the treatment under investigation. For example, a researcher investigating the effectiveness of a new antidepressant might divide participants into a treatment group that receives the new medication and a separate no-treatment control group that receives no medication whatsoever, and then compare the outcomes of each group to identify any significant differences. In contrast, an ordinary control group may be administered some standard treatment instead of the experimental one.

**not significant (NS)** denoting a result from a statistical hypothesis-testing procedure that does not allow the researcher to conclude that differences in the data obtained for different samples are meaningful and legitimate. In other words, a result that is not significant does not permit the rejection of the NULL HYPOTHESIS; any observed differences are considered to be due to chance or random factors. Also called **nonsignificant**.

**noumenon** *n.* (*pl.* **noumena**) in the philosophy of Immanuel KANT, a thing in itself as contrasted with a thing known through the senses and human understanding (see PHENOMENON). Although the noumena are the causes of one's experience, they can never themselves be experienced, as they lie outside time and space; nor can they be apprehended by speculative reason, because the general concepts of quantity, quality, relation, and so forth apply only to phenomena. The ideas of *God*, *freedom*, and *immortality* belong to the noumenal realm but are accessible to human beings through their experience as moral agents. —**noumenal** *adj.*

**nous** *n.* in classical Greek philosophy, reason or intellect. PLATO considered nous to be the highest form of reason, permitting the apprehension of the fundamental and unchanging principles of reality. ARISTOTLE likewise distinguished between nous, which enables understanding of the essential and nonaccidental, and the knowledge gained from experience, which enables understanding of the tem-

porary and contingent. In later Platonic and Neoplatonic thought, nous was sometimes identified with the rational principle governing the universe itself (see NEOPLATONISM).

**novel antipsychotic** see ANTIPSYCHOTIC; ATYPICAL ANTIPSYCHOTIC.

**novelty** *n.* the quality of being new and unusual. It is one of the major determining factors directing attention. The attraction to novelty has been shown to begin as early as 1 year of age; for example, when infants are shown pictures of visual patterns, they will stare longer at a new pattern than at a pattern they have already seen. In consumer behavior, the attraction to novelty is manifested as a desire for a change, even in the absence of dissatisfaction with the present situation. For example, despite satisfaction with a particular product, many consumers will switch to a different brand just because it is new.

**novelty preference task** a task in which an infant is shown a new object simultaneously with a familiar one. It is used in studies of infant cognition, based on the fact that infants will visually inspect a new object in preference to looking at a familiar object. The duration of the infant's visual gaze is used to quantify attention, surprise, and novelty versus familiarity. This preference has also been called the **discrepancy principle**.

**novelty seeking 1**, a personality trait characterized by a strong interest in having new experiences; it is often associated with risk-taking behavior, and hence the term may be used synonymously with SENSATION SEEKING. It is also increasingly the preferred term for NEOPHILIA. **2**, see CLONINGER'S PSYCHOBIOLOGICAL MODEL OF PERSONALITY; TEMPERAMENT AND CHARACTER INVENTORY.

**noxious stimulus** an aversive stimulus that can serve as a negative reinforcer of behavior, in severe cases because it causes pain or damage to the experiencing organism and in lesser cases because it is unpleasant.

**NPC** abbreviation for NEURAL PROGENITOR CELL.

**NPDB** abbreviation for NATIONAL PRACTITIONER DATA BANK.

**NPH** abbreviation for NORMAL-PRESSURE HYDROCEPHALUS.

**NPI** abbreviation for NARCISSISTIC PERSONALITY INVENTORY.

**n-Pow** abbreviation for NEED FOR POWER.

**NPTA** abbreviation for National Parent Teachers Association. See PARENT TEACHERS ASSOCIATION.

**NREM sleep** *nonrapid-eye-movement* sleep: four SLEEP STAGES in which there is an absence of RAPID EYE MOVEMENT (REM) and dreams are relatively uncommon (and usually cannot be recalled upon awakening). The increasing appearance of DELTA WAVES, particularly in Stages 3 and 4, is another prominent index of NREM sleep. Also called **non-REM sleep**; **synchronized sleep**. Compare REM SLEEP.

**NSAID** *nonsteroidal anti-inflammatory drug*: any of a large class of analgesic and anti-inflammatory agents that includes ASPIRIN, ibuprofen, naproxen, and many others. They achieve their effects by blocking the synthesis of PROSTAGLANDINS involved in inflammation and the pain response. Concurrent administration of NSAIDs and LITHIUM may result in increased serum levels of lithium.

**NSF** abbreviation for NATIONAL SCIENCE FOUNDATION.

**NST** abbreviation for nucleus of the solitary tract. See SOLITARY NUCLEUS.

**NSU** abbreviation for nonspecific urethritis. See NONGONOCOCCAL URETHRITIS.

**nubile** *adj.* **1.** describing a girl or young woman who is of marriageable age, ready for marriage, or going through puberty. **2.** describing a sexually attractive young woman. —**nubility** *n.*

**nuchal rigidity** rigidity along the back of the neck, which can be associated with injury or brain disease.

**nuclear complex** **1.** a set of interconnected nuclei in parts of the brain, as in the ventroposterior nuclear complex of the thalamus (see VENTROPOSTERIOR NUCLEUS). **2.** a central conflict or problem that is rooted in infancy, such as feelings of inferiority (according to Alfred ADLER) or the OEDIPUS COMPLEX (according to Sigmund FREUD).

**nuclear envelope** see NUCLEOPLASM.

**nuclear family** a family unit consisting of two parents and their dependent children (whether biological or adopted). With various modifications, the nuclear family has been and remains the norm in developed Western societies. Compare EXTENDED FAMILY; PERMEABLE FAMILY.

**nuclear imaging** imaging that involves scanning for emissions from radioactive isotopes injected into the body. Techniques include POSITRON EMISSION TOMOGRAPHY and SINGLE PHOTON EMISSION COMPUTED TOMOGRAPHY. These forms of scanning yield information not only about the anatomy of an organ but also about its functions; they are therefore valuable for medical diagnosis and research. See also BRAIN IMAGING.

**nuclear magnetic resonance (NMR)** the response of atomic nuclei to changes in a strong magnetic field. The atoms give off weak electric signals, which can be recorded by detectors placed around the body and used for imaging parts of the body, including the brain. See BRAIN IMAGING; MAGNETIC RESONANCE IMAGING.

**nuclear schizophrenia** a type of schizophrenia in which the defining features, including social inadequacy and withdrawal, blunted affect, and feelings of DEPERSONALIZATION and DEREALIZATION, are highly similar to those described by Emil KRAEPELIN for DEMENTIA PRAECOX. It is of early, insidious onset and is associated with a degenerative, irreversible course and poor prognosis. This term is often used interchangeably with PROCESS SCHIZOPHRENIA. Also called **true schizophrenia**; **typical schizophrenia**. Compare SCHIZOPHRENIFORM PSYCHOSIS. [proposed in the late 1930s by Norwegian psychiatrist Gabriel Langfeldt (1895–1983)]

**Nuclear Surety Personnel Reliability Program** a special assessment program to achieve safety consistent with operational readiness and to minimize the effects of accidents, incidents, and deficiencies in handling nuclear weapons. At least two authorized people must be present whenever a task is performed with a nuclear weapon. Individuals qualified under the program are trained to perform these duties and to make the appropriate judgments.

**nuclear warfare** the use of nuclear weapons in combat, which causes enormous destruction with potentially both physical and psychological effects on the survivors.

**nuclei** *pl. n.* see NUCLEUS.

**nucleic acid** a large molecule that consists of a chain of

NUCLEOTIDES. Nucleic acids are of two types, DNA and RNA, and are important constituents of living cells.

**nucleolus** *n. (pl. nucleoli)* a structure within a cell's NUCLEUS that is the site of assembly of RIBOSOMES. —**nucleolar** *adj.*

**nucleoplasm** *n.* the material contained within the NUCLEUS of a cell. It is bound by the **nuclear envelope**, which separates it from the CYTOPLASM.

**nucleotide** *n.* a compound consisting of a nitrogenous base, a sugar, and one or more phosphate groups. Nucleotides such as ATP are important in metabolism. The nucleic acids (DNA and RNA) comprise long chains of nucleotides (i.e., polynucleotides).

**nucleus** *n. (pl. nucleii)* **1.** a large membrane-bound compartment, found in the cells of nonbacterial organisms, that contains the bulk of the cell's genetic material in the form of chromosomes. **2.** in the central nervous system, a mass of CELL BODIES belonging to neurons with the same or related functions. Examples are the amygdaloid nuclei (see AMYGDALA), the basal nuclei (see BASAL GANGLIA), the thalamic nuclei (see THALAMUS), and the NUCLEUS ACCUMBENS. Compare GANGLION.

**nucleus accumbens** one of the largest of the septal nuclei (see SEPTAL AREA), which receives dopaminergic innervation from the VENTRAL TEGMENTAL AREA. Dopamine release in this region may mediate the reinforcing qualities of many activities, including drug abuse.

**nucleus basalis magnocellularis** see BASAL NUCLEUS OF MEYNERT.

**nucleus cuneatus** the NUCLEUS in the medulla oblongata that is the termination of the CUNEATE FASCICULUS in the dorsal columns of the spinal cord. Also called **cuneate nucleus**.

**nucleus gracilis** the NUCLEUS in the medulla oblongata that is the termination of the GRACILE FASCICULUS in the dorsal columns of the spinal cord. Also called **gracile nucleus**.

**nucleus of the raphe** see RAPHE NUCLEUS.

**nucleus of the solitary tract (NST)** see SOLITARY NUCLEUS.

**nuisance parameter** in statistical hypothesis testing, a population PARAMETER of secondary interest that must be accounted for in order to obtain an estimated value for a parameter of primary interest. For example, assume a researcher wishes to determine whether male and female schoolchildren differ in their mathematics ability. He or she might administer a math test to a sample of children at a particular school and use that data to estimate male and female means for all children. If, however, the researcher needed to calculate the variance of the scores before attempting to determine the means, the former would be a nuisance parameter.

**nuisance variable** a type of EXTRANEOUS VARIABLE that does not differ systematically across levels or conditions of the independent variable under investigation but whose variation nonetheless may contribute to an increase in experimental error. Participant characteristics and environmental conditions often are nuisance variables. For example, individuals in a learning study who are distracted by noise in a nearby room may not perform as well as they would otherwise.

**null distribution** in statistical testing, the PROBABILITY DISTRIBUTION of values for a particular test statistic that is obtained when the NULL HYPOTHESIS is true. For example, the F RATIO from an ANALYSIS OF VARIANCE follows the F DISTRIBUTION if the null hypothesis is correct. Also called **null hypothesis distribution**. Compare ALTERNATIVE HYPOTHESIS DISTRIBUTION.

**null finding** the situation in which the outcome of a statistical hypothesis-testing procedure indicates that there is no relationship, or no significant relationship, between experimental variables. Also called **null result**.

**null hypothesis** (NH; symbol:  $H_0$ ) a statement that a study will find no meaningful differences between the groups or conditions under investigation, such that there is no relationship among the variables of interest and that any variation in observed data is the result of chance or random processes. For example, if a researcher is investigating a new technique to improve the skills of children who have difficulty reading, the null hypothesis would predict no difference between the average reading performances of those children who receive the intervention and those who do not. The NH is contrasted with the ALTERNATIVE HYPOTHESIS, which is a prediction of a significant finding (e.g., a significant difference between sample means, a correlation that is significantly different from zero). Statistical procedures are applied to research data in an attempt to disprove or reject the NH at a predetermined SIGNIFICANCE LEVEL. See HYPOTHESIS TESTING.

**null hypothesis significance testing** (NHST) see SIGNIFICANCE TESTING.

**null result** see NULL FINDING.

**null set** see EMPTY SET.

**number** *n.* in linguistics, a grammatical classification of nouns, pronouns, and any words in AGREEMENT with them according to whether they are singular or plural (or in some languages, dual). In English, number is most commonly expressed by the plural noun ending *-s* (e.g., *boy*, *boys*) and in the inflection of the verb to agree with the number of the subject (e.g., *The boy runs*; *The boys run*).

**number-completion test** an intelligence test, or a component of one, in which the subject is required to supply a missing item in a series of numbers or to continue the series. A component of such a test might be: 6, 9, 13, 18, \_\_\_\_ (the next number is 24).

**number factor** an intelligence factor that is measured by tests of ability to handle numerical problems. See FACTOR THEORY OF INTELLIGENCE; PRIMARY ABILITY.

**numbsense** *n.* the ability of some people who have lost feeling in part or all of their body to respond to tactile stimuli in the insensible area. Such individuals insist that they are not aware of any tactile sensations but can nevertheless discriminate between stimuli and point to where they have been presented. See also BLINDSIGHT; DEAF HEARING.

**numerical ability** (N) one of Louis L. THURSTONE's seven PRIMARY ABILITIES. Thurstone measured this ability with arithmetic computation problems and relatively simple word problems.

**numerical competence** the ability of some nonhuman animals to identify the cardinal numbers associated with differing quantities of objects and to arrange these numbers in correct order. Some parrots and chimpanzees can count the number of items presented to them, and

some can rank numbers, as in the ascending sequence 1, 5, 8.

**numerical variable** see QUANTITATIVE VARIABLE.

**numerology** *n.* the study of the significance of numbers beyond their numeric value; that is, the mystical or OCCULT meaning of numbers. For example, the date of someone's birth or a figure derived from the letters of his or her name may be interpreted in terms of its supposed influence on that person's character and future. See also GEMATRIA. —**numerological** *adj.* —**numerologist** *n.*

**numerosity perception** the perception of number (i.e., of constituent elements or of separate objects) by means of visual, auditory, or other sensory systems. See SUBITIZE.

**Nuremberg code** a set of 10 guidelines for conducting research with human participants that was established in 1949 following public discovery of the atrocities committed by Nazi scientists during World War II. The Nuremberg code introduced several important principles, including INFORMED CONSENT and the right of individuals to withdraw participation at any time. See INSTITUTIONAL REVIEW BOARD; RESEARCH ETHICS.

**nurse practitioner** a REGISTERED NURSE who has undergone extensive postgraduate training (often in a specialty area, such as internal medicine or pediatrics) and is licensed to perform some of the activities of a physician, including the prescription of medicine. Nurse practitioners generally function under the supervision of physicians but not in their presence.

**nursery school** see SCHOOL READINESS.

**nurse's aide** a person who works in a hospital or nursing home, has completed at least a brief course of health care training, and assists nursing staff in providing care for patients. Also called **nurse's assistant**.

**nursing** *n.* **1.** a health care profession that focuses on the protection and promotion of health through the alleviation and treatment of illness, injury, disease, and physical suffering. **Nurses** practice in a variety of contexts, including hospitals, nursing and independent-living homes, schools, workplaces, and community centers, among others. In the United States, nurses must graduate from a state-approved school of nursing (a 4-year university program, a 2-year associate degree program, or a 3-year diploma program) and pass a state licensing examination. See also LICENSED PRACTICAL NURSE; REGISTERED NURSE. **2.** the provision of nourishment by a female for her young offspring until they are capable of obtaining their own food. Nursing in mammals (including humans, in whom it is called **breast-feeding**) primarily involves the secretion of milk from the MAMMARY GLANDS, as stimulated by the hormones PROLACTIN and OXYTOCIN. Other vertebrates exhibit different forms of nursing behavior. For example, some birds produce a milklike substance (crop milk) within their digestive system that is regurgitated to feed young chicks. The length of the nursing period varies across animals, ranging from mere days (e.g., Sprague-Dawley rats) to several years (e.g., bottlenose dolphins). Regardless of its form or duration, however, successful nursing is critical to survival and often depends on maternally emitted odorants (mammary pheromones) to enable the young to locate the nipple and initiate suckling.

**nursing home** a LONG-TERM CARE FACILITY that provides 24-hour nursing care and supportive services for people

with chronic disability or illness, particularly older people who have mobility, eating, and other self-care problems.

**nurturance** *n.* **1.** the provision of affectionate attention, protection, and encouragement to others. **2.** the need or tendency to provide such nurturance.

**nurture** **1.** *n.* the totality of environmental factors that influence the development and behavior of a person, particularly sociocultural and ecological factors such as family attributes, parental child-rearing practices, and economic status. Compare NATURE. See also NATURE–NURTURE. **2.** *vb.* to provide NURTURANCE.

**nutmeg** *n.* the seed of the trees *Myristica acuminata* and *M. fragrans*, which are indigenous to the Moluccas (Indonesia) and cultivated in South America, the Philippines, and the West Indies. It has a history of folk use as a remedy for stomach and gastrointestinal complaints. Nutmeg has volatile oils containing elemecin, myristicin, and other active ingredients that in sufficient doses produce intoxicating effects, some of which have been compared to those produced by CANNABIS. In larger doses, nutmeg is poisonous; signs of toxicity include abnormally dilated or contracted pupils, hallucinations, severe nausea and vomiting, and rapid heartbeat. See also MACE.

**nutrient** *n.* any substance required as part of the diet for growth, maintenance, and repair of the body's tissues or as a source of energy. Nutrients include CARBOHYDRATES, fats (see FATTY ACID), PROTEINS (see also AMINO ACID), VITAMINS, and some minerals (e.g., calcium, sodium, potassium).

**nutritional disorder** any medical or psychological condition that results from MALNUTRITION. Such disorders include obesity and vitamin deficiency disorders. See also EATING DISORDER.

**Nuvigil** *n.* a trade name for armodafinil. See MODAFINIL.

**nux vomica** the seed of a plant, *Strychnos nux vomica*,

that grows in tropical Asia and has been used as an emetic (the name means literally “a nut that causes vomiting”). Nux vomica contains two substances, STRYCHNINE and BRUCINE, which are CNS STIMULANTS and highly poisonous, causing powerful, painful convulsions and eventually death from paralysis of respiratory muscles. In low doses, nux vomica increases glandular secretion in the gastrointestinal tract, and it has been used as a homeopathic remedy to stimulate digestion and treat a variety of gastrointestinal conditions.

**NVC** abbreviation for NONVERBAL COMMUNICATION.

**NVD** abbreviation for nausea, vomiting, and diarrhea.

**nyakwana** *n.* see EPENA.

**nyctalopia** *n.* see NIGHT BLINDNESS.

**nyctophilia** *n.* a strong preference for darkness or night. Also called **noctiphilia**; **noctophilia**; **scotophilia**.

**nympholepsy** **1.** a type of PEDOPHILIA in which the individual has a strong preference or obsessive desire for young girls who are sexually precocious (**nymphets**: a word coined by Vladimir Nabokov in his 1955 novel *Lolita*). Also called **Lolita complex**. **2.** a mania or frenzy, especially of an erotic nature, characterized by a desire for some unattainable ideal. The name is derived from myths in which an individual glimpses a nymph and becomes possessed by a demonic frenzy in pursuit of her.

**nymphomania** *n.* in females, excessive or uncontrollable desire for sexual stimulation and gratification. The word is often used loosely to denote a high degree of sexuality in a woman, reflecting negative cultural attitudes toward female sexuality. —**nymphomaniac** *n., adj.*

**nystagmus** *n.* involuntary, rapid movement of the eyeballs. The eyeball motion may be rotatory, horizontal, vertical, or a mixture. See also PHYSIOLOGICAL NYSTAGMUS; VESTIBULAR NYSTAGMUS.

**O** in psychophysical testing, abbreviation for OBSERVER.

**OA** abbreviation for OVEREATERS ANONYMOUS.

**OAEs** abbreviation for OTOACOUSTIC EMISSIONS.

**O&M** abbreviation for orientation and mobility. See ORIENTATION AND MOBILITY TRAINING.

**Obamacare** *n.* see PATIENT PROTECTION AND AFFORDABLE CARE ACT.

**obedience** *n.* behavior in compliance with a direct command, often one issued by a person in a position of authority. Examples include a child who cleans his or her room when told to do so by a parent and a soldier who follows the orders of a superior officer. Obedience has the potential to be highly destructive and ethically questionable, however, as demonstrated in the BEHAVIORAL STUDY OF OBEDIENCE. See CONSTRUCTIVE OBEDIENCE; DESTRUCTIVE OBEDIENCE. —**obedient** *adj.*

**obesity** *n.* the condition of having excess body fat resulting in overweight, variously defined in terms of absolute weight, weight–height ratio (see BODY MASS INDEX), distribution of subcutaneous fat, and societal and aesthetic norms. The basic causes are genetic, environmental, behavioral, or some interaction of these. Overeating may have a psychological cause (see BINGE-EATING DISORDER; FOOD ADDICTION; NIGHT-EATING SYNDROME), but in some cases, it may be due to an organic disorder (see HYPERPHAGIA). Obesity predisposes one to heart disease, diabetes, and other serious medical conditions (see MORBID OBESITY), and obese individuals may develop emotional and psychological problems relating to BODY IMAGE. Therapeutic approaches to obesity include diets, exercise programs, nutritional education, drug therapy, BEHAVIOR MODIFICATION of eating patterns, hormonal treatment when indicated, group support, HYPNOTHERAPY, and PSYCHODYNAMIC PSYCHOTHERAPY focused on insight into the nonconscious purposes served by the individual's excessive food intake. Bariatric surgery, or gastrointestinal surgery to reduce nutrient intake and absorption in order to induce weight loss, may also be performed in individuals with morbid obesity. —**obese** *adj.*

**object** *n.* **1.** an entity in the environment (i.e., a thing, person, or condition) that acts as a stimulus and elicits a response from an organism; that is, a **stimulus object**. **2.** the focal TARGET of attention, perception, or some other process. **3.** the “other,” that is, any person or symbolic representation of a person that is not the self and toward whom behavior, cognitions, or affects are directed. **4.** in psychoanalytic theory, the person, thing, or part of the body through which an INSTINCT can achieve its aim of gratification. See OBJECT CATHEXIS; OBJECT RELATIONS. **5.** the person (real or imagined) who is loved by an individual's EGO; his or her LOVE OBJECT. **6.** in linguistics, a noun, pronoun, or complex noun that is governed by an active transitive verb or a preposition, such as *dinner* in *I ate dinner* or *I came after dinner*. Objects of verbs can be divided into **direct objects** (e.g., *cake* in *Mary ate the cake*) and **indirect objects** (e.g., *Mary* in *John gave Mary the cake*).

**Object Assembly test** a performance subtest in the WECHSLER ADULT INTELLIGENCE SCALE that accesses the ability of the participant to construct an object from component pieces that only fit together properly if joined in the correct sequence.

**object-based attention** a mode of visual attention operating primarily on objects rather than on spatial locations. Compare SPACE-BASED ATTENTION.

**object cathexis** in classical psychoanalytic theory, the investment of LIBIDO or PSYCHIC ENERGY in objects outside the self, such as a person, goal, idea, or activity. Also called **object libido**. See CATHEXIS.

**object choice** in psychoanalytic theory, the selection of a person toward whom LIBIDO or PSYCHIC ENERGY is directed. See ANACLITIC OBJECT CHOICE; NARCISSISTIC OBJECT CHOICE.

**object color** color attributed to a solid object, as opposed to a FILM COLOR, which has no object associated with it.

**object constancy** **1.** in OBJECT RELATIONS THEORY, the ability of an infant to maintain an attachment that is relatively independent of gratification or frustration, based on a cognitive capacity to conceive of a mother who exists when she is out of sight and who has positive attributes when she is unsatisfying. Thus, an infant becomes attached to the mother herself rather than to her tension-reducing ministrations; she comes to exist continuously for the infant and not only during instances of need satisfaction. This investment by an infant in a specific libidinal object indicates that he or she no longer finds people to be interchangeable. **2.** see PERCEPTUAL CONSTANCY.

**object display** a single display that uses a meaningful shape to present different types of information simultaneously. Object displays usually take the form of polygons, changes in the shape of which provide an indication of the status of the system (see EMERGENT FEATURE). Also called **configural display**.

**object identity** see IDENTITY.

**objectification** *n.* see REIFICATION.

**objective** **1.** *adj.* having verifiable existence in the external world, independently of any opinion or judgment. **2.** *adj.* impartial or uninfluenced by personal feelings, interpretations, or prejudices. Compare SUBJECTIVE. **3.** *n.* something that is to be obtained or worked toward. See AIM; GOAL. **4.** *n.* in linguistics, see ACCUSATIVE. **5.** *n.* the lens or lens system in an optical instrument, such as a microscope. Also called **object glass**; **objective lens**; **object lens**.

**objective anxiety** see REALISTIC ANXIETY.

**objective competitive situation** a situation in which one or more people evaluate the performance of an individual or team by comparing it either with the performance of another individual or team or with some standard of excellence.

**objective elaboration** the tendency to generate particular evaluative responses based on the strength of the AR-

GUMENTS contained in a message rather than on factors external to the arguments. See also BIASED ELABORATION; BIASING FACTOR; ELABORATION.

**objective indicator** a marker or other measure of an entity, condition, emotion, or behavior that is free of subjective bias; that is, it is not an opinion or rating but an independent measure. An objective indicator is generally viewed as more reliable than a subjective assessment.

**objective prior** see PRIOR DISTRIBUTION.

**objective psychology** an approach to psychology that focuses on measurement of behavioral processes or other observable phenomena. Compare SUBJECTIVE PSYCHOLOGY.

**objective psychotherapy** a treatment procedure developed primarily for use with institutionalized patients and patients with mild to moderate emotional disturbances. To reduce the subjectivity resulting from a personal relationship with the therapist, all therapeutic communication is carried out in writing. The patient answers written autobiographical questions, relates and comments on dreams, and reacts to assigned readings. In return, the therapist gives interpretations and points out underlying motivations in written memoranda, including a **memorandum as a whole**, which summarizes all the insights reached in the process. [developed by U.S. psychoanalyst Benjamin Karpman (1886–1962)]

**objective reality** the EXTERNAL WORLD of physical objects, events, and forces that can be observed, measured, and tested. See REALITY.

**objective reference** **1.** the activity or condition by which one term or concept is related to another or to objects in the world. **2.** the actual object or sensation that is perceived by the senses.

**objective responsibility** in the moral judgment typical of children under the age of 10, the idea that the rightness or wrongness of an act is based almost exclusively on its material result, without consideration of the individual's motives for doing it. For example, accidentally breaking five cups is worse than deliberately breaking one. Compare SUBJECTIVE RESPONSIBILITY. [proposed by Jean PIAGET]

**objective scoring** scoring a test by means of a key or formula, so that different scorers will arrive at the same score for the same set of responses. It is contrasted with **subjective scoring**, in which the score depends on the scorer's opinion or interpretation of participant responses to items.

**objective self-awareness** a reflective state of self-focused attention in which a person evaluates himself or herself and attempts to attain correctness and consistency in beliefs and behaviors. This involves the viewing of oneself as a separate object, acknowledging limitations and the existing disparity between the ideal self and the actual self. Objective self-awareness is often a necessary part of SELF-REGULATION.

**objective set** a GESTALT PSYCHOLOGY factor in which the original grouping seen in a display based on objective factors, such as spatial location, will be maintained as the display changes and will continue to be seen when the grouping is objectively ambiguous. See PERCEPTUAL SET.

**objective test** a type of assessment instrument consisting of a set of items or questions that have specific correct answers (e.g., *How much is 2 + 2?*), such that no interpretation, judgment, or personal impressions are involved in

scoring. TRUE–FALSE TESTS are an example. In contrast, short-answer and essay examinations are SUBJECTIVE TESTS.

**objectivism** *n.* **1.** the position that judgments about the external world can be established as true or false independent of personal feelings, beliefs, and experiences. **2.** in ethics, the position that the ideals, such as “the good,” to which ethical propositions refer are real. Objectivism holds that ethical prescriptions do not reduce to mere statements of personal or cultural preference. Compare SUBJECTIVISM. —**objectivist** *n., adj.*

**objectivity** *n.* **1.** the tendency to base judgments and interpretations on external data rather than on subjective factors, such as personal feelings, beliefs, and experiences. **2.** a quality of a research study such that its hypotheses, choices of variables studied, measurements, techniques of control, and observations are as free from bias as possible. Compare SUBJECTIVITY.

**objectivity illusion** the tendency of people to see themselves as more impartial, more insightful, and less biased than others. For example, someone who likes a particular song might think that his or her opinion is based on objective reasoning and assume that the opinion of someone who dislikes the song is subjective and biased. Various studies have shown that people are aware of the objectivity illusion and can recognize it in others yet fail to identify the phenomenon in their own judgments. See also BIAS BLIND SPOT.

**object language** a type of computer programming language that emphasizes data rather than processes. Unlike imperative languages, with programs that consist primarily of commands to perform specified actions, object languages support programs that consist primarily of general commands that enable data objects to modify themselves (e.g., change their values).

**object learning** the process of making a connection or association between one aspect of an object (e.g., the color of dark chocolate) and another (e.g., the taste of dark chocolate).

**object libido** see OBJECT CATHEXIS.

**object-location memory** the ability to remember the location of objects in the environment (e.g., where one put one's car keys).

**object loss** in psychoanalytic theory, the actual loss of a person who has served as a GOOD OBJECT, which precedes INTROJECTION and is involved in SEPARATION ANXIETY. Anxiety about the possible loss of a good object begins with the infant's panic when separated from its mother. In this perspective, adult grief and mourning are related to object loss and separation anxiety in infancy and childhood, which often intensifies and complicates the grief reaction.

**object love** in psychoanalytic theory, love of a person other than the self. It is a function of the EGO and not the instincts, as in OBJECT CATHEXIS. See LOVE OBJECT.

**object of consciousness** **1.** the perceived object as distinct from the perceiver. The separation of observer and observed is criticized as artificial in some phenomenological philosophies (see PHENOMENOLOGY). In BUDDHISM and VEDANTA philosophy, there is a related notion that the distinction between the perceived object and the perceiving self is illusory. **2.** anything of which the mind is conscious, including perceptions, mental images, emotions, and so forth, as well as the observing ego, or “I,” of subjective experience. Compare SUBJECT OF CONSCIOUSNESS.



**object of instinct** in classical psychoanalytic theory, that which is sought (the **external aim**, such as a person, object, or behavior) in order to achieve satisfaction (the **internal aim**). See AIM OF THE INSTINCT.

**object permanence** knowledge of the continued existence of objects even when they are not directly perceived. According to Jean PIAGET, object permanence develops gradually in infants during the SENSORIMOTOR STAGE of cognitive development. Milestones that indicate the acquisition of object permanence include reaching for and retrieving a covered object (about 8 months), retrieving an object at Location B even though it was previously hidden several times at Location A (the **A-not-B task**; about 12 months), and removing a series of covers to retrieve an object, even though the infant only witnessed the object being hidden under the outermost cover (**invisible displacement**; about 18 months). Recent research using nonreaching tasks suggests that infants display some knowledge of object permanence at an earlier age than that suggested by Piaget.

**object play** play that involves the manipulation of items in the environment, such as banging toys together, throwing them around, or arranging them in specific configurations. It is one of three traditionally identified basic types of play (the others being LOCOMOTOR PLAY and SOCIAL PLAY) and may occur in a solitary or social context.

**object relations** **1.** an individual's relationship to his or her entire external world. **2.** in psychoanalysis, an individual's relationships to his or her OBJECTS (real and imagined), that is, the persons, activities, or things that function as sources of connection as well as libidinal or aggressive gratification.

**object relations psychotherapy** a form of psychoanalysis derived from OBJECT RELATIONS THEORY; it recognizes the importance of an individual's early fantasies of and experiences with significant others (objects), especially parents, and aims to identify the internalized objects within the patient.

**object relations theory** any psychoanalytically based theory that views the need to relate to OBJECTS as more central to personality organization and motivation than the vicissitudes of the INSTINCTS. These theories developed from and in reaction to classic Freudian theories of psychodynamics. Some theories—for example, FAIRBAIRNIAN THEORY and the approach of Melanie KLEIN—view the personality as organized in terms of a complex world of internal object representations and their relationships with each other.

**object-superiority effect** in visual perception tasks, the finding that judgments about a briefly presented line are made more efficiently when the line is part of a drawing of a three-dimensional object than when it is part of a two-dimensional figure. See CONFIGURAL SUPERIORITY EFFECT; WORD-SUPERIORITY EFFECT.

**obligate carrier** an individual whose parent and child or whose monozygotic twin carries a particular genetic mutation, implying that the individual must also carry the mutation, even though he or she has not been tested for it.

**obligation schema** see PRAGMATIC REASONING SCHEMA THEORY.

**oblique** *adj.* describing a set of axes that do not form right angles; in graphical representations of mathematical com-

putations (such as FACTOR ANALYSIS), this indicates correlated (not independent) variables. Compare ORTHOGONAL.

**oblique rotation** a transformational system used in FACTOR ANALYSIS when two or more factors (i.e., LATENT VARIABLES) are correlated. Oblique rotation reorients the factors so that they fall closer to clusters of vectors representing MANIFEST VARIABLES, thereby simplifying the mathematical description of the manifest variables. It is one of two types of FACTOR ROTATION used to identify a simpler structure pattern or solution, the other being ORTHOGONAL ROTATION.

**OBM** abbreviation for ORGANIZATIONAL BEHAVIOR MANAGEMENT.

**obnubilation** *n.* CLOUDING OF CONSCIOUSNESS or STUPOR.

**obscenity** *n.* verbal expressions, drawings, gestures, and written material that grossly violate the norms of good taste and decency in a given society. See PORNOGRAPHY. —**obscene** *adj.*

**obscurantism** *n.* **1.** opposition to scientific inquiry, rational argument, and the progress of knowledge generally, especially when these appear to contradict a given set of political, social, or religious convictions. **2.** a deliberate or strategic failure to be clear and lucid in the expression of knowledge or opinion. —**obscurantist** *adj.*

**observation** *n.* **1.** the careful, close examination of an object, process, or other phenomenon for the purpose of collecting data about it or drawing conclusions. See CONTROLLED OBSERVATION; NATURALISTIC OBSERVATION; PARTICIPANT OBSERVATION. **2.** a piece of information (see DATA). —**observational** *adj.*

**observational learning** **1.** the acquisition of information, skills, or behavior through watching the performance of others, either directly or via such media as films and videos. Also called **vicarious learning**. **2.** the conditioning of an animal to perform an act that it observes in a member of the same or a different species. For example, the mockingbird can learn to imitate the song patterns of other kinds of birds. Also called **vicarious conditioning**. See also MODELING THEORY.

**observational study** research in which the experimenter passively observes the behavior of the participants without any attempt at intervention or manipulation of the behaviors being observed. Such studies typically involve observation of cases under naturalistic conditions rather than the random assignment of cases to experimental conditions: Specially trained individuals record activities, events, or processes as precisely and completely as possible without personal interpretation. Also called **observational design**; **observational method**; **observational research**. See also NATURALISTIC OBSERVATION.

**observation coding system** a scheme or list of mutually exclusive labels, categories, and so forth—each of which characterizes a coherent dimension of interest—used for classifying information obtained by observing others. It is an essential component of any OBSERVATIONAL STUDY as it clarifies what data should be collected and how, providing definitions of each code along with examples. For instance, a researcher investigating infant behavior might develop the following observation coding system: (1) quietly alert, (2) crying, (3) fussing, and (4) sleeping. Thus, for every time during a specific observation period that an observer sees the baby acting alert, he or she would record

a 1 on his or her data form; for every time the observer sees the baby crying, he or she would record a 2, and so forth.

**observation delusion** see DELUSION OF OBSERVATION.

**observation hold** the confinement of a person to a hospital by a court order for a limited period of observation, usually to determine COMPETENCY TO STAND TRIAL or overall legal COMPETENCE.

**observed-score equating** see SCORE EQUATING.

**observed variable** see MANIFEST VARIABLE.

**observer** *n.* **1.** one who makes or records an OBSERVATION. **2.** one who is the subject of, and who attends to presented stimuli in, psychophysical testing. In this sense, the term is abbreviated **O**. See also IDEAL OBSERVER. **3.** in TELEPATHY experiments, a participant who is neither the designated SENDER nor the designated RECEIVER. His or her function is often to guard against EXPERIMENTER BIAS or other methodological errors.

**observer bias** any expectations, beliefs, or personal preferences of a researcher that unintentionally influence his or her recordings during an OBSERVATIONAL STUDY. See EXPERIMENTER EFFECT.

**observer drift** gradual, systematic changes over a period of time by a particular observer in his or her application of criteria for recording or scoring observations. See EXPERIMENTER DRIFT.

**observer memory** an autobiographical memory that one remembers from the perspective of an outside observer. When retrieving an observer memory, the person sees himself or herself as an actor in the event. Also called **third-person perspective memory**. Compare FIELD MEMORY.

**observing response** behavior that results in the presentation or clarification (e.g., enhanced view) of DISCRIMINATIVE STIMULI.

**obsession** *n.* a persistent thought, idea, image, or impulse that is experienced as intrusive or inappropriate and results in marked anxiety, distress, or discomfort. Obsessions are often described as EGO-DYSTONIC in that they are experienced as alien or inconsistent with one's self and outside one's control (though this is not necessarily the case in children). Common obsessions include repeated thoughts about contamination, a need to have things in a particular order or sequence, repeated doubts, aggressive or horrific impulses, and sexual imagery. Obsessions can be distinguished from excessive worries about everyday occurrences in that they are not concerned with real-life problems. The response to an obsession is often an effort to ignore or suppress the thought or impulse or to neutralize it by a COMPULSION. See OBSSIVE-COMPULSIVE DISORDER. —**obsessional** *adj.* —**obsessive** *adj.*

**obsessional type** see LIBIDINAL TYPES.

**obsessive behavior** behavior characteristic of obsessive-compulsive personality disorder or obsessive-compulsive disorder, such as persistent brooding, doubting, ruminating, worrying over trifles, or cleaning up and keeping things in perfect order.

**obsessive-compulsive disorder (OCD)** a disorder characterized by recurrent intrusive thoughts (OBSESSIONS) that prompt the performance of neutralizing rituals (COMPULSIONS). Typical obsessions involve themes of contamination, dirt, or illness (fearing that one will contract or

transmit a disease) and doubts about the performance of certain actions (e.g., a preoccupation that one has neglected to turn off a home appliance). Common compulsive behaviors include repetitive cleaning or washing, checking, ordering, repeating, and hoarding. The obsessions and compulsions—which are recognized by affected individuals (though not necessarily by children) as excessive or unreasonable—are time consuming (more than 1 hour per day), cause significant distress, and interfere with functioning. Although OCD has traditionally been considered an ANXIETY DISORDER, it is increasingly thought to be in a separate diagnostic category; DSM-5 classifies it under the category **obsessive-compulsive and related disorders**, along with BODY DYSMORPHIC DISORDER, HOARDING, TRICHOTILLOMANIA, and EXCORIATION (SKIN-PICKING) DISORDER, among others.

**obsessive-compulsive personality disorder** in DSM-IV-TR and DSM-5, a personality disorder characterized by an extreme need for perfection, an excessive orderliness, an inability to compromise, and an exaggerated sense of moral responsibility (see SCRUPULOSITY). Also called **compulsive personality disorder**.

**obstruction method** an experimental technique in which a nonhuman animal is presented with one or more goals of various drives—for example, food (hunger) versus water (thirst)—and is required to overcome an obstacle (e.g., an electrified grid) in order to reach the goal. The delay before attempting to overcome the obstacle, as well as the animal's choice of which goal to pursue, may be used to represent drive strength and drive dominance.

**obstructive hydrocephalus** see NONCOMMUNICATING HYDROCEPHALUS.

**obstructive sleep apnea** see BREATHING-RELATED SLEEP DISORDER; SLEEP APNEA.

**obstruent** *adj.*, *n.* see PLOSIVE.

**obtrusive idea** a persistent, unwanted, and alien idea that intrudes on a person's normal flow of thought. See also OBSESSION.

**obturator** *n.* **1.** any item that blocks an opening. **2.** a PROSTHESIS worn inside the mouth to close an opening in the palate. It is often used to improve the speech production of an individual with a CLEFT PALATE.

**OCB** abbreviation for ORGANIZATIONAL CITIZENSHIP BEHAVIOR.

**Occam's razor** the maxim that, given a choice between two hypotheses, the one involving the fewer assumptions should be preferred. In other words, one should apply the LAW OF PARSIMONY and choose simpler explanations over more complicated ones. See also ELEGANT SOLUTION. [William of Occam or Ockham (c. 1285–1347), English Franciscan monk and Scholastic philosopher]

**occasional cause** in the doctrine of OCCASIONALISM, a change in a material or mental condition that appears to cause a correlated change in some other condition but that, in reality, is merely an occasion for God to produce the observed change in the latter.

**occasionalism** *n.* the philosophical doctrine that events are not directly caused by the antecedent events that appear to produce them, and particularly that material things cannot cause mental phenomena nor can mental phenomena influence material things. Rather, all things material and mental are caused by God's volitional acts. A

change in a mental or material condition provides God with the occasion to produce a change in some other mental or material condition. Thus, the material or mental phenomena that might appear to be real and direct causes are merely OCCASIONAL CAUSES. Extreme forms of occasionalism reject causal influence of any mental or material phenomena on any others. Occasionalism was first formulated by French philosopher Nicolas Malebranche (1638–1715), largely as a response to the MIND–BODY PROBLEM arising from CARTESIAN DUALISM. —**occasionalist** *adj.*

**occasion setter** in CLASSICAL CONDITIONING, a stimulus that is differentially paired with a stimulus–stimulus contingency. For example, after presentation of a light, a tone might be followed by the delivery of food. In the absence of the light, the tone is not followed by food. If the tone is effective in eliciting salivation only after the light is presented, the light is designated as an occasion setter.

**occasion setting** pairing of cues so that one signals when the other will be reinforced. Also called **facilitation**.

**occipital cortex** the CEREBRAL CORTEX of the occipital lobe of the brain. See VISUAL CORTEX.

**occipital lobe** the most posterior (rearward) subdivision of each cerebral hemisphere, roughly shaped like a pyramid and lying under the skull's occipital bone. It contains several VISUAL AREAS that receive and process visual stimuli, and it is involved in basic visual functions (e.g., visual acuity; contrast sensitivity; perception of color, form, and motion) as well as higher level ones (e.g., figure–ground segregation based on textural cues). A region of this lobe, the **occipital face area (OFA)**, has been identified as crucial to face recognition. See also FUSIFORM GYRUS.

**occlusion** *n.* **1.** an obstruction or closure. Occlusion of a cerebral artery may cause a thrombotic or embolic STROKE. **2.** the simultaneous firing of two branches of the same neuron, which may result in a total output that is less than the sum of the separate responses. —**occlusive** *adj.*

**occult** *adj.* mysterious, incomprehensible, or secret. The term is mainly applied to certain esoteric traditions of magical belief and practice (see MAGIC) but is sometimes used in reference to other alleged phenomena that cannot be explained in either everyday or scientific terms, such as PREMONITORY DREAMS, CLAIRVOYANCE, and telepathic communications (see TELEPATHY). —**occultism** *n.* —**occultist** *n.*

**occupation** *n.* **1.** a family of jobs that involve the performance of similar tasks and have similar requirements in terms of skills, training, and personal attributes. For example, accounting jobs in different organizations will differ to some extent in the tasks performed and level of skill required, but there is enough commonality to place them in the same occupation. See also PROFESSION. **2.** in rehabilitation, see OCCUPATIONAL THERAPY. **3.** more generally, any activity or pastime. —**occupational** *adj.*

**occupational ability** the ability to perform vocational or professional tasks, generally measured by a series of OCCUPATIONAL TESTS.

**occupational adjustment** the degree to which an individual's abilities, interests, and personality are compatible with a particular occupation. The term differs from VOCATIONAL ADJUSTMENT in its emphasis on the interaction between an individual's personal characteristics and the objective requirements, conditions, and opportunities associated with the job.

**occupational analysis** the systematic collection, processing, and interpretation of information concerning specific occupations.

**occupational biomechanics** see BIOMECHANICS.

**occupational counseling** an early 20th-century approach to vocational guidance. Three steps were identified in the process: (a) relevant knowledge of self, (b) realistic knowledge of occupations, and (c) true reasoning in making sensible choices. [proposed by U.S. educator Frank Parsons (1854–1908)]

**occupational cramp** painful spasm of the muscles, usually in the hand or arm, that prevents the individual from engaging in an occupation, such as writing, driving, sewing, playing a musical instrument, or firing a gun. It is a form of DYSTONIA. See MUSICIAN'S CRAMP; WRITER'S CRAMP. See also REPETITIVE STRAIN INJURY.

**occupational culture** a distinctive pattern of thought and behavior shared by members of the same occupation and reflected in their language, values, attitudes, beliefs, and customs. For example, police officers can be regarded as having a distinct culture of this kind. See also ORGANIZATIONAL CULTURE.

**occupational disease** any disease arising from factors involved with an individual's job.

**occupational ergonomics** a specialty area of ERGONOMICS that attempts to make work systems and processes within particular occupations more responsive to the physical, cognitive, and psychosocial characteristics of workers.

**occupational health psychology** a specialty within psychology devoted to first understanding workplace sources of health, illness, and injury and then applying this knowledge to improve the physical and mental well-being of employees.

**occupational interest measure** see INTEREST TEST.

**occupational neurosis** a psychogenic inhibition in which the individual experiences distress and increasing aversion to work, which may be expressed as poor work performance or reactive symptoms of illness (e.g., fatigue, vertigo) that increase in severity as the individual continues to work. In some cases, there is a specific inhibition that interferes with the ability to work, often affecting an essential function necessary for that work, such as WRITER'S CRAMP, SEAMSTRESS'S CRAMP, or CARPAL TUNNEL SYNDROME. These inhibitions were originally believed to be CONVERSION symptoms reflecting inner conflicts but have increasingly been found to have a medical explanation. Also called **occupational inhibition**.

**occupational norm** the average or typical score obtained from tests of a particular ability, trait, or interest among members of a particular occupation.

**occupational psychology** see INDUSTRIAL AND ORGANIZATIONAL PSYCHOLOGY.

**occupational rehabilitation** see VOCATIONAL REHABILITATION.

**Occupational Safety and Health Administration (OSHA)** a federal agency of the U.S. Department of Labor created to enforce the Occupational Safety and Health Act of 1970 and to establish occupational safety and health standards for all places of employment involved in interstate commerce.

**occupational segregation** the extent to which people

of the same gender or ethnicity are employed in some occupations to the exclusion of others. For example, the fact that a high proportion of nurses are women could suggest that this may be a sex-segregated occupation.

**occupational status** the degree of esteem accorded to members of an occupation by society. Occupations that are viewed positively are high-status occupations, whereas occupations that are viewed negatively are low-status occupations.

**occupational stress** a physiological and psychological response to events or conditions in the workplace that is detrimental to health and well-being. It is influenced by such factors as autonomy and independence, decision latitude, workload, level of responsibility, job security, physical environment and safety, the nature and pace of work, and relationships with coworkers and supervisors.

**occupational test** a test designed to measure potential ability or actual proficiency in a given occupation. See EMPLOYMENT TEST; WORK-SAMPLE TEST.

**occupational therapy (OT)** for individuals who have been injured or who have an illness, impairment, or other mental or physical disability or disorder, a therapeutic, rehabilitative process that uses purposeful tasks and activities to improve health; prevent further injury or disability; enhance quality of life; and develop, sustain, or restore the highest possible level of independence. It typically includes assessment of an individual's FUNCTIONAL STATUS, the development and implementation of a customized treatment program, and recommendations for adaptive modifications in home and work environments as well as training in the use of appropriate ASSISTIVE TECHNOLOGY devices. The term **occupation** is used by practitioners of the therapy to denote three broad categories of human activity: (a) ACTIVITIES OF DAILY LIVING, (b) work and productive activities, and (c) play or leisure activities.

**OCD** abbreviation for OBSESSIVE-COMPULSIVE DISORDER.

**oceanic feeling** an expansion of consciousness beyond one's body (limitless extension) and a sense of unlimited power associated with identification with the universe as a whole. According to psychoanalytic theory, this feeling originates in the earliest period of life, before the infant is aware of the outside world or the distinction between the ego and nonego. Oceanic feelings may be revived later in life as a delusion or as part of a religious or spiritual experience.

**oceanic state** a condition of perceived boundlessness of the self, sometimes involving a feeling of omniscience. It may be an ecstatic state, a state of altered awareness, a state of interpersonal connection or spiritual union, or a dissociative experience. See also ALTERED STATE OF CONSCIOUSNESS; COSMIC CONSCIOUSNESS. [introduced by French writer Romain Rolland (1866–1944) and developed by Sigmund FREUD]

**O'Connor v. Donaldson** a 1975 lawsuit in the U.S. Supreme Court in which it was determined that people cannot be involuntarily committed to a facility on the basis of mental illness alone if they are not dangerous to themselves or others and are able to survive safely outside the facility. A lower court ruling in this case cited an Alabama District Court in its final ruling in *Wyatt v. Stickney* (1972) regarding right to treatment with involuntary commitment (see FORCED TREATMENT; WYATT V. STICKNEY DECISION).

**octave** *n.* the interval between two sounds that have a frequency ratio of 2:1. See CENT; MUSICAL INTERVAL.

**octave effect** in conditioning, the phenomenon in which a nonhuman animal, after experiencing reinforcement at one sound frequency, will react to a new frequency an octave away from the original frequency because it is more similar to the original than a frequency within the octave would be.

**ocul-** combining form see OCULO-.

**ocular** **1.** *adj.* relating to the eye. **2.** *n.* the eyepiece of a microscope.

**ocular accommodation** see ACCOMMODATION.

**ocular apraxia** see OCULOMOTOR APRAXIA.

**ocular dominance** a response characteristic of neurons in the STRIATE CORTEX. Many neurons respond more vigorously to stimulation through one eye than they do to stimulation through the other eye.

**ocular dominance column** a vertical slab of STRIATE CORTEX in which the neurons are preferentially responsive to stimulation through one of the two eyes. It is important for binocular vision. Ocular dominance columns for each eye alternate in a regular pattern, so that an electrode inserted tangentially to the cortical surface encounters neurons that are responsive to stimulation through first the IPSILATERAL EYE, then the CONTRALATERAL EYE, then back to the ipsilateral eye; vertical electrode penetration of one column encounters neurons in all layers in which the response is dominated by stimulation through the same eye. Compare ORIENTATION COLUMN. See also MONOCULAR REARING. [first described in the 1960s by U.S. neurophysiologist David Hubel (1926–2013) and Swedish neurophysiologist Torsten Wiesel (1924– )]

**ocular dominance histogram** a graph that portrays the strength of response of a neuron to stimuli presented to either the left eye or the right eye. It is used to determine the effects of manipulating visual experience.

**ocular dysmetria** inability to direct saccadic eye movements (see SACCADIC) to targets. Eye movements may either fall short of the target (undershooting: **ocular hypometria**) or go beyond it (overshooting: **ocular hypermetria**). Ocular dysmetria may be due to an oculomotor deficit (e.g., paralysis of eye muscles), defective visual localization, or impaired visuomotor coordination. Also called **saccadic dysmetria**.

**ocular flutter** a rapid horizontal oscillation occurring in both eyes when gazing straight ahead. Flutter may also appear following a SACCADIC (**flutter dysmetria**). Ocular flutter is typically caused by injury to the cerebellum.

**ocular hypertelorism** see HYPERTELORISM.

**ocular myopathy** see MYOPATHY.

**ocular palsy** see OCULOMOTOR PALSY.

**ocular pursuit** see VISUAL PURSUIT.

**oculo-** (**ocul-**) combining form eye.

**oculocerebral-hypopigmentation syndrome** a rare hereditary disorder marked by eye anomalies, absence of hair and skin pigmentation, intellectual disability, and spasticity. First identified in 1967 in three siblings of an Old Order Amish family, the syndrome is believed to be due to an autosomal recessive trait that becomes manifest through consanguinity (relationship by blood).

**oculocerebrorenal syndrome** a rare X-linked recessive disorder affecting male children and marked by renal-tubule dysfunction and eye disorders, including congenital glaucoma, cataracts, and distension of the eyeball because of fluid accumulation. The renal disorders include acidosis, hypophosphatemia, and excess amino acids in the urine. Many individuals with the syndrome have delayed development, and intellectual ability ranges from normal to severely impaired. Neurological deficits vary from absence of brain abnormalities to HYDROCEPHALUS and cerebral atrophy. Also called **Lowe oculocerebrorenal syndrome**; **Lowe syndrome**.

**oculogravic illusion** an illusory displacement of an object that may occur when the direction of gravity changes (e.g., a line may appear to tilt in an aircraft during a roll).

**oculogyral illusion** the apparent movement of a stationary faint light in a dark room when the observer rotates around it, due to involuntary, rapid movements of the eyeballs (VESTIBULAR NYSTAGMUS).

**oculogyric crisis** prolonged fixation of the eyeballs in a single position for minutes to hours. It may result from encephalitis or be produced by certain antipsychotic drugs. Also called **oculogyric spasm**.

**oculomotor apraxia** a condition in which willed (i.e., purposeful) eye movements are impaired. Affected individuals appear to have lost the ability to move their eyes. SMOOTH-PURSUIT EYE MOVEMENTS and SACCADES are impaired or even absent when elicited by a target stimulus and when the individual is asked to follow a target. A particular form of oculomotor apraxia is **lid apraxia**, the inability to close the eyes. Also called **ocular apraxia**. See also CONGENITAL OCULOMOTOR APRAXIA.

**oculomotor changes** a broad category of effects induced by alteration of the visual environment, such as the adaptation in movement trajectory that occurs with prolonged viewing of the world through prism goggles that invert or displace the visual image.

**oculomotor nerve** the third CRANIAL NERVE, which contains both motor and sensory fibers and innervates most of the muscles associated with movement and accommodation of the eye and constriction of the pupil (i.e., all the muscles of the eye except the external rectus and superior oblique muscles). Also called **cranial nerve III**.

**oculomotor nucleus** a nucleus in the brainstem that is associated with either of the OCULOMOTOR NERVES.

**oculomotor palsy** paralysis of any of the extrinsic EYE MUSCLES. This may be due to damage to the muscle itself (myogenic), the motor end plate (neuromuscular), or the third, fourth, or sixth cranial nerves (neurogenic). The most common causes are diabetes, hypertension, and multiple sclerosis. Also called **ocular palsy**.

**oculosympathetic paralysis** see HORNER'S SYNDROME.

**oculovestibular response** eye movements that occur when the head is moved. They are used to test integrity of the RETICULAR ACTIVATING SYSTEM after brain injury.

**Od** *n.* see REICHENBACH PHENOMENON.

**OD 1.** *n.* a colloquial name (an abbreviation) for an OVERDOSE, most often of an opioid or a sedative. **2.** *vb.* to take an overdose. **3.** abbreviation for ORGANIZATIONAL DEVELOPMENT.

**O data** other data: information about an individual gathered from the observations, judgments, and evaluations of third parties who know him or her personally, such as family and friends. See also L DATA; Q DATA; T DATA.

**odd-even reliability** a method of assessing the reliability of a test by correlating scores on the odd-numbered items with scores on the even-numbered items. The CORRELATION COEFFICIENT between the two halves is adjusted using the SPEARMAN-BROWN PROPHECY FORMULA, which accounts for the decreased size of the odd and even item sets compared to the test as a whole. Odd-even reliability is a special case of SPLIT-HALF RELIABILITY.

**oddity from sample** a procedure similar to MATCHING TO SAMPLE except that reinforcement is arranged for responding to a stimulus that does not match the sample stimulus. Also called **oddity learning**.

**oddity problem** a learning task in which a nonhuman animal is required to choose an object or stimulus that is in some way different from a target or other possible choices. The purpose is to test the animal's ability to perceive relationships and differences among a number of similar objects.

**odds** *n.* the ratio of the probability of an event occurring to the probability of the event not occurring, usually expressed as the ratio of two integers (e.g., 3:2).

**odds ratio (OR)** the quotient of two odds. For example, in a study on a drug, the odds ratio is calculated as the odds of an effect in a treated group divided by the odds of the same effect in a control group. A measure of EFFECT SIZE, it varies from 0 to infinity, with a value of 1 indicating no effect and a value of less than 1 indicating a negative effect.

**odor** *n.* the property of an odorant that is perceptible as a sensory experience produced by stimulation of the olfactory nerve. See SMELL.

**odorant** *n.* an airborne volatile substance that produces an odor sensation. Odorants may differ in both intensity and quality.

**odorant-binding protein** any one of a small family of proteins that bind to odorants and are carriers of the odorant molecules to the mucus-covered neurons in the OLFACATORY EPITHELIUM.

**odorimetry** *n.* see OLFACTOMETRY.

**odor prism** see HENNING'S ODOR PRISM.

**odorvector** *n.* the vapor of an odorant, which produces sensations of smell. The odorvector may be sensed via the nose (see ORTHONASAL OLFACTION) or via the nasopharynx (see RETRONASAL OLFACTION). Also called **odorivector**.

**Odyle** *n.* see REICHENBACH PHENOMENON.

**oedipal conflict** see OEDIPUS COMPLEX.

**oedipal phase** in the classical psychoanalytic theory of Sigmund FREUD, the later portion of the PHALLIC STAGE of psychosexual development, usually between ages 3 and 5, during which the OEDIPUS COMPLEX manifests itself. Also called **oedipal stage**.

**Oedipus complex** in classical psychoanalytic theory, the erotic feelings of the son toward the mother, accompanied by rivalry and hostility toward the father, during the PHALLIC STAGE of psychosexual development. Sigmund FREUD derived the name from the Greek myth in which Oedipus unknowingly killed his father and married his

mother. Freud saw the Oedipus complex as the basis for NEUROSIS when it is not adequately resolved by the boy's fear of castration and gradual IDENTIFICATION with the father. The corresponding relationship involving the erotic feelings of the daughter toward the father, and rivalry toward the mother, is referred to as the **female Oedipus complex**, which is posited to be resolved by the threat of losing the mother's love and by finding fulfillment in the feminine role. Although Freud held the Oedipus complex to be universal, most anthropologists question this universality because there are many cultures in which it does not appear. Contemporary psychoanalytic thought has decentralized the importance of the Oedipus complex and has largely modified the classical theory by emphasizing the earlier, primal relationship between child and mother. Also called **oedipal conflict**; **oedipal situation**. See also CASTRATION COMPLEX; NUCLEAR COMPLEX.

**OEP** abbreviation for olfactory evoked potential. See CHEMOSENSORY EVENT-RELATED POTENTIAL.

**OFA** abbreviation for occipital face area. See OCCIPITAL LOBE.

**off cells (OFF cells)** neurons in the visual system, particularly the retina, that depolarize when stimulated by light cessation. See OFF RESPONSE. Compare ON CELLS.

**off-center bipolar cell** a RETINAL BIPOLAR CELL that is inhibited by light in the center of its RECEPTIVE FIELD but is excited by light in the surround. See also OFF RESPONSE. Compare ON-CENTER BIPOLAR CELL.

**off-center ganglion cell** a RETINAL GANGLION CELL that is inhibited by light in the center of its RECEPTIVE FIELD but is excited by light in the surround. See also OFF RESPONSE. Compare ON-CENTER GANGLION CELL.

**off-center/on-surround** referring to a concentric RECEPTIVE FIELD in which stimulation of the center inhibits the neuron of interest, whereas stimulation of the surround excites it. See CENTER-SURROUND ANTAGONISM. Compare ON-CENTER/OFF-SURROUND.

**officer-assisted suicide** see SUICIDE BY COP.

**officer selection** see MILITARY OFFICER SELECTION.

**officer training** military courses used to educate officers in leadership skills.

**off-label** *adj.* denoting or relating to the clinical use of a drug for a purpose that has not been approved by the U.S. Food and Drug Administration. Manufacturers cannot promote drugs for off-label uses, although medical literature may support such uses.

**offline group** a group that meets face to face in a conventional setting and uses traditional methods of communication rather than computer-based technology. Compare ONLINE GROUP.

**off response (OFF response)** the depolarization of a neuron in the visual system that occurs in response to light decrement. Neurons with off responses in the center of their receptive fields are often called OFF CELLS. See also CENTER-SURROUND ANTAGONISM. Compare ON RESPONSE.

**off-the-job training** interventions to increase the knowledge, skills, and abilities of employees that occur away from the workstation or workplace, often in classroom settings. Compare ON-THE-JOB TRAINING. See also VESTIBULE TRAINING.

**off-time life events** events that occur at a nontypical

or unexpected point in the lifespan for members of a given population. Examples are cancer in a child and marriage for a 90-year-old. Compare ON-TIME LIFE EVENTS.

**ogive** *n.* the somewhat flattened S-shaped curve typically obtained by graphing a CUMULATIVE FREQUENCY DISTRIBUTION. Consider the example of test results from students in a classroom. Cumulative frequency values would be given along the vertical *y*-axis and obtained test scores along the horizontal *x*-axis. The plot would increase slightly at either end, indicating that few students received very low or very high scores, but rise much more steeply in the center, indicating that the majority of students received average scores.

**'ohana** *n.* the family unit in the Hawaiian culture, characterized by a value system that emphasizes multigenerational kinship, including the prescription of age-appropriate roles, connection to one's ancestors, respect for the wisdom of elders, promotion of the welfare of children, and the overall sustenance of the family system. Similar ways of conceptualizing family are found in other Polynesian cultures.

**6-OHDA** abbreviation for 6-HYDROXYDOPAMINE.

**Ohm's law** the principle that the ear can analyze COMPLEX TONES into a series of individually perceptible PURE TONES. [Georg Simon **Ohm** (1787–1854), German physicist]

**-oid** *suffix* likeness or similarity (e.g., ANTHROPOID).

**oikofugic** *adj.* having or relating to an urge to travel or wander from home. See DROMOMANIA; NOMADISM.

**oikomania** *n.* see ECOMANIA.

**oikotropic** *adj.* affected with homesickness or nostalgia for home.

**OKR** abbreviation for OPTOKINETIC REFLEX.

**olan** *n.* see MYRIACHIT.

**olanzapine** *n.* an ATYPICAL ANTIPSYCHOTIC used for the treatment of acute mania, schizophrenia, and other psychotic disorders in adults. It is closely related to CLOZAPINE but lacks the latter drug's association with agranulocytosis. Common side effects are sedation, lethargy, weight gain, and ORTHOSTATIC HYPOTENSION. Rarely, like all antipsychotics, it may be associated with TARDIVE DYSKINESIA or NEUROLEPTIC MALIGNANT SYNDROME. U.S. trade names: **Zydis**; **Zyprexa**.

**Older Adult Resources and Services** a questionnaire used as a community assessment tool to determine the level of functioning of older adults in five areas: mental health, physical health, social resources, economic resources, and ACTIVITIES OF DAILY LIVING. It must be administered by a trained individual. Either the entire questionnaire or one or more segments are given. The questionnaire can be used to evaluate existing services or the need for services for individuals or communities.

**oldest old** see ADULTHOOD.

**old-fashioned racism** see MODERN RACISM.

**old-old** *adj.* see ADULTHOOD.

**Oleptro** *n.* a trade name for TRAZODONE.

**olfactive** *n.* a unit for measuring odor intensity, used to calibrate early OLEFACTOMETERS. It is equal to the intensity of an ODORANT that just exceeds the ABSOLUTE THRESHOLD.

**olfaction** *n.* the sense of smell, involving stimulation of receptor cells in the OLFACTORY EPITHELIUM (located in the nasal passages) by airborne volatile substances called ODORANTS. Specifically, OLFACTORY RECEPTORS extend numerous cilia into the OLFACTORY MUCOSA in the roof of the nasal cavity; these cilia, together with villi of supporting tissue cells, form a layer of hairlike projections. Molecules of odorants are absorbed into nasal mucus and carried to the olfactory epithelium, where they stimulate the receptor sites of the cilia. The olfactory receptors carry impulses in axonal bundles through tiny holes in the CRIBRIFORM PLATE, the bony layer separating the base of the skull from the nasal cavity. On the top surface of the cribriform plate rests the OLFACTORY BULB, which receives the impulses and sends them on to the PERIAMYGDALOID CORTEX. —**olfactory** *adj.*

**olfactometer** *n.* an instrument used to regulate the presentation of ODORANTS. An olfactometer may have tubes that are inserted into the nostrils, or the odorant may be emitted more diffusely into the air surrounding the nose. See BLAST OLFACTOMETER; STREAM OLFACTOMETER.

**olfactometry** *n.* the measurement of the acuity of smell. Also called **odorimetry**.

**olfactophilia** *n.* sexual interest in and arousal by body odors, especially those from the genital areas.

**olfactorium** *n.* a test chamber devised for precise measurement of olfactory function, especially odor sensitivity. The highly controlled environment of the chamber presents pure air or odorant-bearing air. The testee typically bathes and then puts on a protective suit prior to entering the chamber.

**olfactory adaptation** a decrease in olfactory sensitivity subsequent to stimulation of the sense of smell. This temporary phenomenon is measured by increases in odor thresholds and reported declines in odor intensities.

**olfactory area** a brain structure associated with the sense of smell. See PERIAMYGDALOID CORTEX; PYRIFORM AREA.

**olfactory brain** see PYRIFORM AREA; RHINENCEPHALON.

**olfactory bulb** a bulblike ending on the olfactory nerve in the anterior region of each cerebral hemisphere. This first synapse in the olfactory system picks up excitation from the nose, specifically from the cilia in the OLFACTORY EPITHELIUM. See also TUFTED CELL.

**olfactory cell** see OLFACTORY RECEPTOR.

**olfactory cilium** a hairlike structure arising from an OLFACTORY RECEPTOR.

**olfactory cortex** a three-layered area of CEREBRAL CORTEX at the base of the TEMPORAL LOBE that is attached to the OLFACTORY BULB and devoted to the sense of smell. The olfactory cortex receives and interprets information from OLFACTORY RECEPTORS in the nasal cavity and is involved in the identification of odors.

**olfactory cross-adaptation** a reduction in sensitivity to an odor following adaptation to another odor. Unlike other senses, there are usually no changes in the perceived quality of single ODORANTS following adaptation to other single odorants. Cross-adaptation is observed, however, in an odorant mixture that contains the single odorant adapting stimulus.

**olfactory dysfunction** any alteration in the perception

of odor quality or odor sensitivity, such as ANOSMIA, HYPEROSMIA, HYPOSMIA, PAROSMIA, PHANTOSMIA, and TROPOSMIA.

**olfactory encoding** see VISUAL ENCODING.

**olfactory epithelium** an area of OLFACTORY RECEPTORS in the lining of the upper part of the nose. The epithelium is separated from the OLFACTORY BULB by the CRIBRIFORM PLATE, through which the receptor cells synapse with cells in the olfactory bulb.

**olfactory eroticism** pleasurable sensations, particularly of an erotic nature, associated with the sense of smell.

**olfactory evoked potential (OEP)** see CHEMOSENSORY EVENT-RELATED POTENTIAL.

**olfactory hallucination** a false perception of odors, which are usually unpleasant or repulsive, such as poison gas or decaying flesh.

**olfactory mucosa** the superior portion of the nasal cavity containing mucus-secreting cells and subsuming the OLFACTORY EPITHELIUM, the OLFACTORY NERVE, and supporting cells.

**olfactory nerve** the first CRANIAL NERVE, which carries sensory fibers concerned with the sense of smell. It originates in the olfactory lobe and is distributed to OLFACTORY RECEPTORS in the nasal mucous membrane. Also called **cranial nerve I**.

**olfactory receptor** a spindle-shaped receptor cell in the OLFACTORY EPITHELIUM of the nasal cavity that is sensitive to ODORANTS. Cilia at the base of the olfactory receptors contain receptor sites for odorants. The receptors themselves collectively form the OLFACTORY NERVE, which synapses with cells in the OLFACTORY BULB. Also called **olfactory sense organ**. See OLFACTORY STIMULATION.

**olfactory reference syndrome** a cluster of symptoms that include an excessive and irrational fear that one is emitting an unpleasant or offensive body odor, typically accompanied by frequent compulsions (e.g., excessive bathing or use of deodorant). These symptoms cause significant distress or impairment in social, occupational, or other important areas of functioning. Olfactory reference syndrome is considered by many to be a form of either BODY DYSMORPHIC DISORDER or OBSESSIVE-COMPULSIVE DISORDER. Also called **autodysmophobia**; **bromosis**. See also TAIJIN KYOFUSHO.

**olfactory sense organ** see OLFACTORY RECEPTOR.

**olfactory stimulation** the excitation of the cilia of OLFACTORY RECEPTORS in the nasal cavity by inhaled ODORANTS, which are absorbed into nasal mucus. There is little agreement on the precise mechanism involved in this excitation.

**olfactory sulcus** a groove on the surface of each cerebral hemisphere, on the inferior (lower) side of the frontal lobe.

**olfactory system** the primary structures and processes involved in an organism's detection of and responses to ODORANTS. The olfactory system includes several million OLFACTORY RECEPTORS in the nasal cavity, the OLFACTORY EPITHELIUM and VOMERONASAL SYSTEM, OLFACTORY TRANSDUCTION, neural impulses and pathways (see OLFACTORY NERVE), and associated brain areas and their functions.

**olfactory tract** a band of nerve fibers that originates in the OLFACTORY BULB and extends backward along the bot-

tom side of the frontal lobe of the brain to a point called the **olfactory trigone**, at which point the tract divides into three strands leading to the medial and lateral olfactory gyri and the olfactory tubercle. See also LATERAL OLFACTORY TRACT.

**olfactory transduction** the sequence of events by which the chemical molecules of an ODORANT are detected by OLFACTORY RECEPTORS and transformed by the OLFACTORY NERVE into electrical signals perceived as smells by the OLFACTORY BULB. As in other sense systems, the conjoint activation of many receptors and the modulating effects of SECOND MESSENGERS play important roles in olfactory transduction.

**olfactory tubercle** a small oval elevation near the base of the OLFACTORY TRACT that contains auxiliary olfactory nerve fibers and cells. The olfactory tubercle is particularly prominent in nonhuman animals that depend on a sense of smell to survive.

**oligarchy** *n.* **1.** rule by a small elite group. **2.** those who constitute such a group. —**oligarchic** *adj.*

**oligo-** (**olig-**) *combining form* few or deficient.

**oligodendrocyte** *n.* a type of nonneuronal central nervous system cell (GLIA) that forms MYELIN SHEATHS around axons. Also called **oligodendroglia**.

**oligodendroglioma** *n.* see GLIOMA.

**oligohydramnios** *n.* a deficiency of amniotic fluid, which can result in mechanical interference with fetal movements and possible congenital defects, such as clubfoot, torticollis, muscular dystrophy, or brain damage.

**oligospermia** *n.* an abnormally low content of spermatozoa in a sample of semen. Oligospermia is one of several factors responsible for male INFERTILITY. The usually accepted minimum level of sperm needed to ensure fertility is 20 million per milliliter.

**olisbos** *n.* see DILDO.

**olivary nucleus** an olive-shaped mass of gray matter in the medulla oblongata, comprised of two sets of nuclei: the **inferior olivary complex** (or **inferior olivary nucleus** or **inferior olive**), which lies on the ventral part of the medulla oblongata and is believed to be involved in motor control; and the **superior olivary complex** (or **superior olivary nucleus** or **superior olive**), which lies in the pons just above the inferior olivary complex and plays a significant role in the perception and localization of sound. Also called **olivary body**; **olivary complex**.

**Oliver–McFarlane syndrome** see TRICHOMEGALY-RETINAL DEGENERATION SYNDROME. [first described in 1965 by ophthalmologists Glen L. **Oliver** (d. 2002) and D. C. **McFarlane**]

**olivocochlear bundle** a tract of centrifugal or efferent fibers extending from the SUPERIOR OLIVARY COMPLEX through the descending neural pathways to the cochlear HAIR CELLS.

**olivopontocerebellar atrophy** a slowly progressive neurological disorder characterized by degeneration of neurons in the pons, cerebellum, and OLIVARY NUCLEUS. Symptoms are highly variable across individuals but typically include ATAXIA, difficulties with balance and walking, tremors, and DYSARTHRIA. In many cases, onset is in middle adulthood and death occurs within 10 to 20 years.

**-ology** *suffix* see -LOGY.

**ololiuqui** *n.* the seed of a Latin American vine, *Rivea corymbosa*, which contains substances chemically related to LSD but less potent. Ololiuqui was first described in the reports of the 16th-century Spanish physician Francisco Hernández while studying the indigenous peoples of Mexico, who used it for both medicinal and religious purposes.

**OLS** abbreviation for ordinary least squares. See LEAST SQUARES REGRESSION.

**OLSAT** acronym for OTIS–LENNON SCHOOL ABILITY TEST.

**ombudsman** *n.* a person or program responsible for investigating consumer complaints and grievances and acting as a consumer advocate in resolving problems (e.g., in a health care facility).

**omega squared** (symbol:  $\omega^2$ ) a measure of the STRENGTH OF ASSOCIATION based on the proportion of variance in one measure predictable from variance in other measures. In ANALYSIS OF VARIANCE, it indicates how much variation in a DEPENDENT VARIABLE can be explained by variation in one or more INDEPENDENT VARIABLES.

**omen** *n.* an event that is regarded, rationally or not, as a portent of future good or ill fortune. The study of supernatural omens is known as AUGURY.

**omission training** see DIFFERENTIAL REINFORCEMENT OF OTHER BEHAVIOR.

**omitted variable bias** the situation in which values calculated from a statistical model systematically overestimate or underestimate a degree of relationship or other quantity of interest because an important variable has been left out of the model. For example, a researcher could hypothesize a linear REGRESSION EQUATION in which stressful life events and lack of social support predict depression. If coping skills also are highly relevant to predicting depression, the researcher's failure to include that element in his or her conceptualization would create an omitted variable bias. The exclusion of important variables from models may constrain the validity of study findings. See also BIASED ESTIMATOR.

**omnibus test** **1.** any statistical test of significance in which more than two conditions are compared simultaneously or in which there are two or more INDEPENDENT VARIABLES. The ANALYSIS OF VARIANCE is an example. For instance, assume a researcher collects data from an experimental design having two independent variables, each of which has three different levels or conditions. He or she could conduct an analysis of variance to concurrently examine the mean values for all levels of each of the variables (and their combinations) in order to determine whether there are any significant differences among them. **2.** a type of exam that simultaneously measures several different abilities. For example, a mathematics omnibus test may include items assessing numeracy, algebraic skills, geometric proficiency, and trigonometric competency.

**omnipotence** *n.* in psychology, the delusion that one can personally direct, or control, reality outside of the self by thought or wish alone. Psychology generally considers feelings of omnipotence to fall anywhere between neurosis, in its milder forms, and psychosis, when the delusion is expressed as alienation from or outright denial of reality. In psychoanalytic theory, the main emphasis is on the infant's feeling that he or she is all-powerful, which is thought to arise (a) out of satisfaction of the child's slightest gesture; (b) out of increasing cognitive and physical abilities; and (c) as a REACTION FORMATION to feelings of helplessness



and anxiety. See also MEGALOMANIA; PRIMARY NARCISSISM.  
—**omnipotent** *adj.*

**omnipotent therapist** see PRESTIGE SUGGESTION.

**onanism** *n.* COITUS INTERRUPTUS or MASTURBATION. Onanism is named for the biblical character Onan, who “went to his brother’s wife and spilled it [his seed] on the ground” (Genesis 38:9).

**on cells (ON cells)** neurons in the visual system, particularly the retina, that depolarize when the retina is stimulated by light onset. See ON RESPONSE. Compare OFF CELLS.

**on-center bipolar cell** a RETINAL BIPOLAR CELL that is excited by light in the center of its RECEPTIVE FIELD but is inhibited by light in the surround. See also ON RESPONSE. Compare OFF-CENTER BIPOLAR CELL.

**on-center ganglion cell** a RETINAL GANGLION CELL that is excited by light in the center of its RECEPTIVE FIELD but is inhibited by light in the surround. See also ON RESPONSE. Compare OFF-CENTER GANGLION CELL.

**on-center/off-surround** referring to a concentric RECEPTIVE FIELD in which stimulation of the center excites the neuron of interest, whereas stimulation of the surround inhibits it. See CENTER–SURROUND ANTAGONISM. Compare OFF-CENTER/ON-SURROUND.

**oncology** *n.* the study and treatment of benign and malignant tumors (see NEOPLASM). This branch of medicine and of behavioral or population sciences deals with cancer and is subdivided into medical, radiation, surgical, behavioral, and epidemiological subtypes. —**oncologist** *n.*

**ondansetron** *n.* a SEROTONIN ANTAGONIST at the 5-HT<sub>3</sub> serotonin receptor that is used for the prevention and treatment of nausea resulting from chemotherapy or anesthesia. When combined with appropriate behavior therapy, it may also be an effective adjunctive agent in managing certain types of alcoholism, although it is not officially approved by the U.S. Food and Drug Administration for such treatment. U.S. trade name: **Zofran**.

**one-factor analysis of variance** see ONE-WAY ANALYSIS OF VARIANCE.

**one-group pretest–posttest design** a variation of the PRETEST–POSTTEST DESIGN in which only a single set of participants is measured on a DEPENDENT VARIABLE of interest, exposed to a treatment or intervention, and then measured again to determine the change or difference between the initial (pre-) and second (post-) measurement. The lack of a CONTROL GROUP in this type of research design makes it difficult to attribute gains in the posttest score to the intervention, as other elements (e.g., participant MATURATION) may have contributed to any change observed. Also called **one-group pre–post design**.

**oneirism** *n.* a dreamlike state that occurs during wakefulness. —**oneiric** *adj.*

**oneiro-** (**oneir-**) *combining form* dreams.

**oneirodynia** *n.* a form of dreaming characterized by nightmares or unpleasant dreams.

**oneiromancy** *n.* the art or practice of divining the future from dreams. See DIVINATION. See also CLAIRVOYANT DREAM; PREMONITORY DREAM.

**oneirophrenia** *n.* a dreamlike, hallucinatory state resembling schizophrenia in certain symptoms, such as disturbances of emotion and associations, but distinguished

from schizophrenia by disturbances of the senses and clouding of consciousness. It is associated with prolonged sleep deprivation, sensory deprivation, or drug use, but it is not widely considered a distinct clinical entity. [first described in the 1950s by Hungarian-born U.S. psychiatrist Ladislav von Meduna (1896–1964)]

**one-parameter model** see RASCH MODEL.

**one-person psychology** in RELATIONAL PSYCHOANALYSIS, a term used to characterize CLASSICAL PSYCHOANALYSIS as a perspective that focuses on the patient’s intrapsychic life and assumes that the analyst’s or therapist’s role is largely as an objective observer of manifestations of the patient’s dynamics. Compare TWO-PERSON PSYCHOLOGY.

**one-sample test** see SINGLE-SAMPLE TEST.

**one-sample *t* test** see SINGLE-SAMPLE *T* TEST.

**one-shot case study** a research design in which a single group is observed on a single occasion after experiencing some event, treatment, or intervention. Because there is no CONTROL GROUP against which to make comparisons, it is a weak design; any changes noted are merely presumed to have been caused by the event.

**one-sided message** a message containing arguments that solely advocate one side of an issue. It is contrasted with a **two-sided message**, which predominantly advocates one side but also acknowledges—and sometimes refutes—the other side of an issue. One-sided messages tend to be most effective when recipients are unlikely to generate arguments on the other side of the issue. Two-sided messages are most successful when recipients are likely to generate opposing arguments.

**one-tailed hypothesis** see DIRECTIONAL HYPOTHESIS.

**one-tailed test** see DIRECTIONAL TEST.

**one-trial learning** the mastery of a skill after the first training trial.

**one-way analysis of covariance** an ANALYSIS OF COVARIANCE in which there is a single INDEPENDENT VARIABLE and one or more COVARIATES whose potential influence needs to be accounted for statistically. For example, assume a researcher is evaluating how three types of instructional methods (three levels of the independent variable) affect scores on an academic achievement test (the DEPENDENT VARIABLE). If the researcher believes general intelligence, gender, and other unmeasured factors could also affect scores, he or she might use a one-way analysis of covariance to control for such covariates when assessing the experimental data.

**one-way analysis of variance** an ANALYSIS OF VARIANCE that evaluates the influence of different levels or conditions of a single INDEPENDENT VARIABLE upon a DEPENDENT VARIABLE. The mean values of two or more samples are examined in order to determine the probability that they have been drawn from the same population. Also called **one-factor analysis of variance**.

**one-way design** an experimental design in which a single INDEPENDENT VARIABLE is manipulated to observe its influence on a DEPENDENT VARIABLE. For example, a researcher could use a one-way design to examine the effect of different amounts of daily exercise (e.g., 0 minutes, 30 minutes, 60 minutes) on mood. Also called **single-factor design**.

**one-word stage** the developmental period, between ap-

proximately 10 and 18 months, when children use one word at a time when speaking. Complex ideas are sometimes expressed with a single word, accompanied by gestures and emphasis. For example, depending on the context and how the word is spoken, *milk* may mean *That is milk*, *I want more milk*, or *I spilled the milk*. Also called **holophrastic stage**. See HOLOPHRASE.

**oniomania** *n.* compulsive shopping, or an uncontrollable impulse to spend money and to buy without regard to need or use.

**online group** a group whose members communicate with one another solely or primarily through computer-based information technologies rather than through face-to-face interactions. Compare OFFLINE GROUP.

**online self-help group** a group of individuals who communicate over the Internet on a regular basis to help one another cope with a shared life problem. Online groups overcome some of the barriers to participation in traditional SELF-HELP GROUPS, including lack of local group availability and transportation constraints.

**online social network** a set of interconnected individuals who interact using computer-based technologies rather than through face-to-face interactions. An example is a community of Internet video gamers, the members of which each have defined roles and relationships.

**online therapy** see E-THERAPY.

**on-off cell** a type of neuron in the visual system, particularly the retina, that depolarizes when the retina is stimulated with either light onset or light offset.

**onomatopoeia** *n.* the formation of a word whose sound replicates to a recognizable degree the sound of the thing or action that it represents, such as *hiss*, *smack*, or *cuckoo*. See also ICONIC SYMBOL. —**onomatopoeic** *adj.*

**on response** (**ON response**) the depolarization of a neuron in the visual system that occurs in response to light increment. Neurons with on responses in the center of their receptive fields are often called ON CELLS. See also CENTER-SURROUND ANTAGONISM. Compare OFF RESPONSE.

**onset insomnia** see INITIAL INSOMNIA.

**onset of action** the point at which the activity of a drug is apparent, generally measured in terms of the time elapsed between administration and the appearance of its pharmacological effects.

**on-the-job training** training provided in the workplace during regular working hours for the purpose of developing or enhancing the knowledge, skills, and abilities of employees. Compare OFF-THE-JOB TRAINING. See also VESTIBULE TRAINING.

**on-time life events** events that occur at the typical or expected point in the lifespan for members of a given population. Examples are marriage in young adulthood and retirement in later adulthood. Compare OFF-TIME LIFE EVENTS.

**ontoanalysis** *n.* a form of EXISTENTIAL ANALYSIS that probes the ultimate nature of being.

**ontogenetic fallacy** the false assumption that anything that looks like a common pattern of change with age is a basic, normative process of aging. An example is the assumption that because disability is often seen in the elderly it is a natural, universally experienced outcome of the aging process. [proposed by 21st-century U.S. sociologist Dale Dannefer]

**ontogenetic psychology** the study of the psychological aspects of the biological development of the individual (see ONTOGENY) as opposed to that of the species (see PHYLOGENY). Also called **ontogenic psychology**.

**ontogeny** *n.* the biological origin and development of an individual organism from fertilization of the egg cell until death. Also called **ontogenesis**. Compare PHYLOGENY. See also RECAPITULATION THEORY. —**ontogenetic** *adj.*

**ontogeny of conscious experience** the developmental emergence of consciousness in an organism. See INFANT CONSCIOUSNESS.

**ontological confrontation** the keen and immediate awareness of personal mortality that can occur when an individual's usual defenses against death awareness are pierced by circumstances or evoked memories. See also DEATH ANXIETY; TERROR MANAGEMENT THEORY.

**ontology** *n.* the branch of philosophy that deals with the question of existence itself. From some philosophical perspectives, ontology is synonymous with METAPHYSICS, in that both ask fundamental questions about what reality is. However, from the perspective of contemporary EXISTENTIALISM and HERMENEUTICS, ontology implies a concern with the meaning of existence that is largely lacking in traditional metaphysics. Whereas metaphysics asks "What is there?" or "What is fundamental?," the question of ontology is often posed as "What does it mean to 'be' at all?" For example, to say that Smith is a professor is to rely on a very different sense of the verb *be* than is present in a statement that Smith is hungry. Likewise, Smith is not a professor in the same way that a painting is beautiful. Contemporary approaches to ontology often take their analytical point of departure from the work of German philosopher Martin Heidegger (1889–1976). In this tradition, psychology is the pursuit of an adequate understanding of the ontology of human beings. It asks, or ought to ask, "What does it mean to be a human being?" See BEING-IN-THE-WORLD; DASEIN; EXISTENTIAL PHENOMENOLOGY. —**ontological** *adj.*

**oocyte** *n.* a cell in the ovary from which an ovum (egg cell) develops in the process of OOGENESIS.

**oogenesis** *n.* the process by which germ cells divide and differentiate to produce female gametes (ova). In human females, **primary oocytes** are formed in the ovary during embryonic development by the proliferation and differentiation of precursor cells called **oogonia** (*sing.* **oogonium**). The primary oocytes enter into the first division of MEIOSIS but then remain suspended at this stage of cell division until puberty. Thereafter, roughly once a month until menopause, one primary oocyte resumes meiosis and completes the first meiotic division to produce two unequally sized daughter cells: The larger one is the **secondary oocyte**, and the smaller is a **polar body**. Following OVULATION, the secondary oocyte undergoes the second meiotic division to produce an ovum and another polar body. The first polar body might also divide to produce two tiny cells, resulting in three polar bodies, which are normally nonfunctional and degenerate.

**oophorectomy** *n.* see OVARECTOMY.

**opaque** *adj.* unable to transmit light: neither transparent nor translucent.

**open adoption** see ADOPTION.

**open call system** a system of vocal communication in which new vocalizations can be added throughout life. Whereas many songbirds rarely show change in song

structure after the end of a CRITICAL PERIOD, other birds, including parrots, starlings, mynahs, and mockingbirds, can acquire new calls and songs throughout their lives. Few mammals have an open call system, but some dolphins and whales show evidence of acquiring new calls throughout life. Compare CLOSED CALL SYSTEM.

**open-classroom design** a design for classrooms that provides a study environment based on results of BEHAVIOR MAPPING. The open physical construction of the classroom, occasionally without walls, creates an environment suitable for less formal learning styles. In addition, an instructor may opt to arrange desks in a circular formation to facilitate discussion or in groupings of four or six for small group work, as opposed to the traditional classroom design in which rows of desks are arranged in parallel lines.

**open-classroom method** an approach to teaching and learning that emphasizes the student's right to make decisions and that views the teacher as a facilitator of learning rather than a transmitter of knowledge. The open-classroom method may include grouping of students across grades, independent study, individualized rates of progression, open-plan schools without interior walls, or unstructured time and curricula.

**open class society** a society that permits or encourages SOCIAL MOBILITY. Compare FIXED CLASS SOCIETY.

**open-class words** in a language, a category of words that readily admits new members, such as those arising through borrowing, word formation, or technological innovation. In practice, this category is virtually identical with the category of CONTENT WORDS because it usually excludes grammatical FUNCTION WORDS. Compare CLOSED-CLASS WORDS.

**open design** see OPEN-CLASSROOM DESIGN; OPEN-OFFICE DESIGN.

**open-door hospital** see OPEN HOSPITAL.

**open economy** an experimental design used in operant-conditioning experiments in which an organism's intake of food or water includes not only that provided during experimental sessions but also that provided in supplemental amounts independent of behavior in the home cage. This ensures that a particular level of body weight, or some other measure of deprivation, is maintained. Compare CLOSED ECONOMY.

**open-ended interview** an interview in which the interviewee is asked questions that cannot be answered with a simple *yes* or *no*. For example, a human resources staff member interviewing a candidate for employment might ask, "What were the major responsibilities of your most recent job?" Open-ended interviews encourage interviewees to talk freely and extensively, thus providing information that might not be obtained otherwise. The general questions and their order may be planned in advance (see STANDARDIZED INTERVIEW), or a single initial question can be planned and the subsequent discussion allowed to pursue various areas of interest as they arise (see UNSTRUCTURED INTERVIEW).

**open-field chamber** an enclosed space in which research animals can move freely while their ambulatory and defecatory behavior is observed and measured. See also ANIMAL OPEN-FIELD BEHAVIOR.

**open-field test** an experimental technique for measuring (quantifying) behaviors and physiological reactions (e.g., those indicative of anxiety) in rats and other small

animals. The animal is placed in a space divided into squares so that the researcher may observe the number of squares the animal traverses in a specified time period.

**open group** a group to which new members may be admitted. In counseling or therapy, the term refers to a group that allows new members during the course of therapy. Also called **continuous group**. Compare CLOSED GROUP.

**open head injury** a head injury, such as a gunshot wound, in which the skull is penetrated or broken open. Also called **penetrating head injury**. Compare CLOSED HEAD INJURY.

**open hospital** a psychiatric hospital without locked doors or physical restraints. Also called **open-door hospital**.

**opening technique** the means by which a therapist establishes initial rapport and trust at the beginning of a professional relationship with a client in therapy or at the beginning of each session in individual or family therapy. Also called **opening moves**.

**open-label study** a CLINICAL TRIAL in which both the researcher and the participant know the treatment the participant is receiving.

**open-loop system** **1.** a system that requires constant external inputs, as opposed to one that continually recycles the initial input. **2.** a system that will continue to follow a particular set of commands, irrespective of adverse results or altered conditions, because it has no capacity to monitor or regulate itself through FEEDBACK. An example is a garden sprinkler system that is set to come on at specific times, even if it is raining. Compare CLOSED-LOOP SYSTEM.

**open marriage** **1.** a marriage in which both partners allow and encourage each other to grow and change over the years. Compare CLOSED MARRIAGE. **2.** a marital arrangement (formal or common-law) in which the partners permit each other to have sexual relations with other people. See also NONTRADITIONAL MARRIAGE.

**openmindedness** *n.* a personality trait reflecting a relative lack of DOGMATISM. Compare CLOSEDMINDEDNESS. —**openminded** *adj.*

**openness to experience** a dimension of the BIG FIVE PERSONALITY MODEL and the FIVE-FACTOR PERSONALITY MODEL that refers to individual differences in the tendency to be open to new aesthetic, cultural, or intellectual experiences.

**open-office design** a type of office design consisting of a large area with very few partitions between work spaces. A premium is placed on flexibility and visual accessibility, which are believed to support innovation and communication. Evidence indicates mixed results, with positive responses for team activities but problems with distraction and lack of privacy. There also appear to be individual differences in tolerance for open-plan spaces. See also LANDSCAPED OFFICE.

**open question** **1.** in a test or survey, an item that does not come with any multiple-choice options for the respondent. Compare FIXED-ALTERNATIVE QUESTION. **2.** in an interview, a question that encourages the respondent to answer freely in his or her own words, providing as much or as little detail as desired. For example, a candidate in a job interview may be asked the open question, "How would you describe yourself?"

**open shop** a work arrangement in which union mem-

bership is voluntary and is not required as a condition of employment. Compare CLOSED SHOP. See also AGENCY SHOP; UNION SHOP.

**open skill** any motor skill that is performed under varying conditions on each occasion, as in making a jump shot in a game of basketball. Compare CLOSED SKILL.

**open society** a form of social organization characterized by a respect for human rights, the freedom to voice dissenting opinions, an elective government, and the rule of law. Essential to this concept is an awareness of the imperfect nature of government and the need for constant critical evaluation of social policy so that it evolves with changing circumstances or new insights. A **closed society**, by contrast, is one characterized by inflexible social structures and a fixed ideology that cannot accept criticism or tolerate difference. See also DEMOCRACY. [described by French philosopher Henri Bergson (1859–1941) and later developed by Austrian-born British philosopher Karl Popper (1902–1994)]

**open study** a research project in which new participants can be added after the project has begun.

**open system** **1.** a system with permeable boundaries that permit exchange of information or materials with the environment. **2.** a biological system in which growth can occur without conforming to laws of thermodynamics or a demonstrated constancy of energy relations. Compare CLOSED SYSTEM.

**open system theory** a theoretical perspective that views an organization as open to influence from the environment. The organization is viewed as transforming human and physical resources from the environment into goods and services, which are then returned to the environment.

**open ward** a hospital ward or unit in which the doors are not locked.

**open word** see PIVOT GRAMMAR.

**operandum** *n.* in OPERANT CONDITIONING, a device that a nonhuman animal operates or manipulates to produce automatic recording of a response. For example, in a simple conditioning experiment for a rat, a lever that the rat can press would be the operandum. See also MANIPULANDUM.

**operant** *n.* a class of responses that produces a common effect on the environment. An operant is defined by its effect rather than by the particular type of behavior producing that effect. A distinction may be made between the behavior required to achieve the effect and those alternative forms of behavior that constitute the class and may also occur. In the former, the class might include all forms of behavior that result in a lever being moved 4 mm downward (see DESCRIPTIVE OPERANT). In the latter case, the class includes all forms of behavior that become more probable; for example, a rat's two-handed lever presses might increase in probability, but one-handed presses might not (see FUNCTIONAL OPERANT). Compare RESPONDENT.

**operant behavior** behavior that produces an effect on the environment and whose likelihood of recurrence is influenced by consequences (see OPERANT). Operant behavior is nearly synonymous with VOLUNTARY BEHAVIOR.

**operant chamber** an apparatus for the laboratory study of OPERANT BEHAVIOR. It typically consists of a small enclosure and is equipped so that all stimuli are presented,

and all responses are detected and recorded, automatically. See OPERANT CONDITIONING CHAMBER.

**operant conditioning** the process in which behavioral change (i.e., learning) occurs as a function of the consequences of behavior. Examples are teaching a dog to do tricks and rewarding behavioral change in a misbehaving child (see BEHAVIOR THERAPY). The term is essentially equivalent to INSTRUMENTAL CONDITIONING. Also called **operant learning**. See BEHAVIOR MODIFICATION; SHAPING. [first described by B. F. SKINNER]

**operant conditioning chamber** an apparatus used to study FREE-OPERANT behavior. Generally, it provides a relatively small and austere environment that blocks out extraneous stimuli. Included in the environment are devices that can present stimuli (e.g., reinforcers) and measure free-operant responses. For example, the apparatus for a rat might consist of a 25 cm<sup>3</sup> space containing a food tray, which can be filled by an automatic feeder located outside the space, and a small lever that the rat may press to release food from the feeder. Measurement of behavior and presentation of stimuli in the apparatus are usually automatic. The apparatus was initially developed in the 1930s by B. F. SKINNER. It later became known colloquially as the **Skinner box**, although Skinner himself disliked this term.

**operant conditioning therapy** a therapeutic approach that relies on the use of antecedents, behaviors, and consequences. For example, REINFORCEMENT through rewards may be used to improve behaviors in everyday situations.

**operant learning** see OPERANT CONDITIONING.

**operant level** a baseline probability or frequency of behavior that occurs naturally, before REINFORCEMENT is arranged, as in the amount of lever pressing by a rat before any food reward or other reinforcer is introduced.

**operant paradigm** **1.** the experimental arrangement of a CONTINGENCY between a response and a consequence, such as reinforcement. **2.** more generally, the assumption that much human behavior is controlled by its consequences.

**operant response** a single instance from an OPERANT class. For example, if lever pressing has been conditioned, each single lever press is an operant response.

**operation** *n.* **1.** a type of cognitive SCHEME that is mental (i.e., requires symbols), derives from action, exists in an organized system in which it is integrated with all other operations (**structures of the whole**), and follows a set of logical rules, most importantly that of REVERSIBILITY. [postulated by Jean PIAGET] **2.** a surgical procedure.

**operational analysis** analysis of the decision-making processes underlying the accomplishment of complex tasks. Generally, the tasks involve the tracing of inputs through a process and the tracking of outputs. The analysis usually involves mathematical modeling and statistical techniques and aims at maximizing the effectiveness of the process.

**operational definition** a description of something in terms of the operations (procedures, actions, or processes) by which it could be observed and measured. For example, the operational definition of anxiety could be in terms of a test score, withdrawal from a situation, or activation of the sympathetic nervous system. The process of creating an operational definition is known as **operationalization**.

**operationalism** *n.* the position that the meaning of a scientific concept depends upon the procedures used to establish it, so that each concept can be defined by a single observable and measurable operation. An example is defining an emotional disorder as a particular score on a diagnostic test. This approach was mainly associated with RADICAL BEHAVIORISM. Also called **operationism**.

**operational research** see OPERATIONS RESEARCH.

**operational sex ratio** the relative number of males and females available at the time when reproduction is possible. In nonhuman mammals with internal gestation and lactation, there are often fewer females receptive to copulation than available males, creating an operational sex-ratio bias toward males, even though adults of both sexes may be present in equal numbers. In polygynous species (see POLYGYNUS), there might be more receptive females than available males, creating an operational sex-ratio bias toward females.

**operational thought** in PIAGETIAN THEORY, the type of thought characteristic of the last two stages of a child's cognitive development, the CONCRETE OPERATIONAL STAGE and FORMAL OPERATIONAL STAGE.

**operationism** *n.* see OPERATIONALISM.

**operationist view of consciousness** the notion that conscious experiences may be reduced to publicly observable events, such as discriminative responses. [championed by Stanley Smith STEVENS and Edwin G. BORING]

**operation span (OSpan)** a widely used task to assess WORKING MEMORY capacity, in which participants try to remember sequentially presented words in their correct order while simultaneously solving simple math equations. In the standard OSpan, the task is divided into several trials that consist of between 2 and 6 successively presented equation-word pairs (e.g.,  $8 \div 4 + 3 = ?$  moon). As rapidly as possible, participants read each equation aloud, say the answer (5), and then read aloud the word printed beside the equation (moon). At the end of each set of equations, the participant verbally recalls each of the words from the set in the correct serial order. Various modifications of the task also exist, including one in which answers are supplied for the equations and participants verify their correctness, one in which all equations are presented prior to the to-be-remembered words, and one in which participants identify the target words from lists and indicate their correct order of presentation. OSpan performance is highly correlated with performance on other cognitive tasks indexing such higher level abilities as abstract reasoning, attentional orienting, general fluid intelligence, language comprehension, and problem solving, presumably because these activities also require individuals to store and mentally process information simultaneously. See also MEMORY SPAN. [developed in 1989 by U.S. psychologists Marilyn L. Turner and Randall W. Engle (1946– )]

**operations research** the application of advanced analytical methods—such as mathematical modeling, OPTIMIZATION, and computer simulation—to the study of complex situations so as to obtain a comprehensive understanding that allows for accurate predictions of outcomes and estimates of risk and enables more rational, effective decision making. It is used particularly in management science and business contexts. Also called **operational research**.

**operative knowledge** knowledge acquired in the pro-

cess of performing OPERATIONS, thought to be more basic and more predictive of later intellectual functioning than FIGURATIVE KNOWLEDGE (e.g., factual knowledge). [postulated by Jean PIAGET]

**operators** *pl. n.* the mental processes involved in comprehending the effect of different manipulations on quantity, as in knowing that adding an orange to a bowl of oranges changes the number, whereas rearranging the oranges does not. Compare ESTIMATORS. [first used in this sense by U.S. statistician Andrew Gelman]

**ophidiophilia** *n.* an abnormal fascination with snakes.

**ophidiophobia** *n.* see SNAKE PHOBIA.

**ophthalmia** *n.* severe inflammation of the eye that may affect either the conjunctiva or deeper structures. **Mucous** (or **catarrhal**) **ophthalmia** is a form of conjunctivitis with a purulent secretion; **electric ophthalmia** is produced by exposure to the light of an electric welding torch and **neuroparalytic ophthalmia** is a corneal inflammation with possible ulceration associated with lesions of the trigeminal nerve. See also TRACHOMA.

**ophthalmic nerve** a division of the TRIGEMINAL NERVE that mediates sensation of the orbit of the eye, the anterior part of the nasal cavity, and the skin of the nose and forehead.

**ophthalmology** *n.* the medical specialty concerned with the study of the eye and the diagnosis and treatment of eye disease. A physician who specializes in ophthalmology is called an **ophthalmologist**. Compare OPTOMETRY.

**ophthalmometer** *n.* see KERATOMETER.

**ophthalmoplegia** *n.* paralysis of one or more of the internal or external muscles of the eye (see OCULOMOTOR PALSY). See also PROGRESSIVE SUPRANUCLEAR PALSY.

**ophthalmoplegia externa** see BALLET'S DISEASE.

**ophthalmoscope** *n.* a handheld device used to examine the structures of the eye, especially the fundus (back). This examination may be direct, with the eye at close range so as to observe an erect image, or indirect, by use of a lens that produces an inverted image of the fundus. Compare RETINOSCOPE.

**-opia** *suffix* defect of vision or the eyes (e.g., ANOPIA; MYOPIA).

**opiate** *n.* any of a variety of natural and semisynthetic compounds derived from OPIUM. They include the alkaloids MORPHINE and CODEINE and their derivatives (e.g., HEROIN [diacetylmorphine]). Opiates, together with synthetic compounds having the pharmacological properties of opiates, are known as OPIOIDS.

**opinion** *n.* an attitude, belief, or judgment.

**opinion leader** an individual to whom others turn for advice or on whom others model their behavior. To be effective, the opinion leader needs to have social ties with other members of the group.

**opinionnaire** *n.* a type of measure for assessing the attitudes or beliefs of an individual about particular topics. It comprises a list of various statements that the respondent is asked to endorse or reject.

**opinion survey** a technique in which a large number of people are polled to determine their collective views, beliefs, or attitudes about a particular topic of interest. Information so obtained often is extrapolated to a broader popula-

tion with a given MARGIN OF ERROR. For example, during an election year one might conduct an opinion survey of preferences for potential U.S. presidential candidates in different states. Also called **opinion poll**.

**opinion testimony** court evidence that includes inferences or conclusions rather than actual facts observed or experienced. Opinion testimony is usually allowed only from EXPERT WITNESSES, because they have specialized knowledge that will aid the judge or jury in reaching a decision. See ULTIMATE OPINION TESTIMONY. See also LEARNED TREATISE EXCEPTION.

**opioid** *n.* any of a group of compounds that include the naturally occurring OPIATES (e.g., morphine, codeine) and their semisynthetic derivatives (e.g., heroin); the synthetic OPIOID AGONISTS (e.g., meperidine, methadone), OPIOID ANTAGONISTS (e.g., naloxone, naltrexone), and mixed agonist–antagonists (e.g., buprenorphine); and the ENDOGENOUS OPIOIDS. The effects of opioids include analgesia, drowsiness, euphoria or other mood changes, respiratory depression, and reduced gastrointestinal motility. Opioids are used clinically as pain relievers, anesthetics, cough suppressants, and antidiarrheal drugs, and many are subject to abuse and dependence.

**opioid abuse** in *DSM-IV-TR*, a pattern of opioid use marked by recurrent significant adverse consequences related to the repeated ingestion of an opioid, such as morphine, heroin, or substances with morphinelike effects (e.g., codeine, oxycodone). This diagnosis is preempted by the diagnosis of OPIOID DEPENDENCE: If the criteria for opioid abuse and opioid dependence are both met, only the latter diagnosis is given. In *DSM-5*, however, both have been subsumed into OPIOID USE DISORDER and are no longer considered distinct diagnoses. See also SUBSTANCE ABUSE.

**opioid agonist** any drug with enhancing effects at OPIOID RECEPTORS in the central nervous system. Opioid agonists may be complete (pure) or partial agonists. MORPHINE is a pure opioid agonist; other examples include CODEINE, HEROIN, METHADONE, MEPERIDINE, and LAAM. Opioid partial agonists (e.g., BUPRENORPHINE) have lower levels of activity than complete opioid agonists at the same receptors and consequently have less analgesic activity. Also called **narcotic agonist**.

**opioid analgesic** any opioid used clinically to reduce both the sensation of pain and the emotional response to pain. This analgesia results from agonist activity at the mu OPIOID RECEPTOR. CODEINE, **dihydrocodeine**, PROPOXYPHENE, and HYDROCODONE are among opioids used for the relief of mild to moderate pain; severe pain is managed with more potent agents, such as MORPHINE, MEPERIDINE, **oxycodone** (U.S. trade name: OxyContin), and LEVORPHANOL. METHADONE, FENTANYL, and BUPRENORPHINE are potent analgesics that have additional uses. Side effects associated with opioid analgesics include nausea and vomiting, constipation, sedation, and respiratory depression; many also have the potential for abuse and dependence. Also called **narcotic analgesic**.

**opioid antagonist** an agent that acts as an antagonist at OPIOID RECEPTORS. Generally, opioid antagonists are synthetic derivatives of morphine that, as a result of structural changes in the molecule, bind to opioid receptors but do not produce the effects of euphoria, respiratory depression, or analgesia that are observed with OPIOID AGONISTS. Opioid antagonists may be complete (pure) or mixed. Complete antagonists, such as NALOXONE, NALTREXONE, **nalbuphine**

(U.S. trade name: Revex), and **nalorphine**, are generally used to reverse the effects of opiate overdose (notably respiratory depression). Mixed AGONIST–ANTAGONIST opioids, such as BUTORPHANOL and **pentazocine** (U.S. trade name: Talwin), were developed in attempts to produce opioid analgesics that did not possess the abuse potential of opioid agonists. Also called **narcotic antagonist**.

**opioid blockade** the inhibition of the euphoric effects of such opioids as heroin by administration of a blocking agent, especially METHADONE, as maintenance treatment for drug abuse. See METHADONE MAINTENANCE THERAPY; OPIOID ANTAGONIST.

**opioid dependence** in *DSM-IV-TR*, a pattern of repeated or compulsive use of opioids (e.g., morphine, heroin) despite significant opioid-related behavioral, physiological, and psychosocial problems and tolerance or characteristic withdrawal symptoms if use is suspended (see OPIOID WITHDRAWAL). In *DSM-5*, opioid dependence and OPIOID ABUSE have been subsumed into OPIOID USE DISORDER and are no longer considered distinct diagnoses. Also called **narcotic dependence**. See also SUBSTANCE DEPENDENCE.

**opioid intoxication** in *DSM-IV-TR* and *DSM-5*, a reversible syndrome due to the recent ingestion of an opioid (e.g., morphine, heroin). It includes clinically significant behavioral or psychological changes (e.g., initial euphoria followed by apathy, dysphoria, psychomotor agitation or psychomotor retardation, impaired judgment, and impaired social or occupational functioning), as well as one or more signs of physiological involvement (e.g., pupillary constriction, drowsiness or unconsciousness, slurred speech, respiratory depression).

**opioid neurotransmitter** see ENDOGENOUS OPIOID.

**opioid receptor** a RECEPTOR that binds opioids (including ENDOGENOUS OPIOIDS) and mediates their effects via G PROTEINS. It is generally agreed that there are at least three classes: mu ( $\mu$ ), kappa ( $\kappa$ ), and delta ( $\delta$ ) opioid receptors. Opioid receptors are widely distributed in the brain, spinal cord, and periphery, and each type of receptor is differentially distributed. **Mu opioid receptors** are largely responsible for the analgesic and euphoric effects associated with opioid use. Most exogenously administered opioids bind to mu opioid receptors, which also mediate the respiratory depression, sedation, and reduced gastrointestinal motility associated with opioids. **Kappa opioid receptors** are localized primarily in the DORSAL ROOT ganglia of the spinal cord. Stimulation of these receptors produces more modest analgesia and dysphoric responses and may also be responsible for some of the perceptual and cognitive effects of opioids. **Delta opioid receptors** may potentiate activity of opioids at the mu opioid receptor site and have a less direct involvement in the production of analgesia. The more recently discovered **nociceptin/orphanin FQ (N/OFQ) receptor**, included in the opioid receptor family, has not been completely characterized.

**opioid system** the combination of delta, kappa, and mu OPIOID RECEPTORS found in the nervous system and gastrointestinal tract. Strongly involved in the experience of reward and the control of pain, this system is triggered both by opioids produced in the body (see ENDOGENOUS OPIOID) and by naturally occurring or synthetic opioids administered exogenously.

**opioid use disorder** in *DSM-5*, a diagnostic category reflecting disordered use of natural opioids (e.g., mor-

phine), semisynthetic derivatives (e.g., heroin), and synthetic compounds with morphinelike effects (e.g., oxycodone). It combines *DSM-IV-TR*'s separate abuse and dependence diagnoses for these substances, thereby removing OPIOID ABUSE and OPIOID DEPENDENCE as distinct entities. Mild, moderate, and severe cases of opioid use disorder are determined according to the number of symptoms that individuals using these substances may present (e.g., craving; drug-seeking behavior; social and other dysfunction caused by opioid use; tolerance; withdrawal; etc.); the number ranges from a minimum of two symptoms for mild cases to more than six for severe.

**opioid withdrawal** in *DSM-IV-TR* and *DSM-5*, a characteristic withdrawal syndrome that develops after cessation of (or reduction in) prolonged, heavy consumption of opioids (e.g., morphine, heroin). Features may include dysphoria or anxiety, nausea or vomiting, muscle aches, dilation of the pupils, piloerection (goose flesh) or sweating, diarrhea, fever, and insomnia. See also SUBSTANCE WITHDRAWAL.

**Opitz G/BBB syndrome** a genetic disorder marked by widely spaced eyes; a high nose bridge; defects of the larynx, trachea, and esophagus that make breathing or swallowing difficult; and a urethral opening on the ventral side of the penis. Mild intellectual disability occurs in fewer than 50% of cases, most likely caused by structural defects in the brain. About half of affected individuals also have cleft lip with or without a cleft palate. The condition is genetically heterogeneous, with an X-linked form and an autosomal form considered to be among the 22Q11.2 DELETION SYNDROME spectrum disorders. Also called **Opitz BBB (or BBB/G) syndrome** (from the names of the affected families originally reported); **Opitz-Frias syndrome**. [reported in 1969 by U.S. geneticist John M. **Opitz** (1935– ) and Chilean-born U.S. geneticist Jaime L. **Frias**]

**opium** *n.* the dried resin of the unripe seed pods of the opium poppy, *Papaver somniferum*. Opium contains more than 20 alkaloids (**opium alkaloids**), the principal one being MORPHINE, which accounts for most of its pharmacological (including addictive) properties; other opium alkaloids include CODEINE, THEBAINE, and PAPAVERINE. Natural and synthetic derivatives of opium (see OPIATE; OPIOID) are eaten, smoked, injected, sniffed, and drunk. Their action, due mainly to their morphine content, is to induce analgesia and euphoria and to produce a deep, dreamless sleep from which the user can be easily aroused.

**opponent cell** a type of neuron in the visual system that depolarizes when a particular stimulus (e.g., red light) comes on in the center of the neuron's receptive field and when the "opposite" stimulus (e.g., green light) is extinguished in the surrounding zone of the receptive field. Double-opponent cells depolarize when the red light comes on or the green light is extinguished in the center of the receptive field, whereas the same stimuli produce the opposite effects in the receptive field surround.

**opponent process theory of acquired motivation** a theory that a stimulus or event simultaneously arouses a primary affective state, which may be pleasurable or aversive, and an opponent (opposite) affective state, which serves to reduce the intensity of the primary state: These two states together constitute emotional experience. According to this theory, the opponent state has a long latency, a sluggish course of increase, and a sluggish course of decay after the initiating stimulus is removed, all of which lead to its domination for a period following removal

of the stimulus. In contrast to the primary state, it is also strengthened through use and weakened through disuse. This theory sought to account for such diverse acquired motives as drug addiction, love, affection and social attachment, and cravings for sensory and aesthetic experiences. Also called **opponent process theory of emotion**; **opponent process theory of motivation**. [originated by Richard L. SOLOMON]

**opponent process theory of color vision** any one of a class of theories describing color vision on the basis of the activity of mechanisms, which may correspond to cells, that respond to red–green, blue–yellow, or black–white. The HERING THEORY OF COLOR VISION, the most highly developed opponent process theory, contrasted with the YOUNG–HELMHOLTZ THEORY OF COLOR VISION, which relied on receptors sensitive to specific regions of the spectrum. Although both theories explained many phenomena, both had deficiencies. In the 1950s, Leo HURVICH and Dorothea JAMESON suggested that both theories were correct, the Young–Helmholtz model describing a first stage of processing in the visual system whose outputs were then fed into an opponent process. This combined theory is known as the **dual process theory of color vision**. All three theories were proposed long before physiological studies of retinal neurons had been carried out, yet they were successful in predicting the responses of cells under most conditions.

**opportunism** *n.* the ability to exploit a variety of resources as they become available in changing environmental conditions or different locations. Some species are able to utilize new food resources rapidly: Kelp gulls introduced in Argentina rapidly expanded in numbers by feeding on refuse from fish factories and subsequently learned to attack and eat flesh from whales calving and nursing young in nearby waters. Other species show no opportunism and cannot exploit novel habitats or food resources.

**opportunity class 1.** an educational system that provides special-needs students with high-quality academic teaching in a stable, supportive environment with all the elements of a specialized curriculum. **2.** an instructional setting that provides guidance and counseling to promote each individual student's intellectual, social, emotional, and physical growth. **3.** a class in the PULL-OUT PROGRAM for students who do not fit the norm, such as gifted, emotionally challenged, or at-risk students.

**opportunity sampling** see CONVENIENCE SAMPLING.

**opportunity structure** a matrix that relates personal characteristics (e.g., age, disability, race, gender, education, financial status) to the cultural and social opportunities and options that are available to an individual throughout his or her life. According to some psychologists, barred or restricted access to legitimate opportunities for success, due to economic or social disadvantage, leads some individuals to seek success by illegitimate means (an "illegitimate opportunity structure"), such as delinquency or other criminal activity. Also called **opportunity matrix**.

**opposites test** see ANTONYM TEST.

**oppositional defiant disorder** in *DSM-IV-TR*, a behavior disorder of childhood characterized by recurrent disobedient, negativistic, or hostile behavior toward authority figures that is more pronounced than usually seen in children of similar age and that lasts for at least 6 months. It is manifest as temper tantrums, active defiance of rules, dawdling, argumentativeness, stubbornness, or being easily annoyed. The defiant behaviors typically do

not involve aggression, destruction, theft, or deceit, which distinguishes this disorder from CONDUCT DISORDER. Oppositional defiant disorder should be distinguished from ATTENTION-DEFICIT/HYPERACTIVITY DISORDER, with which it often co-occurs. In *DSM-5*, the symptom characteristics have largely been retained but are divided into subgroups of mood (e.g., angry, irritable), behavior (e.g., argumentative, defiant), and vindictiveness.

**opsin** *n.* the protein component of visual PHOTOPIGMENTS. There is one opsin for all rods (rod opsin, or scotopsin), which together with RETINAL forms the rod photopigment RHODOPSIN. There are three different cone opsins (photopsins), which convey different peak wavelength sensitivities to each of the three different cone photopigments (see IODOPSIN).

**opt-** combining form see OPTO-.

**optical axis** a theoretical line that passes through the center of an optical system. In the case of the eye, it passes through both the cornea and the lens.

**optical defect** any condition of the eye that prevents light rays from focusing properly on the retina. See REFRACTIVE ERROR.

**optical flow pattern** see OPTIC FLOW.

**optical illusion** a false visual image produced by either physical or psychological factors. See ILLUSION.

**optical projection** **1.** the formation of a visual image by means of a slide projector or similar device. **2.** the localization of objects in space that correspond to the image on the retina.

**optical scanner** **1.** a device for examining small or isolated areas by means of reflected or projected light. It is used in various chemical and physiological studies, for example, to determine the density of red blood cells in a blood sample and to identify molecules of a sugar or amino acid. **2.** a device for converting photographs, print, and other visual material into DIGITAL representations that can be stored in a computer and treated as data (for transmission, modification, or printing).

**optic aphasia** inability to name visually presented objects.

**optic apraxia** an impairment in the ability to associate tools and other objects with the corresponding action. Individuals with optic apraxia use objects improperly, misselect the objects needed for an intended activity, perform a complex activity (e.g., preparing a cup of tea, dressing) in the wrong order, or do not complete the task at all. In most cases, the temporoparietal or frontal association areas (or both) of the brain's left hemisphere are affected.

**optic array** **1.** the visual scene that emerges when patterns of light reaching the eye make available to the observer visual information about the external world. **2.** see AMBIENT OPTIC ARRAY.

**optic ataxia** inability to direct the hand to an object under visual guidance, typically caused by damage to the cortex of the PARIETAL LOBE. It is a feature of BALINT'S SYNDROME. Also called **visuomotor ataxia**.

**optic atrophy** degeneration of fibers of the optic nerve, as occurs in LOCOMOTOR ATAXIA, lead or methyl alcohol poisoning, or multiple sclerosis.

**optic chiasm** the location at the base of the brain at which the optic nerves from the two eyes meet. In humans,

the nerve fibers from the nasal half of each retina cross, so that each hemisphere of the brain receives input from both eyes. This partial crossing is called a **partial decussation**.

**optic disk** the area of the retina at which the axons of the RETINAL GANGLION CELLS gather before leaving the retina to form the optic nerve. Because this region contains no photoreceptors, it creates a BLIND SPOT in the visual field.

**optic flow** in the retinal image of the eye, the pattern and velocity of observed visual information about the motion of objects in an external scene relative to the motion of the observer. **Optical flow patterns** play an important role in locomotion; in the orientation, coordination, and balance of the body moving in space; and in the perception of movement in the outside environment. Also called **optical flow**. See also ECOLOGICAL PERCEPTION. [first investigated by James J. GIBSON]

**optician** *n.* see OPTOMETRY.

**optic nerve** the second CRANIAL NERVE, which carries the axons of RETINAL GANGLION CELLS and extends from the retina to the OPTIC CHIASM. Also called **cranial nerve II**.

**optic neuritis** inflammation of the optic nerve, which may lead to sudden, painful loss of vision in one eye.

**optic radiations** nerve fibers that project from the LATERAL GENICULATE NUCLEUS to the VISUAL CORTEX in the occipital lobe and to the pretectum, a structure in the midbrain important for the reflexive contraction of the pupils in the presence of light. As the optic radiations sweep around the lateral ventricles, they are called **Meyer's loop**.

**optics** *n.* the study of the physics of light, including its relations to the mechanisms of vision.

**optic tectum** the portion of the TECTUM in the midbrain that serves the visual system. See SUPERIOR COLLICULUS.

**optic tract** the bundle of optic nerve fibers after the partial decussation of the optic nerves at the OPTIC CHIASM. The major targets of the optic tract are the LATERAL GENICULATE NUCLEUS in the thalamus and the SUPERIOR COLLICULUS in the midbrain.

**optimal adjustment** the ideal degree and quality of coping with life or with a specific stressful event.

**optimal apparent motion** the perception of movement that occurs when the conditions used to produce APPARENT MOVEMENT are ideal. For example, in the production of beta movement, the timing and spacing of individual stationary stimuli can be manipulated to produce optimal apparent motion.

**optimal arousal theory** see PRINCIPLE OF OPTIMAL STIMULATION.

**optimal design** an approach to experimental design in which the conditions to be studied and the assignment of participants to those conditions are determined so as to best fulfill particular statistical criteria.

**optimal distinctiveness theory** a conceptual analysis that assumes individuals strive to maintain a balance between three basic needs: the need to be assimilated by groups to which they belong, the need to be connected to friends and loved ones, and the need for autonomy and differentiation. [proposed in 1991 by U.S. social psychologist Marilyn Brewer (1942– )]

**optimal foraging theory** a theory of foraging behavior



ior arguing that NATURAL SELECTION has created optimal strategies for food selection (based on nutritional value and costs of locating, capturing, and processing food) and for deciding when to leave a particular patch to seek resources elsewhere. Many aspects of optimal foraging theory have been studied empirically using OPERANT CONDITIONING with different SCHEDULES OF REINFORCEMENT and reward quality. See also MARGINAL VALUE THEOREM.

**optimal functioning** the highest possible level of functioning, especially in relationships, work, education, and subjective well-being.

**optimal level** the maximum (highest) level of complexity of a skill that an individual can control, which can be attained only in the most supportive environment. It has been suggested that when acquiring a skill an individual moves from the optimal level, at which the skill can be performed with assistance from others, to the **functional level**, at which the skill can be performed independently but possibly at a lower than optimal level. See SKILL THEORY. [proposed by U.S. psychologist Kurt W. Fischer (1943–)]

**optimal outbreeding** see INBREEDING AVOIDANCE.

**optimal scaling** see DUAL SCALING.

**optimal stimulation principle** see PRINCIPLE OF OPTIMAL STIMULATION.

**optimism** *n.* hopefulness; the attitude that good things will happen and that people's wishes or aims will ultimately be fulfilled. **Optimists** are people who anticipate positive outcomes, whether serendipitously or through perseverance and effort, and who are confident of attaining desired goals. Most individuals lie somewhere on the spectrum between the two polar opposites of pure optimism and pure PESSIMISM but tend to demonstrate relatively stable situational tendencies in one direction or the other. See also EXPECTANCY-VALUE MODEL. —**optimistic** *adj.*

**optimization** *n.* a statistical process in which ALGORITHMS are applied to data from a SAMPLE so as to obtain the best estimate of a value for a PARAMETER of interest in the broader population.

**optimize** *vb.* to create conditions that produce the best possible (**optimum**) outcome of something in the face of existing constraints.

**opto- (opt-)** *combining form* vision or the eyes.

**optogram** *n.* the physical image produced on the retina by the bleaching of RHODOPSIN by a visual stimulus (see PIGMENT BLEACHING). In the 19th century, optograms were obtained by rapidly removing the retina of experimental animals after they had viewed a bright stationary stimulus and, in several instances, by examining the retinas of human prisoners immediately after execution.

**optokinetic effect** **1.** any of a broad class of perceptual and motor responses to movement of the eyes. **2.** the movements of the eyes themselves in response to various moving stimuli.

**optokinetic reflex (OKR)** the involuntary compensatory eye movements that allow the eyes to maintain fixation on a visual target as it moves by an observer. The optokinetic reflex is driven by signals from neurons in the retina. Compare VESTIBULO-OCULAR REFLEX.

**optometry** *n.* the clinical field concerned primarily with the optics of the eye and the devices and procedures that

can correct optical defects. **Optometrists** can prescribe corrective lenses and exercises but are generally prohibited from prescribing drugs or performing eye surgery. Optometrists are more clinically oriented than **opticians**, who make spectacle lenses, but have fewer clinical privileges than ophthalmologists (see OPHTHALMOLOGY).

**OR** abbreviation for ODDS RATIO.

**or-** *combining form* see ORO-.

**oral administration** see ADMINISTRATION.

**oral-aggressive personality** see ORAL PERSONALITY.

**oral behavior** activities involving the mouth, such as thumb sucking, smoking, eating, kissing, nail biting, talking, and oral sex.

**oral-biting phase** in classical psychoanalytic theory, the second phase of the ORAL STAGE of psychosexual development, from about the 8th to the 18th month of life. During this phase, the child begins to feel that he or she is an autonomous person, develops ambivalent attitudes toward the mother, and expresses hostility by biting her breast or the nipple of the bottle. In later childhood, the urge to bite may take the form of nail biting, spitting, sticking out the tongue, or chewing on a pencil or gum. Also called **oral-sadistic phase**. Compare ORAL-SUCKING PHASE. See ORAL SADISM. [identified by German psychoanalyst Karl Abraham (1877–1925)]

**oral character** see ORAL PERSONALITY.

**oral coitus** see FELLATIO.

**oral contraceptive** a tablet taken regularly by women to prevent pregnancy. Most oral contraceptives are combined formulations of a synthetic estrogen and a progestin; some are progestin-only formulations. The synthetic hormones in these pills alter the normal menstrual activities so that ovulation and related functions are prevented. Introduced in 1960, this type of contraceptive became known popularly simply as “the Pill.”

**oral eroticism** in psychoanalytic theory, the pleasure derived from oral activities such as smoking, drinking, chewing, biting, talking, kissing, and orogenital activity. Also called **oral erotism**; **oral gratification**. See also ORALITY.

**Oralet** *n.* a trade name for FENTANYL.

**oral-genital contact** see OROGENITAL ACTIVITY.

**oral gratification** see ORAL EROTICISM.

**oral history** personal background information provided by an individual during an interview. Oral histories may describe perceptions and thoughts, experiences of important events, family relationships, and other personal details. They can be collected, transcribed, and analyzed as part of research studies.

**oralism** *n.* a method of improving the communication skills of individuals with hearing loss that focuses on the use of residual hearing, lipreading, and speech and de-emphasizes or prohibits the use of sign language and other manual forms of communication. Also called **oral method**.

**orality** *n.* in psychoanalytic theory, the oral factor in EROTICISM or neurosis, ranging from pleasure in biting, sucking, smoking, or oral sex to such habits as overeating and alcoholism.

**oral-lingual dyskinesia** see BUCCOLINGUAL MASTICATORY SYNDROME.

**oral method** see ORALISM.

**oral-motor feeding problem** a severe difficulty with sucking and swallowing typically seen in children who are born prematurely (related to immature motor development) or in children with motor disorders such as cerebral palsy. Compare FEEDING PROBLEM.

**oral personality** in classical psychoanalytic theory, a pattern of personality traits derived from fixation at the ORAL STAGE of psychosexual development. If the individual has experienced sufficient sucking satisfaction and adequate attention from the mother during the ORAL-SUCKING PHASE, he or she is posited to develop an **oral-receptive personality** marked by friendliness, optimism, generosity, and tolerance of dependency on others, allowing the individual to move on to late stages of psychosexual development. If the individual does not get enough satisfaction during the sucking and biting phases (see ORAL-BITING PHASE), he or she is posited to develop an **oral-aggressive personality** marked by tendencies to be hostile, critical, envious, and exploitative. Also called **oral character**. [identified by German psychoanalyst Karl Abraham (1877–1925)]

**oral phase** see ORAL STAGE.

**oral-receptive personality** see ORAL PERSONALITY.

**oral sadism** in classical psychoanalytic theory, the primitive urge to use the mouth, lips, and teeth as instruments of aggression, mastery, or sadistic sexual gratification. This impulse is believed to originate in the ORAL-BITING PHASE of infancy.

**oral-sadistic phase** see ORAL-BITING PHASE.

**oral sex** stimulation of the external genitals by the partner's mouth. Oral sex may be carried out to the point of orgasm or done as part of foreplay. It is not uncommon for people to classify oral sex as not really sex; for example, research has shown that some adolescents who have experienced oral sex to orgasm but have not participated in vaginal intercourse perceive themselves as still being virgins. See also OROGENITAL ACTIVITY.

**oral sound** a speech sound produced by airflow through the cavity of the mouth with little or no nasal quality in its production.

**oral stage** in the classical psychoanalytic theory of Sigmund FREUD, the first stage of PSYCHOSEXUAL DEVELOPMENT, occupying the 1st year of life, in which the LIBIDO is concentrated on the mouth as the principal erotic zone. The stage is divided into the early ORAL-SUCKING PHASE, during which gratification is achieved by sucking the nipple during feeding, and the later ORAL-BITING PHASE, when gratification is also achieved by biting. Fixation during each of these phases is posited to cause a particular type of ORAL PERSONALITY. Also called **oral phase**. See also ORAL EROTICISM.

**oral-sucking phase** in classical psychoanalytic theory, the earliest part of the ORAL STAGE of psychosexual development, in which the nursing infant is posited to feel that he or she is ingesting the mother's being along with the milk swallowed (see INCORPORATION). This phase is believed to lay the foundation for feelings of closeness and dependence, as well as for possessiveness, greed, and voraciousness. Compare ORAL-BITING PHASE. [identified by German psychoanalyst Karl Abraham (1877–1925)]

**Orap** *n.* a trade name for PIMOZIDE.

**ora serrata** the most anterior portion of the retina, located adjacent to the ciliary body. The normal retinal layers are attenuated in the ora serrata. Also called **ora terminalis**.

**Orbison illusion** any one of a group of GEOMETRIC ILLUSIONS in which a figure or a line with straight edges, or a circle, appears distorted by a background pattern of repeated lines. [William Dillard **Orbison** (1911–1952), U.S. psychologist]

**orbitofrontal cortex** the CEREBRAL CORTEX of the ventral part of each FRONTAL LOBE, having strong connections to the HYPOTHALAMUS. Lesions of the orbitofrontal cortex can result in loss of inhibitions, forgetfulness, and apathy broken by bouts of euphoria, as in the well-known case of PHINEAS GAGE.

**orchidectomy** *n.* the surgical removal of a testis. An orchidectomy may be performed when a testis is injured or diseased, as when the male reproductive system has been affected by cancer. It does not necessarily cause impotence but may reduce the desire for coitus. Orchidectomy performed before puberty can affect the development of secondary male sex characteristics. Also called **orchiectomy**. See also CASTRATION.

**order** *n.* in BIOLOGICAL TAXONOMY, a main subdivision of a CLASS, containing a group of similar, related FAMILIES.

**ordered scale** see ORDINAL SCALE.

**order effect 1.** in WITHIN-SUBJECTS DESIGNS, the influence of the order in which treatments are administered, such as the effect of being the first administered treatment (rather than the second, third, and so forth). As individuals participate in first one and then another treatment condition, they may experience increased fatigue, boredom, and familiarity with or practice with reacting to the independent variable. Any of these conditions could affect the participants' responses and CONFOUND the results of the study. Researchers often use COUNTERBALANCING to control for order effects. See also CARRYOVER EFFECT; SEQUENCE EFFECT. **2.** the influence of the order in which items or statements are listed on surveys and questionnaires. Three basic types of question order effect have been identified: (a) unconditional, in which the answer to a subsequent question is affected by the individual having responded to the prior question but not by the response given on that prior question; (b) conditional, in which the answer to a subsequent question depends on the response given to the prior question; and (c) associational, in which the correlation between the prior and subsequent questions changes depending on which is asked first. Order effects make it difficult to know whether change over time reflects legitimate respondent differences or question effects.

**orderliness** *n.* the tendency to be neat and tidy and to keep everything in place. Excessive orderliness may be a symptom of OBSESSIVE-COMPULSIVE DISORDER or OBSESSIVE-COMPULSIVE PERSONALITY DISORDER.

**order of magnitude** the approximate degree or strength of a number or value within a range, usually to the nearest power of 10. For example, 2,500 ( $2.5 \times 10^3$ ) and 4,300 ( $4.3 \times 10^3$ ) are of the same order of magnitude, but both are one order of magnitude greater than 240 ( $2.4 \times 10^2$ ).

**ordinal** *adj.* pertaining to rank, order, or position in a series. Compare CARDINAL; NOMINAL.

**ordinal data** numerical values that represent rankings along a continuum from lowest to highest, as in a judge's assignment of a 2 to denote that a particular athlete's performance was fair and a 3 to denote that a subsequent athlete's performance was better. Ordinal data may be counted (i.e., how many athletes obtained a 2, how many a 3, etc.) and arranged in descending or ascending sequence but may not be manipulated arithmetically—such as by adding, subtracting, dividing, or multiplying any rank by any other—because the actual difference in performance between adjacent values is unspecified and may vary. In other words, one does not know how much better a rank of 3 is than a 2, and the difference between a 2 and a 3 may not be the same as the difference between a 3 and a 4.

**ordinality** *n.* a basic understanding of “more than” and “less than” relationships.

**ordinal scale** a sequence of numbers that do not indicate magnitude or a true zero point but rather reflect a rank ordering on the attribute being measured. For example, an ordinal scale for the performance of a specific group of people on a particular test might use the number 1 to indicate the person who obtained the highest score, the number 2 to indicate the person who obtained the next highest score, and so on. It is important to note that an ordinal scale does not provide any information about the degree of difference between adjacent ranks (e.g., it is not clear what the actual point difference is between the rank 1 and 2 scores). Compare INTERVAL SCALE; NOMINAL SCALE; RATIO SCALE.

**ordinal variable** a variable whose possible values have a clear rank order. For example, attitude is an ordinal variable as it may be denoted with ordered points indicating increasing or decreasing values, such as 1 = *strongly disagree*, 2 = *disagree*, 3 = *agree*, and 4 = *strongly agree*. Values on an ordinal variable indicate that one data point is higher or lower than another but do not define the extent of the difference between them. Compare INTERVAL VARIABLE.

**ordinary creativity** see EVERYDAY CREATIVITY.

**ordinary least squares regression** see LEAST SQUARES REGRESSION.

**ordinate** *n.* the vertical coordinate in a graph or data plot; that is, the *y*-axis. See also ABSCISSA.

**Orestes complex** in classical psychoanalysis, a son's repressed impulse to kill his mother, which may result in the actual act of matricide. The name is derived from the Greek myth of Orestes, who killed his mother, Clytemnestra, and her lover, Aegisthus.

**orexin** *n.* any of a group of proteins, expressed in the LATERAL HYPOTHALAMUS, that trigger feeding and have also been implicated in NARCOLEPSY.

**orexis** *n.* the affective, appetitive character of an activity or behavior, as opposed to the cognitive aspects. Also called **orexia**. —**orectic** *adj.*

**organelle** *n.* a specialized, membrane-bound structure within a cell, such as a MITOCHONDRION or the GOLGI APPARATUS.

**organic** *adj.* **1.** denoting a condition or disorder that results from structural alterations of an organ or tissue. In psychology and psychiatry, the term is equivalent to *somatic* or *physical*, as contrasted with FUNCTIONAL or PSYCHOGENIC. **2.** relating to the fundamental, or essential,

make-up of a thing, situation, or phenomenon and to the interworking of its components.

**organic amnesia** see AMNESIA.

**organic approach** the perspective that all mental disorders have a physiological basis, resulting from structural brain changes or alterations in other bodily organs. Also called **organicism**.

**organic defect** a congenital defect that is not the result of a genetic anomaly. For example, a mental or physical defect in offspring can result from maternal illness or other conditions in pregnancy, including preeclampsia, viral infections (e.g., rubella), sexually transmitted infections, protozoan infections (e.g., toxoplasmosis), dietary deficiencies, or drug abuse (e.g., alcoholism).

**organic disorder** any disorder resulting from a demonstrable abnormality in the structure or biochemistry of body tissues or organs. Also called **organic disease**. Compare PSYCHOGENIC DISORDER.

**organic hallucinations** hallucinations associated with a specific brain-based factor. Stimulation or irritation of part of the brain or a sensory pathway may be a factor, and precipitating causes include aneurysm, tumor, epilepsy, drug use (including some prescribed drugs), and abuse of alcohol, cocaine, amphetamines, or similar substances.

**organicism** *n.* see ORGANIC APPROACH.

**organicity** *n.* a former term for brain damage or dysfunction.

**organicity test** an obsolete name for a cognitive or behavioral test that has been shown to be differentially sensitive to the effects of brain damage or dysfunction. See NEUROPSYCHOLOGICAL TEST.

**organic paralysis** loss of function of voluntary muscles due to structural lesions of the nervous or muscular system. Compare CONVERSION PARALYSIS.

**organic retardation** failure of an organ or organ system to develop normally because of a genetic defect, dietary deficiency, or hormonal disorder.

**organic selection** see BALDWIN EFFECT.

**organic sensation** a sensation that arises from deep within the body (e.g., a rumbling stomach). Also called **visceral sensation**.

**organic therapies** somatic treatments for serious or recalcitrant mental disorder, among which are ELECTROCONVULSIVE THERAPY, PSYCHOPHARMACOTHERAPY, and PSYCHOSURGERY.

**organic variable** a process or state within an organism that combines with a stimulus to produce a particular response. For example, a headache may be an organic variable, and the response may be an irritable reaction to a stimulus (e.g., noise in the neighborhood). Also called **O variable**.

**organ inferiority** the sense of being deficient or somehow less than others as a result of negative feelings about any type of real or imagined abnormality of organ function or structure. See INFERIORITY COMPLEX. [defined by Alfred ADLER]

**organism** *n.* an individual living entity, such as an animal, plant, or bacterium, that is capable of reproduction and growth.

**organismic** *adj.* having components (**organs**) serving various functions that interact to produce the integrated, coordinated total functioning that characterizes an organism.

**organismic model** the theory that development is directed by constraints inherent in the relationship among elements within the organism as they act upon themselves and each other. Not only are biological processes (e.g., maturation) seen as critical in directing development, but so also are the behaviors of the organism. See DEVELOPMENTAL SYSTEMS APPROACH.

**organismic personality theory** an approach to personality theory in which personal functioning is understood in terms of the action of the whole, coherent, integrated organism, rather than in terms of psychological variables representing one versus another isolated aspect of body or mind. [developed by Kurt GOLDSTEIN and Hungarian psychologist Andras Angyal (1902–1960)]

**organismic psychology** an approach to psychology that emphasizes the total organism, rejecting distinctions between mind and body. It embraces a MOLAR approach that takes account of the interaction between the organism and its environment. See HOLISM; HOLISTIC PSYCHOLOGY.

**organismic valuing process** in client-centered theory, the presumed healthy and innate internal guidance system that a person can use to achieve self-actualization. One goal of treatment within the client-centered framework is to help the client listen to this inner guide. See CLIENT-CENTERED THERAPY.

**organismic variable** one of the four factors considered in behavioral assessment using the SORC system, referring to the physiological and psychological features of the organism that influence behavior.

**organization** *n.* **1.** a structured entity consisting of various components that interact to perform one or more functions. Business, industrial, and service entities are constituted in this way. **2.** in GESTALT PSYCHOLOGY, an integrated perception composed of various components that appear together as a single whole, such as a face. See GESTALT PRINCIPLES OF ORGANIZATION. **3.** in memory research, the structure discovered in or imposed upon a set of items in order to guide memory performance. **4.** in PIAGETIAN THEORY, the coordinated biological activities of the organism as determined by genetic factors, interactions with the environment, and level of maturation. Inherent in this theory is the concept that every intellectual operation is related to all other acts of intelligence. Such mental processes become increasingly organized, initially developing through reflex behavior and responses to immediate stimulation and gradually becoming self-sustaining, self-generating, and capable of reflecting the child's own thoughts. See FUNCTIONAL INVARIANT. —**organizational** *adj.*

**organizational approach** in the study of emotion, a conceptual framework, based on GENERAL SYSTEMS THEORY, that emphasizes the role of emotions as regulators and determinants of both intrapersonal and interpersonal behaviors, as well as stressing the adaptive role of emotions. The organizational approach also emphasizes how perception, motivation, cognition, and action come together to produce important emotional changes.

**organizational assessment** activities involved in evaluating the structure, process, climate, and other environmental factors that influence the effectiveness of an or-

ganization and the morale and productivity of employees. General or specific evaluations (e.g., of readiness to change, job satisfaction, turnover) may be performed by practitioners from a variety of disciplines, including CONSULTING PSYCHOLOGY and INDUSTRIAL AND ORGANIZATIONAL PSYCHOLOGY.

**organizational behavior management (OBM)** the application of APPLIED BEHAVIOR ANALYSIS to individuals and groups in business, industry, government, and human service settings. OBM focuses on organizational problems such as lack of knowledge and skills, occupational injuries, and productivity improvement. Interventions include those that are antecedent-based, such as task clarification, equipment modification, GOAL SETTING, and training, and those that are consequence-based, such as information feedback, praise, and monetary and nonmonetary rewards.

**organizational career** see PROTEAN CAREER.

**organizational citizenship behavior (OCB)** an action taken by an employee to benefit the organization that is not formally required by the job or that exceeds the formal requirements (e.g., voluntarily helping a coworker with a computer problem).

**organizational climate** the general character of the total organizational environment as perceived by those who work within it. It is an expression of the ORGANIZATIONAL CULTURE.

**organizational commitment** an employee's dedication to an organization and wish to remain part of it. Organizational commitment is often described as having both an emotional or moral element (AFFECTIVE COMMITMENT) and a more practical element (CONTINUANCE COMMITMENT).

**organizational culture** a distinctive pattern of thought and behavior shared by members of the same organization and reflected in their language, values, attitudes, beliefs, and customs. The culture of an organization is in many ways analogous to the personality of an individual. See also ATTRACTION–SELECTION–ATTRITION MODEL; OCCUPATIONAL CULTURE.

**organizational culture analysis** a comprehensive organizational development intervention in which groups of managers and employees meet to describe the organizational culture and identify those aspects of the culture that are helpful to achieving the goals of the organization and those that are hindrances. [developed by Swiss-born U.S. psychologist Edgar H. Schein (1928– )]

**organizational development (OD)** a subfield within INDUSTRIAL AND ORGANIZATIONAL PSYCHOLOGY concerned with the planned improvement of ORGANIZATIONAL EFFECTIVENESS through analyzing ORGANIZATIONAL STRUCTURES and climates, maximizing the satisfaction of individuals and work groups, and facilitating organizational change. See also CHANGE MANAGEMENT.

**organizational dynamics** those forces and processes that stimulate growth, development, and change within an organization. See GROUP DYNAMICS; SOCIAL DYNAMICS.

**organizational effect** a long-term effect of hormonal action typically occurring in fetal development or the early postnatal period that leads to permanent changes in behavior and neural functioning. For example, the presence of testosterone in young male rats leads to long-term male-typical behavior, and female rats can be masculinized by neonatal exposure to testosterone. Compare ACTIVATIONAL EFFECT.

**organizational effectiveness** a multidimensional construct defining the degree of success achieved by an organization. According to a GOAL-ATTAINMENT MODEL, effectiveness is the extent to which the organization is able to achieve its goals in an efficient manner. According to a SYSTEM MODEL OF EVALUATION, effectiveness is the organization's ability to achieve long-term survival, which involves acquiring resources, adapting to changes in the environment, and maintaining the internal health of the system. From an ecological perspective, effectiveness is the ability of the organization to minimally satisfy the expectations of its strategic constituencies. All of these factors and more could be included in an assessment of an organization's effectiveness.

**organizational efficiency** see EFFICIENCY.

**organizational hierarchy** the chain of command in an organization, defining levels of authority and responsibility. Individuals occupying higher positions in the hierarchy have greater power than those lower in the hierarchy.

**organizational hypothesis** the hypothesis that steroids produced by the newly formed testis during development masculinize the developing brain to alter behavior permanently.

**organizational identification** a form of GROUP IDENTIFICATION in which an employee defines himself or herself in terms of involvement or membership in a particular corporation or other type of workplace. A growing body of evidence indicates that organizational identification underpins a range of important outcomes in work settings.

**organizational justice** employee perceptions of how fair an organization is. It consists of perceptions of the fairness of outcomes that employees receive (**distributive justice**) and the fairness of the procedures used in distributing these outcomes (**procedural justice**). See also EQUITY THEORY.

**organizational politics** behavior by individuals in an organization that is intended to further their own interests or the interests of a particular unit or department over the interests of other individuals or units.

**organizational psychology** see INDUSTRIAL AND ORGANIZATIONAL PSYCHOLOGY.

**organizational structure** the arrangement and interrelationship of the various parts or elements of an organization. Organizational structures can be described on several dimensions, including simple versus complex, centralized versus decentralized, and hierarchical versus non-hierarchical. A distinction can also be made between the FORMAL ORGANIZATIONAL STRUCTURE and the informal structures of an organization.

**organized offender** the type of offender who carefully plans his or her crimes and who is typically more intelligent and less socially isolated than a DISORGANIZED OFFENDER. This distinction is useful when profiling violent offenders (see CRIMINAL PROFILING).

**organ language** in the context of classical psychoanalytic explanations of PSYCHOSOMATIC illness, the bodily expression of emotional conflict or disturbance. Some believe that understanding the significance to the patient of the organ affected by the illness is essential for accurate diagnosis and treatment. For example, chronic lumbago (lower backache) with no identifiable organic cause may mean that the patient is feeling put upon, is being a martyr, or is aiming too low in life. Also called **organ speech**.

**organ of Corti** a specialized structure that sits on the BASILAR MEMBRANE within the cochlea in the inner ear. It contains the HAIR CELLS (the sensory receptors for hearing), their nerve endings, and supporting cells. See also DEITERS CELLS; TECTORIAL MEMBRANE. [Alfonso Corti (1822–1876), Italian anatomist]

**organogenesis** *n.* 1. the formation of organs during development. 2. see SOMATOGENESIS. —**organogenic** or **organogenetic** *adj.*

**organ speech** see ORGAN LANGUAGE.

**organum vasculosum of the lamina terminalis (OVLT)** one of the CIRCUMVENTRICULAR ORGANS where the BLOOD–BRAIN BARRIER is weak, enabling neurons there to monitor substances in the blood.

**orgasm** *n.* the climax of sexual stimulation or activity, when the peak of pleasure is achieved, marked by the release of tension and rhythmic contractions of the perineal muscles, anal sphincter, and pelvic reproductive organs. In men, orgasm is also accompanied by the emission of semen (EJACULATION); in women, it is accompanied by contractions of the wall of the outer third of the vagina. See also SEXUAL-RESPONSE CYCLE. —**orgasmic** or **orgastic** *adj.*

**orgasmic dysfunction** an inability to reach orgasm in general or with certain forms of sexual stimulation. Principally occurring in women, it may be primary, in which a woman has never been able to achieve an orgasm with any type of stimulation, with or without a partner; secondary, in which a woman had previously been but is currently unable to attain orgasm through physical contact; or situational, in which a woman is unable to experience orgasm with a particular partner or in a particular situation. See also FEMALE ORGASMIC DISORDER; MALE ORGASMIC DISORDER; PREMATURE EJACULATION.

**orgasmic phase** see SEXUAL-RESPONSE CYCLE.

**orgasmic platform** the vascular tissue at the outer portion of the vagina and the labia minora that becomes engorged during sexual arousal or coitus.

**orgasmic reconditioning** a behavioral treatment aimed at altering the deviant sexual preferences of individuals who commit SEX OFFENSES, including rape, pedophilia, and child molestation. The technique has been inappropriately applied to alter homosexual behavior as well. In the treatment as initially formulated in 1970 by clinical psychologist John N. Marquis, participants masturbate to deviant materials (e.g., pictures, videos) and just prior to orgasm switch to nondeviant material. Individuals gradually introduce the nondeviant imagery earlier and earlier in the process, so as to eventually associate only the nondeviant theme with the pleasurable experience of orgasm and to supplant deviant sexual arousal patterns altogether. Several variations of the original procedure exist, including one in which masturbation occurs in a laboratory and physiological responses (e.g., changes in penile tumescence and heart rate) to stimuli are measured; one in which deviant and nondeviant themes are alternated weekly or daily; and one in which deviant imagery is omitted entirely. Despite its promotion by some clinicians as a useful technique for treating sexual deviance, orgasmic reconditioning has little empirical support; there is limited evidence to suggest its success as one component of a comprehensive behavioral change program. Also called **masturbatory reconditioning**.

**orgastic potency** the ability of a man or woman to

achieve full orgasm during the sex act. [first used by Wilhelm Reich (1897–1957), Austrian psychoanalyst]

**orgone** *n.* the “life energy” and creative force in nature that was believed by Austrian psychoanalyst Wilhelm Reich (1897–1957) to pervade the universe. According to Reich, orgone was emitted by energy vesicles called *bions*, which he claimed to find in organic material. He also posited that it related to cosmic radiation and speculated that it might be responsible for the origin of life from earth and water (biogenesis), as well as the formation of weather patterns and the sexual potency of human beings.

**orgone therapy** the therapeutic approach of Austrian psychoanalyst Wilhelm Reich (1897–1957), based on the concept that the achievement of “full orgasmic potency” is the key to psychological well-being. Reich believed the orgasm to be the emotional-energy regulator of the body, the purpose of which is to dissipate sexual tensions that would otherwise be transformed into neuroses. He further held that the orgasm derives its power from a hypothetical cosmic force, ORGONE energy, which accounts not only for sexual capacity but also for all functions of life. The psychoanalytic community largely rejected Reich’s highly unorthodox theories and approaches. Also called **vegeto-therapy**.

**orgy** *n.* a type of social gathering at which a number of people engage in unrestrained sexual activity, often with other forms of revelry, including singing, dancing, and drinking. —**orgiastic** *adj.*

**oriental nightmare-death syndrome** see BANGUNGUT.

**orientation** *n.* **1.** awareness of the self and of outer reality; that is, the ability to identify one’s self and to know the time, the place, and the person one is talking to. See also REALITY ORIENTATION. **2.** the act of directing the body or of moving toward an external stimulus, such as light, gravity, or some other aspect of the environment. **3.** in vision, the degree of tilt of the long axis of a visual stimulus. For example, a vertical bar is oriented at 0°; a horizontal bar is oriented at 90°. Many neurons in the visual system respond most vigorously to a stimulus of a certain orientation: They are said to be **orientation selective**. See also ORIENTATION COLUMN. **4.** relative position or alignment, for example, of a body part or an atom in a chemical compound. **5.** the process of familiarizing oneself with a new setting (e.g., a new home, neighborhood, city) so that movement and use do not depend upon memory cues, such as maps, and eventually become habitual. **6.** an individual’s general approach, ideology, or viewpoint. **7.** the process of introducing a newcomer to a job, company, educational institution, or other environment. —**orient** *vb.*

**orientation and mobility training (O&M training)** guided instruction in the cognitive and motor skills necessary for people with visual impairment to orient themselves in space and to move safely in the environment (sidewalk, street corner, crosswalk, stairwell, kitchen, bathroom, classroom, office building, etc.). O&M training includes instruction in the use of the long cane or the handling of a service animal (e.g., guide dog), as well as in the use of available senses, including any residual vision, to enable the individual to navigate safely. O&M training is a key component of VISION REHABILITATION and is usually provided by professional O&M specialists.

**orientation column** a vertical slab of STRIATE CORTEX

in which all the neurons are maximally responsive to stimuli of the same orientation. Adjacent columns have slightly different orientation preferences, so that electrode penetration tangential to the cortical surface that passes through many columns would encounter neurons with orientation preferences that shift smoothly around a reference axis. Compare OCULAR DOMINANCE COLUMN. [first described in the 1960s and 1970s by U.S. neurophysiologist David Hubel (1926–2013) and Swedish neurophysiologist Torsten Wiesel (1924– )]

**orientation illusion** see ILLUSION OF ORIENTATION.

**orienting response** **1.** a behavioral response to an altered, novel, or sudden stimulus, such as turning one’s head toward an unexpected noise. Physiological components of the orienting response have been identified as well, including dilation of pupils and blood vessels and changes in heart rate and electrical resistance of the skin. [described in 1927 by Ivan PAVLOV] **2.** any response of an organism in relation to the direction of a specific stimulus. Also called **orienting reflex**. See TAXIS; TROPISM.

**original cause** the first or primary cause of a phenomenon; that is, the first in a sequence of causes producing a particular effect. See CAUSAL CHAIN; REMOTE CAUSE.

**originality** *n.* see CREATIVITY.

**original sin** in the Judeo-Christian tradition, a state of sin held to be innate in all humankind as a result of the first sin committed by Adam and Eve, which led to their expulsion from the Garden of Eden. Although modern theologians tend to interpret this story symbolically rather than historically, the idea that there is a kind of hereditary stain or fundamental flaw in human nature remains important in Christian thought. The doctrine of original sin has sometimes been reinterpreted in psychological, existential, or socioeconomic terms.

**origin-of-language theory** see LANGUAGE-ORIGIN THEORY.

**Orne effect** the tendency for typical study participants to try to discern the wishes or intent of an experimenter and to try to respond in accordance with these wishes or intent. See DEMAND CHARACTERISTICS. [Martin T. ORNE]

**ornithinemia** *n.* an excess of the amino acid ornithine in the blood, possibly due to an inborn error of amino acid metabolism or to liver disease.

**oro-** (or-) *combining form* mouth.

**orofacial apraxia** see APRAXIA.

**orofacial dyskinesia** behavior characterized by abnormal chewing, mouthing, and tongue movements that resemble symptoms of TARDIVE DYSKINESIA.

**orogenital activity** stimulation of the genitalia by the mouth or tongue. The activity may be performed by heterosexual or homosexual couples, either as a precoital form of stimulation or carried to orgasm. Application of the mouth to the male genitalia is called FELLATIO; application of the mouth to the female genitalia is known as CUNNILINGUS. Also called **buccal intercourse**; **oral-genital contact**. See also ORAL SEX.

**oropharynx** *n.* the portion of the PHARYNX at the back of the mouth, extending from the level of the hyoid bone (at the base of the tongue) to the SOFT PALATE. It contains the functional crossing of the alimentary and respiratory canals. —**oropharyngeal** *adj.*

**orphanin FQ** see ENDOGENOUS OPIOID; OPIOID RECEPTOR.

**orphenadrine** *n.* an ANTICHOLINERGIC DRUG used in the treatment of drug-induced parkinsonian symptoms, such as those produced by conventional antipsychotics, and for the relief of localized muscle spasms (see MUSCLE RELAXANT). Orphenadrine is sold in combination with ANALGESICS (e.g., with aspirin and caffeine as Norgesic in the United States). U.S. trade name: **Norflex**.

**or rule** see ADDITION RULE.

**Ortgeist** *n.* German, “spirit of a place”: the influence of the physical or cultural environment on the development of social, economic, and artistic life in a particular place. See also ZEITGEIST.

**orthergasia** *n.* see EUERGASIA.

**ortho-** (**orth-**) *combining form* **1.** straight or perpendicular (e.g., ORTHOGENESIS). **2.** correct or corrective (e.g., ORTHOPTICS).

**orthodox psychoanalysis** see CLASSICAL PSYCHOANALYSIS.

**orthodox sleep** a less common name for NREM SLEEP.

**orthogenesis** *n.* **1.** the theory that the evolution of a species follows a direction determined by factors inherent to its organisms and that successive generations follow the same plan irrespective of NATURAL SELECTION. **2.** the theory that all cultures pass through the same sequential stages. —**orthogenetic** *adj.*

**orthogenetic principle** the hypothesis that development of all aspects of functioning (including cognition, perception, etc.) progresses from lack of differentiation to increasing differentiation, articulation, and hierarchic integration. [proposed in 1957 by Heinz WERNER]

**orthogonal** *adj.* **1.** describing a set of axes at right angles to one another, which in graphical representations of mathematical computations (such as FACTOR ANALYSIS) and other research indicates uncorrelated (unrelated) variables. Compare OBLIQUE. **2.** denoting a research design in which there are an equal or proportional number of participants across study conditions. See ORTHOGONAL DESIGN.

**orthogonal coding** see CONTRAST CODING.

**orthogonal contrast** in a FACTORIAL ANALYSIS OF VARIANCE, a set of nonredundant comparisons among the mean values for different samples. In other words, the set contains no overlapping information, so that the results from one comparison provide no information about the results of the second comparison. Also called **orthogonal comparison**.

**orthogonal design** an experimental design involving multiple INDEPENDENT VARIABLES in which each level of one variable is combined with each level of every other and in which all of the resulting conditions contain an equal or proportional number of participants or observations.

**orthogonal rotation** a transformational system used in FACTOR ANALYSIS in which the different underlying or LATENT VARIABLES are required to remain separated from or uncorrelated with one another. It is one of two types of FACTOR ROTATION used to identify a simpler structure pattern or solution, the other being OBLIQUE ROTATION. Also called **rigid rotation**.

**orthographic distinctiveness effect** see DISTINCTIVENESS EFFECT.

**orthography** *n.* **1.** the formal writing system of a language. **2.** the study of the conventions of spelling in such a system. —**orthographic** *adj.*

**orthokinesis** *n.* an increase (positive orthokinesis) or decrease (negative orthokinesis) in the speed or frequency of movement, particularly in relation to increases or decreases in stimulation. —**orthokinetic** *adj.*

**orthomolecular medicine** a form of COMPLEMENTARY AND ALTERNATIVE MEDICINE that uses MEGAVITAMIN THERAPY and other nutritional approaches to prevent or treat physical and mental disorders. Proponents of this approach believe that biochemical imbalances in the body are a contributing factor to disease and that using vitamins, minerals, and other substances natural to the body corrects these imbalances. Also called **orthomolecular therapy**. [conceived in 1968 by U.S. biochemist Linus Pauling (1901–1994)]

**orthonasal olfaction** sensations of smell arising via the introduction of an odorant through the nostrils. This is the common route for olfactory sensation. Compare RETRONASAL OLEFACTION.

**orthopedic cane** see CANE.

**orthopsychiatry** *n.* an interdisciplinary approach to mental health in which psychiatrists, psychologists, social workers, pediatricians, sociologists, nurses, and educators collaborate on the early treatment of mental disorders, with an emphasis on their prevention. —**orthopsychiatric** *adj.* —**orthopsychiatrist** *n.*

**orthoptics** *n.* **1.** the study and treatment of faulty binocular vision. **2.** the use of eye exercises to coordinate the vision in the left and right eyes of individuals with extrinsic EYE MUSCLE imbalance. —**orthoptic** *adj.* —**orthoptist** *n.*

**orthoptoscope** *n.* see AMBLYOSCOPE.

**Ortho-Rater** *n.* a portable visual testing device used for the rapid assessment of visual acuity, color vision, and depth perception. It is commonly used in the United States to test the vision of individuals applying for a driver's license.

**orthorexia nervosa** an obsessive concern with eating a healthy or “pure” diet that is typically very restrictive and more focused on wellness than weight loss. Individuals may insist on eating only certain foods (e.g., those grown locally) or avoid certain food groups altogether (e.g., meat, eggs, dairy, wheat products), often resulting in extremely low caloric intake, risk of malnutrition, and in extreme cases, death. There is some debate about whether orthorexia nervosa is a distinct disorder or a form of ANOREXIA NERVOSA or OBSESSIVE-COMPULSIVE DISORDER. [described in 1997 by U.S. physician Steven Bratman]

**orthostatic hypotension** a drop in blood pressure when moving from a lying or sitting position to a standing position. Blood pressure is normally maintained during changes in position by activation of BARORECEPTORS in the walls of the heart and the major arteries. Activation of these receptors in turn activates ALPHA-ADRENERGIC RECEPTORS in peripheral blood vessels, leading to arterial constriction and maintenance of blood pressure. Numerous psychotropic drugs (e.g., antidepressants, antipsychotics) block the activity of peripheral alpha-adrenergic receptors, leading to orthostatic hypotension and an increased risk of falls, particularly in older adults. Orthostatic hypotension can also be caused by such disorders as diabetes mellitus,

amyloidosis, and Parkinson's disease. Also called **postural hypotension**.

**orthotics** *n.* a medical specialization concerned with the fitting and use of braces and other orthopedic (supportive or corrective) devices. Compare PROSTHETICS.

**oscillator circuit** a circuit that produces a repeating pattern of output. Unlike an ENDOGENOUS OSCILLATOR, it is not necessarily biological. For example, oscillator circuits can be found in computers, and the term itself is often associated with artificial NEURAL NETWORKS.

**oscillatory interference model** see GRID CELL.

**oscillograph** *n.* an instrument, often used in studies of bodily functions, that makes graphic recordings of wave forms of electrical energy.

**oscillometer** *n.* an instrument for measuring oscillations (variations or fluctuations), especially those associated with bodily functions, such as variations in arterial pulsation.

**oscillopsia** *n.* the sensation of perceiving oscillating movement of the environment. This illusory movement can be caused by (bilateral) vestibular cerebellar injury, paralysis of extrinsic eye muscles, or nystagmus, but it may also be due to cerebral disorders (e.g., seizures, occipital lobe infarction).

**oscilloscope** *n.* an electronic device that records and displays visually an electrical or sound wave on a fluorescent screen of a cathode ray tube.

**OSHA** abbreviation for OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION.

**-osis** *suffix* **1.** diseased condition (e.g., NEUROSIS). **2.** process or state (e.g., METAMORPHOSIS). **3.** formation or development (e.g., GLIOSIS).

**osmolagnia** *n.* sexual interest in and pleasure derived from smells emanating from the body, especially from the genitals.

**osmolality** *n.* the concentration of an osmotic solution, measured in osmoles per liter of solution.

**osmometer** *n.* **1.** an instrument for measuring OSMOTIC PRESSURE or the amount of osmotic action (passage across a membrane of solutes from higher to lower concentrations) in different liquids. **2.** an early type of OLFACTOMETER involving a sealed chamber containing an ODORANT. The participant opened the chamber, inhaled, and reported the odor detected.

**osmometric thirst** thirst resulting from a loss of cellular fluids and a relative increase in OSMOTIC PRESSURE. Also called **intracellular thirst**; **osmotic thirst**. Compare HYPOVOLEMIC THIRST.

**osmoreceptor** *n.* a hypothetical receptor in the HYPOTHALAMUS that responds to changes in the concentrations of various substances in the body's extracellular fluid and to cellular dehydration. It also regulates the secretion of VASOPRESSIN and contributes to thirst.

**osmoregulation** *n.* a complex mechanism for maintaining the optimum content of water and electrolytes in the body cells and extracellular fluid of an organism. Also called **water regulation**.

**osmosis** *n.* the passive movement of solvent molecules through a differentially permeable membrane (e.g., a cell membrane) separating two solutions of different concen-

trations. The solvent tends to flow from the weaker solution to the stronger solution. —**osmotic** *adj.*

**osmotic pressure** the pressure required to prevent the passage of water (or other solvents) through a semipermeable membrane (e.g., a cell membrane) from an area of low concentration of solute to an area of higher concentration. It results from the spontaneous movement of molecules that occurs when different concentrations are separated by a semipermeable membrane.

**OSpan** abbreviation for OPERATION SPAN.

**osphresiolagnia** *n.* sexual arousal or erotic experience produced by odors.

**osphresiophilia** *n.* an abnormal attraction to odors.

**osseous labyrinth** see LABYRINTH.

**ossicles** *pl. n.* any small bones, but particularly the auditory ossicles: the chain of three tiny bones in the middle ear that transmit sound vibrations from the tympanic membrane (eardrum) to the OVAL WINDOW of the inner ear. They are the **malleus** (or hammer), which is attached to the tympanic membrane; the **incus** (or anvil); and the **stapes** (or stirrup), whose footplate nearly fills the oval window. The ossicles allow efficient transmission of sound from air to the fluid-filled cochlea.

**osteomalacia** *n.* see CALCIUM-DEFICIENCY DISORDERS.

**osteopathy** *n.* a health care system based on the belief that many disorders are caused by structural defects in the musculoskeletal system. It focuses on primary care, prevention, a HOLISTIC HEALTH approach, and—especially—manipulation of the affected joints and muscles (particularly of the spine) in conjunction with traditional medical, surgical, and pharmacological treatment to address underlying disease processes. Also called **osteopathic medicine**. See also COMPLEMENTARY AND ALTERNATIVE MEDICINE. —**osteopath** *n.* —**osteopathic** *adj.*

**osteopetrosis** *n.* a rare genetic disorder characterized by increased bone density, which may lead to abnormalities in bone shape or size, due to abnormal resorption (breakdown, removal, and replacement) of bone. Although the bones are highly dense, they are brittle and liable to fracture.

**osteoporosis** *n.* see CALCIUM-DEFICIENCY DISORDERS.

**-ostomy** *suffix* see -STOMY.

**ostracism** *n.* an extreme form of rejection in which one is excluded and ignored in the presence of others. Ostracism has powerful negative effects on psychological well-being and is detrimental to multiple domains of self-functioning. Specific consequences include not only sadness, hurt feelings, and changes in social perception (e.g., increased likelihood of interpreting ambiguous situations as threatening) but also decreased satisfaction of four fundamental human needs: belonging, control, self-esteem, and meaningful existence. Evidence from both human and nonhuman animal research suggests that ostracism activates the ANTERIOR CINGULATE CORTEX, the same area of the brain involved in experiencing both physical and psychological pain.

**Ostwald color system** a method of organizing chromatic and achromatic samples. The system consists of 24 hues arranged around the outside of a circle, with the complementary colors for each hue located along the circle's diameters. By combining adjacent colors, any color on



the **Ostwald scale** can be produced. [Wilhelm **Ostwald** (1853–1932), German chemist and physicist]

**OT** abbreviation for OCCUPATIONAL THERAPY.

**ot-** combining form see OTO-.

**OTC** abbreviation for OVER-THE-COUNTER.

**Othello syndrome** see DELUSIONAL JEALOUSY. [derived from the name of the protagonist in William Shakespeare's tragedy *Othello*]

**other-directed** *adj.* describing or relating to people whose values, goals, and behavior stem primarily from identification with group or collective standards rather than with individually defined standards. Also called **other-directed**. Compare INNER-DIRECTED; TRADITION-DIRECTED. [introduced by U.S. sociologist David Riesman (1909–2002)]

**other-total ratio (OTR)** a formula for predicting the level of SELF-AWARENESS experienced by individuals in social settings, based on the assumption that they will become more self-attentive and thus more concerned with matching standards of appropriate behavior as the relative size of their subgroup decreases. It is given as  $OTR = \frac{\text{number of other people who are not part of (i.e., who oppose) the target subgroup}}{\text{total number of people in the overall group}}$ . Thus, the OTR for a single minority member facing a five-person majority would be  $\frac{5}{6}$ , or .83. [described in 1983 by U.S. social psychologist Brian Mullen (1955–2006)]

**otic** *adj.* pertaining to the ear.

**Otis–Lennon School Ability Test (OLSAT)** a multiple-choice assessment of verbal and nonverbal reasoning abilities that are predictors of success in school. Available in different levels for students in kindergarten through Grade 12, it currently consists of various tasks (e.g., defining words, detecting likenesses and differences, following directions, recalling words and numbers) designed to measure verbal comprehension and verbal, pictorial, figural, and quantitative reasoning. The OLSAT was originally published in 1979 as a modification and replacement of the earlier **Otis–Lennon Mental Ability Test**, which itself was a revision of the **Otis Quick Scoring Mental Ability Tests** (originally published in the mid-1930s). Now in its eighth edition (published in 2003), the OLSAT is usually administered in groups. [Arthur S. **Otis** (1886–1963) and Roger T. **Lennon** (1916–1985), U.S. psychologists]

**otitis media** an inflammation or infection of the middle ear commonly associated with sinusitis, upper respiratory infections, or allergies. It can result in a conductive hearing loss (see CONDUCTION DEAFNESS) that generally resolves with symptom treatment. **Acute otitis media** is common in young children, resulting from viral or bacterial infection. In **serous otitis media**, a thick fluid fills the middle ear. In **adhesive otitis media**, permanent adhesions develop in the middle ear due to the continued presence of fluid after the infection itself has been controlled. These adhesions can damage the OSSICLES.

**oto-** (ot-) combining form ear.

**otoacoustic emissions (OAEs)** weak sounds produced by the COCHLEA that are recorded using a microphone placed in the EXTERNAL AUDITORY MEATUS. **Spontaneous otoacoustic emissions (SOAEs)** are recorded in the absence of externally presented sound. **Evoked otoacoustic emissions (EOAEs)** are responses to sounds, typically transients

(clicks), sustained PURE TONES, or pairs of tones. EOAEs are not the result of reflections, and thus the alternative term **cochlear echo** is not technically correct. All OAEs appear to require normal cochlear function and provide strong evidence for an active mechanical process occurring within the cochlea, probably mediated by movement of the outer HAIR CELLS. Measurement of EOAEs is becoming widespread in audiological assessment. Also called **cochlear emissions**.

**otoconium** *n.* (*pl.* **otoconia**) see OTOLITH.

**otohemineurasthenia** *n.* a unilateral deafness for which no organic cause can be found.

**otolaryngology** *n.* the medical discipline concerned with the assessment and treatment of diseases of the ears, nose, and throat and associated structures of the head and neck.

**otolith** *n.* any of numerous tiny calcium particles embedded in the gelatinous matrix of the VESTIBULAR SACS of the inner ear. See MACULA. Also called **otoconium**; **statoconium**.

**otology** *n.* the medical discipline concerned with the study, diagnosis, and treatment of disorders of the ear. —**otological** *adj.* —**otologist** *n.*

—**otomy** *suffix* see -TOMY.

**otoneurology** *n.* the study of neurology as related to audition. —**otoneurological** *adj.* —**otoneurologist** *n.*

**otopalatodigital spectrum disorders** a group of related X-linked dominant disorders caused by mutations in the *FLNA* gene. The disorders include **otopalatodigital syndrome Types 1 and 2**, **frontometaphyseal dysplasia**, and **Melnick–Needles syndrome**. In general, these disorders involve hearing loss resulting from malformed ossicles, cleft palate or other problems in the development of the roof of the mouth, and skeletal abnormalities in the fingers and toes. Males have more severe symptoms than do females, and males with otopalatodigital syndrome Type 2 or Melnick–Needles syndrome do not live beyond their 1st year.

**otosclerosis** *n.* a formation of spongy bone that develops in the middle ear and immobilizes the stapes at the point of attachment to the oval window facing the inner ear. Otosclerosis is marked by progressive deafness as the ossicles fail to transmit vibrations from the tympanic membrane to the inner ear. It is considered hereditary. —**otosclerotic** *adj.*

**ototoxic** *adj.* damaging to the ears, especially the structures for hearing and balance within the inner ear. —**ototoxicity** *n.*

**OTR** abbreviation for OTHER–TOTAL RATIO.

**ought self** in analyses of self-concept, a mental representation of a set of attributes that one is obligated to possess according to social norms or one's personal responsibilities.

**Ouija board** trade name for a board marked with numbers and letters on which a movable pointer (planchette), touched by the participants, spells out messages under the supposed guidance of spirits. The process can be seen as a form of AUTOMATIC WRITING. [from a blend of the French and German words for *yes*: *oui* and *ja*]

**outbreeding** *n.* **1.** the mating of humans who are unrelated or who originate from different groups. It is thus the converse of INBREEDING. **2.** the mating of a nonhuman animal with an unrelated or distantly related member of the

same species. This may produce HYBRID VIGOR. Also called **crossbreeding**.

**outcome** *n.* **1.** the result of an experiment, treatment, intervention, or other event. For example, the test scores of students in a classroom who have been taught with a new lecture method comprise an outcome, as does a client's condition after psychotherapy. **2.** in GAME THEORY, the factor determining a particular set of payments, one set being paid to each participant. **3.** in INTERDEPENDENCE THEORY, the net profit or loss one derives from an interaction after all of one's benefits and costs are considered. **4.** in EQUITY THEORY, the benefits people receive from their activities (e.g., pay, intrinsic gratification, recognition).

**outcome dependence** a social situation in which one person's outcomes, including the rewards or punishments experienced, are determined in whole or in part by the actions of another person. Compare OUTCOME INTERDEPENDENCE. [based on the SOCIAL EXCHANGE THEORY of John W. THIBAUT and Harold H. KELLEY as described in their book *The Social Psychology of Groups* (1959)]

**outcome evaluation** a process used to decide whether a program has achieved its stated goals and had the desired impact on the participants. Also called **payoff evaluation**. See also IMPACT ANALYSIS; SUMMATIVE EVALUATION.

**outcome expectancies** cognitive, emotional, and behavioral outcomes that individuals believe are associated with future, or intended, behaviors (e.g., alcohol consumption, exercise) and that are believed to either promote or inhibit these behaviors.

**outcome interdependence** a social situation in which two or more people have mutual influence over one another's outcomes. Compare OUTCOME DEPENDENCE. [based on the SOCIAL EXCHANGE THEORY of John W. THIBAUT and Harold H. KELLEY as described in their book *The Social Psychology of Groups* (1959)]

**outcome measures** assessments of the effectiveness of an intervention on the basis of measurements taken before, during, and after the intervention.

**outcome research** a systematic investigation of the effectiveness of a type or technique of intervention (e.g., a new form of psychotherapy for treating depression) or of the comparative effectiveness of different intervention types or techniques (e.g., cognitive behavior therapy vs. drug therapy for depression). In other words, outcome research focuses on determining whether participants benefit from receiving an intervention. Compare PROCESS RESEARCH.

**outcome variable** see DEPENDENT VARIABLE.

**outercourse** *n.* noncoital sexual activity, which may include achieving orgasm by manual stimulation of the genitals or by ORAL SEX.

**outer-directed** *adj.* see OTHER-DIRECTED.

**outer ear** see EXTERNAL EAR.

**outer hair cells** see HAIR CELL.

**outer nuclear layer** the layer of cell bodies of the rods and cones in the retina. Also called **outer granular layer**.

**outer plexiform layer** the synaptic layer in the retina in which contacts are made between PHOTORECEPTORS, RETINAL BIPOLAR CELLS, and RETINAL HORIZONTAL CELLS.

**outer psychophysics** an attempt to establish the direct

relationship between the physical intensity of sensory stimuli and the intensity of the related mental experience. Compare INNER PSYCHOPHYSICS. See PSYCHOPHYSICAL LAW. [introduced by Gustav Theodor FECHNER]

**outgroup** *n.* **1.** in general, any group to which one does not belong or with which one does not identify. **2.** a specific rival group that INGROUP members ridicule, derogate, and sometimes are aggressive toward. Also called **they-group**. [defined in 1906 by U.S. sociologist William G. Sumner (1840–1910)]

**outgroup extremity effect** the tendency to describe and evaluate OUTGROUP members, their actions, and their products in extremely positive or extremely negative ways. Compare INGROUP EXTREMITY EFFECT. See also LINGUISTIC INTERGROUP BIAS.

**outgroup homogeneity bias** the tendency to assume that the members of other groups are very similar to each other, particularly in contrast to the assumed diversity of the membership of one's own group. See also GROUP ATTRIBUTION ERROR; GROUP FALLACY.

**outing** *n.* revealing to others one's own or another person's homosexual orientation. The term refers to COMING OUT of the closet (see CLOSET HOMOSEXUAL). —**out** *vb.*

**outlier** *n.* an extreme observation or measurement, that is, a score that significantly differs from all others obtained. For instance, assume a researcher administered an intelligence test to a group of people. If most individuals obtained scores near the average IQ of 100 yet one person had an IQ of 150, the latter score would be an outlier. Outliers can have a high degree of influence on summary statistics (e.g., the MEAN and STANDARD DEVIATION can be pulled severely toward outliers) and on estimates of PARAMETER values, and they may distort research findings if they are the result of error.

**out-of-body experience** a dissociative experience during which the individual imagines or feels that his or her mind, soul, or spirit has left the body and is acting or perceiving independently. Such experiences are sometimes reported by those who have recovered from a NEAR-DEATH EXPERIENCE; they have also been reported by those using hallucinogens or under hypnosis. A significant number have been reported as occurring when the reporter was asleep or falling asleep. Certain occult or spiritualistic practices may also attempt to induce such experiences. See ASTRAL PROJECTION.

**outpatient** *n.* a person who obtains a diagnosis, treatment, or other service at a hospital, clinic, physician's office, or other health care facility without overnight admission. See also AMBULATORY CARE. Compare INPATIENT.

**outpatient commitment** a form of court-ordered psychiatric or psychological treatment in which individuals are allowed to remain in the community so long as they are closely monitored and continue to receive treatment.

**outpatient services** health care services performed for registered ambulatory patients in hospital units, clinics, doctors' offices, and mental health centers.

**outplacement counseling** practical and psychological assistance given to workers whose employment with an organization has been terminated. It can include VOCATIONAL GUIDANCE and coaching in job-hunting skills as well as psychological help in dealing with the transition. The program is usually conducted by specialty firms outside the organization. See also VOCATIONAL COUNSELING.

**output** *n.* in computing contexts, the information a computer produces. Compare INPUT.

**output interference** disruption in the recall of learned material during which the act (or process) of retrieving one item interrupts the ability to recall other items. For example, in the attempt to recall a finite set of items (e.g., words on a list, the names of people in a group), the retrieval of some items can interfere with the retrieval of other items in the same set.

**outreach** *n.* activity that brings clinical (e.g., medical or mental health consultation), educational (e.g., class modules providing health information), or practical services (e.g., transportation to clinics or schools) to a community or population that may not otherwise have easy or any access to the services.

**ova** *pl. n.* see OVUM.

**oval window** a membrane-covered opening in the bony wall of the cochlea in the ear (see SCALA VESTIBULI). Vibration of the stapes (see OSSICLES) is transmitted to the oval window and into the cochlear fluids.

**O variable** see ORGANIC VARIABLE.

**ovarian follicle** see GRAAFIAN FOLLICLE.

**ovariectomy** *n.* the surgical removal of an ovary. This procedure may be performed when the ovaries are diseased or injured. Under some circumstances, as when a woman is at very high risk for ovarian cancer, it may be carried out prophylactically (see PROPHYLACTIC SURGERY). Removal of ovaries in premenopausal women will induce menopause. Also called **oophorectomy**.

**ovary** *n.* the female reproductive organ, which produces ova (egg cells) and sex hormones (estrogens and progesterone). In humans, the two ovaries are almond-shaped organs normally located in the lower abdomen on either side of the upper end of the uterus, to which they are linked by the FALLOPIAN TUBES. The ovaries of the prepubertal human female contain about 350,000 immature oocytes, of which fewer than 400 will develop into mature ova to be released at a rate of about one per month between menarche (first menstruation) and menopause. See OOGENESIS. See also GRAAFIAN FOLLICLE; MENSTRUAL CYCLE. —**ovarian** *adj.*

**overachiever** *n.* a person, such as a student, who achieves above his or her capacity as calculated and predicted by aptitude and general-intelligence tests. Some prefer to refer to **overachievement** as “achievement above predicted expectations.” Compare UNDERACHIEVER.

**overactivity** *n.* excessive, restless activity that is usually less extreme than HYPERACTIVITY.

**overage** *adj.* describing a person who is beyond the average or usual age associated with a given behavior or trait. The term is sometimes applied to a child or student who is chronologically older than the others in his or her grade. **Underage** describes a student who is younger than his or her classmates.

**overattribution bias** see FUNDAMENTAL ATTRIBUTION ERROR.

**overbreathing** *n.* see HYPERVENTILATION.

**overclassification** *n.* a phenomenon in which, at levels ranging from local schools to national patterns of education, children who are members of ethnic minority groups

are at heightened risk of being classified as SPECIAL EDUCATION students.

**overcompensation** *n.* see COMPENSATION. —**overcompensate** *vb.*

**overconfidence** *n.* a cognitive bias characterized by an overestimation of one's actual ability to perform a task successfully, by a belief that one's performance is better than that of others, or by excessive certainty in the accuracy of one's beliefs. Compare UNDERCONFIDENCE. —**overconfident** *adj.*

**overcontrolled** *adj.* denoting behavior that is inhibited and constrained, often driven by shyness or fear of rejection. The word is typically used to describe the behavior of children thought to be at risk for depression, but it may also refer to similar behavior in adults.

**overcorrection** *n.* in therapy, a technique in which a therapist asks a client who has exhibited inappropriate behavior to repeat the behavior in an appropriate but exaggerated way. Also called **positive practice**.

**overcrowding** *n.* a higher concentration of organisms per unit of space than is customary for a given species. Experimental overcrowding significantly increases abnormal behavior and aggression in rats, even when sufficient resources preclude the need for competition. In human societies, overcrowding is associated with stress but does not inevitably lead to increased aggression. See also DENSITY; OVERPOPULATION.

**overdetermination** *n.* in psychoanalytic theory, the concept that several unconscious factors may combine to produce one symptom, disorder, or aspect of behavior. Because drives and defenses operate simultaneously and derive from different layers of the personality, a single symptom may serve more than one purpose or fulfill more than one unconscious wish. Also called **multiple determination**. —**overdetermined** *adj.*

**overdispersion** *n.* in CATEGORICAL DATA ANALYSIS, a situation in which obtained observations display more variation (DISPERSION) than is predicted by a model. Overdispersion distorts STANDARD ERROR and CONFIDENCE INTERVAL estimates and is often associated with OUTLIERS or model MISSPECIFICATION.

**overdose** (OD) **1.** *n.* the ingestion of an excessive amount of a drug, with resulting adverse and potentially lethal effects. The precise toxic effects differ according to many factors, including the properties and dosage of the drug, the body weight and health of the individual, and the individual's tolerance for the drug. Overdose may occur with almost any legal or illegal drug and with some vitamins and food supplements. **2.** *vb.* to take an excessive amount of a drug.

**Overeaters Anonymous (OA)** a voluntary organization of men and women who seek to help each other understand and overcome compulsive eating disorders through a TWELVE-STEP PROGRAM. See also SELF-HELP GROUP.

**overexpectation** *n.* in CLASSICAL CONDITIONING, a decrease in responding to two (or presumably more) conditioned stimuli individually after they have been joined into a compound stimulus and then paired with the unconditioned stimulus previously used to establish each part of the compound as an independent conditioned stimulus.

**overextension** *n.* the tendency of very young children

to extend the use of a word beyond the scope of its specific meaning, such as by referring to all animals as “doggie.” Compare UNDEREXTENSION.

**overgeneralization** *n.* **1.** a cognitive distortion in which an individual views a single event as an invariable rule, so that, for example, failure at accomplishing one task will predict an endless pattern of defeat in all tasks. **2.** the process of extending something beyond the circumstances to which it actually applies. It is a common linguistic tendency of young children to generalize standard grammatical rules to apply to irregular words (e.g., pluralizing *foot* to *foots*). See OVEREXTENSION; OVERREGULARIZATION.

**overheating** *n.* excessive ambient temperature. See HEAT EFFECTS.

**overidentification** *n.* in STRUCTURAL EQUATION MODELING and similar statistical techniques, the presence of more PARAMETERS in a model than are required to correctly specify the relationships among the variables of interest. In other words, the number of known parameters exceeds the number of free parameters, allowing one or more values to be estimated in more than one way. Compare UNDERIDENTIFICATION.

**overinclusion** *n.* failure of an individual to eliminate ineffective or inappropriate responses associated with a particular stimulus.

**overintensity** *n.* a state in which one or more of the following are above the optimal level for an individual's performance: arousal, commitment, effort, assertiveness, and attentional focus. See INTENSITY.

**overjustification effect** a paradoxical effect in which rewarding (or offering to reward) a person for his or her performance can lead to lower, rather than higher, interest in the activity. It occurs when the introduction of an EXTRINSIC REWARD weakens the strong INTRINSIC MOTIVATION that was the key to the person's original high performance. Compare INSUFFICIENT JUSTIFICATION EFFECT.

**overlapping psychological tasks** in psychological testing, two tasks that overlap in time. A common finding is that performance of the second task is slowed when the stimulus for it is presented shortly after the stimulus for the first task. See PSYCHOLOGICAL REFRACTORY PERIOD.

**overlapping waves theory** the proposition that during development children rely on a variety of old and new information-processing strategies concurrently, with these strategies waxing and waning over time. [proposed by U.S. developmental psychologist Robert S. Siegler (1949– )]

**overlearning** *n.* practice that is continued beyond the point at which the individual knows or performs the task as well as can be expected. The benefits of overlearning may be seen in increased persistence of the learning over time or better retention and memory. —**overlearned** *adj.*

**overload** *n.* a psychological condition in which situations and experiences are so cognitively, perceptually, and emotionally stimulating that they tax or even exceed the individual's capacity to process incoming information. Compare UNDERLOAD. See COGNITIVE OVERLOAD; INFORMATION OVERLOAD; SENSORY OVERLOAD; STIMULUS OVERLOAD.

**overload principle** a concept stating that to increase the size or functional ability of MUSCLE FIBERS, they must be pushed close to the limit of their current ability to respond.

**overmatching** *n.* **1.** unnecessary MATCHING: the pairing of research participants on an excessive number of charac-

teristics or on characteristics having little or no potential influence upon the outcome of interest. For example, a researcher investigating a new drug treatment for cancer might create two groups whose members are of the same age and sex, administering the drug to one group and a placebo to the other group. Such group comparability would allow the researcher greater validity in attributing any changes between them to the treatment rather than to sex or age differences. If, however, the researcher were to pair the groups on such additional factors as area of residence and household income, overmatching would be present and likely to mask the true nature of the relationship under investigation and lead to statistical BIAS, such as by reducing the POWER and EFFICIENCY of analyses. **2.** see MATCHING LAW.

**overmedication** *n.* see MEDICATION.

**overpayment inequity** an employee's perception that he or she is being paid at a rate that exceeds what is fair, especially in comparison with coworkers. This can lead to dissatisfaction, tension with coworkers, and efforts to restore equity. Compare UNDERPAYMENT INEQUITY. See EQUITY THEORY.

**overpopulation** *n.* a POPULATION DENSITY that is higher than desirable and may result in OVERCROWDING and stress. Evidence from animal behavior supports the view that overcrowding increases aberrant behavior and aggression. However, some human societies with very high population density have correspondingly low rates of violence and social pathology, suggesting that the negative effects of overpopulation may have social as well as biological origins.

**overproduction** *n.* the condition in which a species produces too many offspring for the available food, space, or other vital resources.

**overprotection** *n.* the process of sheltering a child to such an extent that he or she fails to become independent and may experience later adjustment and other difficulties.

**overreaction** *n.* a response, typically an emotional one, that exceeds an appropriate level.

**overregularization** *n.* a transient error in linguistic development in which the child attempts to make language more regular than it actually is. An example is saying *broken* instead of *broken*. See also OVEREXTENSION; OVERGENERALIZATION.

**oversampling** *n.* a sampling strategy in which certain subsets of participants are overrepresented in a study group compared to the larger population from which they are drawn. Oversampling involves deliberately selecting greater numbers of such participants than would be obtained via RANDOM SAMPLING so as to enhance the accuracy of PARAMETER values estimated through statistical procedures. For example, a researcher selecting firefighters from a candidate pool might include equal numbers of males and females to ensure a sufficient sample of females for statistical analysis, even though males comprise the majority of firefighters in the pool.

**overshadowing** *n.* in CLASSICAL CONDITIONING, a decrease in conditioning with one conditioned stimulus because of the presence of another conditioned stimulus. Usually, a stronger stimulus will overshadow a weaker stimulus. —**overshadow** *vb.*

**overshoot** *n.* the portion of an ACTION POTENTIAL that represents the stage when the membrane potential is tran-

siently depolarized relative to the resting potential. Compare **UNDERSHOOT**.

**overshooting** *n.* in vision, the tendency for the **SACCADES** of the eyes to move to a position beyond that needed to fixate a target.

**overstaffing** *n.* a situation in which management judges that more people than necessary are being employed by an organization or one of its subunits. Compare **UNDERSTAFFING**. —**overstaffed** *adj.*

**overt** *adj.* **1.** denoting anything that is not hidden or that is directly observable, open to view, or publicly known. Compare **COVERT**. **2.** deliberate or attracting attention.

**overt behavior** behavior that is explicit, that is, observable without instruments or expertise.

**over-the-counter (OTC)** *adj.* able to be purchased without a doctor's prescription, referring to various nonprescription drugs (e.g., acetaminophen, aspirin, some sleep aids).

**overt homosexuality** gay or lesbian tendencies that are consciously recognized and expressed in sexual contact, in contrast to **LATENT HOMOSEXUALITY**.

**overt integrity test** see **INTEGRITY TESTING**.

**overtone** *n.* see **HARMONIC**.

**overtraining syndrome** in the context of sport or exercise, the unwanted physical and mental effects, collectively, of training beyond the individual's capacities. Characteristic symptoms include decreased performance, increased ease of tiring, loss of motivation, emotional instability, inability to concentrate, and increased susceptibility to injury and infection. See **BURNOUT**.

**overt response** any observable or external reaction, such as pointing to indicate one's preference from among a set of objects or answering *yes* to a question. Compare **COVERT RESPONSE**.

**overvalued idea** a false or exaggerated belief that is maintained by an individual (e.g., the idea that one is indispensable in an organization). It is less rigidly and persistently held than a delusion, and its presence implies a nonconscious motivation that, if made conscious, would reduce its importance and corresponding dysfunctions.

**overweight** *adj.* the condition of having more body fat than is considered normal or healthy for an individual of a particular age, body type, or build. Overweight individuals may lie anywhere on a spectrum from mildly overweight to seriously overweight (see **OBESITY**; **MORBID OBESITY**). One of the most frequently used standards for assessing the percentage of body fat is the **BODY MASS INDEX**.

**oviduct** *n.* the tube in female animals through which egg cells from the ovary are conveyed to other parts of the reproductive system. In mammals, it is called the **FALLOPIAN TUBE**.

**oviparity** *n.* reproduction in which fertilized eggs are laid and hatch outside the mother's body. Compare **VIVIPARITY**. —**oviparous** *adj.*

**OVL** abbreviation for **ORGANUM VASULOSUM OF THE LAMINA TERMINALIS**.

**ovulation** *n.* the production of a mature secondary oocyte (see **OOGENESIS**) and its release from a **GRAAFIAN FOLLICLE** at the surface of the ovary. Rupture of the follicle causes the oocyte to be discharged into a fallopian tube. See also **OVUM**.

**ovulatory cycle** the cyclical changes in the ovary associated with the development of a **GRAAFIAN FOLLICLE**. See **MENSTRUAL CYCLE**.

**ovum** *n.* (*pl.* **ova**) a single female **GAMETE** that develops from a secondary oocyte following its release from the ovary at **OVULATION**. Also called **egg cell**. See also **OOGENESIS**.

**oxazepam** *n.* a short-acting **BENZODIAZEPINE** that is the final active product of the metabolism of **DIAZEPAM**. Oxazepam possesses the advantage of having no metabolic products; it therefore has a predictable **HALF-LIFE** and elimination time and requires minimal processing in the liver. Because of this, some consider it to be the preferred agent in the management of alcohol withdrawal. However, the need for close monitoring of dosing schedules leads others to prefer longer-acting agents for this condition. U.S. trade name: **Serax**.

**oxidation** *n.* a chemical reaction in which a substance combines with oxygen or in which electrons are lost. In **DRUG METABOLISM**, oxidation is a common mechanism of Phase I metabolism, in which drugs are made more polar (i.e., more water soluble) by the addition of an oxygen atom, often via the action of **CYTOCHROME P450** enzymes.

**O-X-O** shorthand for a **ONE-GROUP PRETEST-POSTTEST DESIGN**, in which the researcher observes and measures a single set of participants (O), introduces an intervention (X), and then measures the participants (O) again to determine whether the intervention resulted in any change.

**oxycephaly** *n.* a high, pointed condition of the skull. Also called **acrocephaly**. —**oxycephalic** *adj.*

**oxycodone** *n.* see **OPIOID ANALGESIC**.

**oxytocic** *n.* any of a group of drugs capable of stimulating contractions of the uterine muscles and used clinically to induce labor and elective or therapeutic abortion and to control postpartum bleeding. Oxytocics include **ERGOT DERIVATIVES** (e.g., ergonovine) and some **PROSTAGLANDINS**.

**oxytocin** *n.* a **PEPTIDE** produced in the hypothalamus and released by the posterior **PITUITARY GLAND** into the blood, where it acts as a hormone, or into the central nervous system, where it acts as a neurotransmitter and binds to oxytocin receptors to influence behavior and physiology. Although perhaps best known for its role in stimulating contractions of smooth muscle in the wall of the uterus to facilitate labor and in the mammary glands to facilitate expression of milk—the so-called **MILK LETDOWN REFLEX**—oxytocin is present and serves important functions in both sexes. It has earned a reputation as a facilitator of social affiliation, and the **TEND-AND-BEFRIEND RESPONSE** in particular, and it has been shown to influence sexual pleasure, reproductive functions, and parental behavior (especially maternal behavior). Additionally, research with nonhuman animals suggests that oxytocin—and the structurally similar compound **VASOPRESSIN**—is important for **PAIR-BOND** formation, **MATE GUARDING**, and recognition of social stimuli. A possible reason for the varied roles that oxytocin appears to play is that it has dual pathways and purposes. It has been theorized that when operating during times of low stress, oxytocin physiologically rewards, with feelings of well-being, those who maintain good social bonds. When operating during times of high stress or pain, however, it may produce physiological changes that encourage individuals to seek contact with others.

# Pp

**p** symbol for PROBABILITY.

**P** abbreviation for perceptual speed. See PRIMARY ABILITY.

**P4P (PFP)** abbreviation for PAY-FOR-PERFORMANCE.

**p53** *n.* a tumor-suppressor gene that regulates an organism's cell cycle and protects the cell's DNA from damage. Mutations in *p53* cause cells to become malignant. Germline mutations in *p53* are responsible for most cases of Li-Fraumeni syndrome, and in families with this syndrome, carriers of *p53* mutations have a 90% LIFETIME RISK of developing one or more kinds of cancer.

**P200** *n.* see P2 COMPONENT.

**P300** *n.* see P3 COMPONENT.

**PA 1.** abbreviation for PHYSICIAN ASSISTANT. **2.** abbreviation for Positive Affect within the POSITIVE AND NEGATIVE AFFECT SCHEDULE.

**Paced Auditory Serial Addition Test (PASAT)** a neuropsychological test measuring information-processing speed, working memory, and sustained and divided attention. Developed in New Zealand in the 1950s for experimental purposes by cognitive psychologist Hubert Sampson, the PASAT was first used clinically in the early 1970s by Sampson and clinical neuropsychologist Dorothy M. A. Gronwall to evaluate cognitive deficits in patients with mild head injury. It later became widely used for patients with multiple sclerosis and in recent years has been used to assess the cognitive effects of other neurological conditions. In the original version of the test, a random sequence of 61 digits is presented in audiotaped format, and the participant must add each digit to the immediately preceding digit. For example, a sequence of 1, 5, and 7 would result in the responses 6 (1 + 5) and 12 (5 + 7). Four trials are used, differing in the rate of digit presentation: 2.4, 2.0, 1.6, and 1.2 seconds, respectively. Mean numbers of correct responses for each of the four trials are compared. Several revisions of the original test exist, with variations in methodology and in technology (e.g., computerized digit presentation).

**pacemaker** *n.* a natural or artificial device that helps establish and maintain certain biological rhythms. Unqualified, the term usually refers to a CARDIAC PACEMAKER. Natural pacemakers include the sinoatrial node, which regulates heart rhythm, and the THALAMIC PACEMAKER.

**pachygyria** *n.* see LISSENCEPHALY.

**Pacinian corpuscle** a type of cutaneous receptor that is sensitive to contact and vibration. It consists of a nerve-fiber ending surrounded by concentric layers of connective tissue. Pacinian corpuscles are found in the fingers, the hairy skin, the tendons, and the abdominal membrane. Also called **Pacinian body**; **Pacini's corpuscle**; **Vater's corpuscle**. [Filippo Pacini (1812–1883), Italian anatomist]

**package insert** see LABELING.

**package testing** a form of product testing that investigates the effects of package design on consumer purchas-

ing decisions. For example, a package-testing study might find that 30% of female purchasers of cosmetics changed brands when a similar product was offered with a better package and that 50% of purchasers said they would be willing to pay a higher price for the original product in a more convenient package.

**padded cell** a room in a psychiatric hospital or ward that is lined with heavy cushioning on the floor and walls to prevent a violent or self-destructive patient from injuring himself or herself or others. In most institutions, padded cells have been replaced by some combination of physical restraints, psychological interventions, and tranquilizing medications.

**paedo-** combining form see PEDO-.

**PAG** abbreviation for PERIAQUEDUCTAL GRAY.

**pain** *n.* an unpleasant sensation resulting from damage to nerve tissue, stimulation of free nerve endings, or excessive stimulation (e.g., extremely loud sounds). Physical pain is elicited by stimulation of pain receptors, which occur in groups of myelinated or unmyelinated fibers throughout the body but particularly in surface tissues. Pain that is initiated in surface receptors generally is perceived as sharp, sudden, and localized; pain experienced in internal organs tends to be dull, longer lasting, and less localized. Although pain is generally considered a physical phenomenon, it involves various cognitive, affective, and behavioral factors: It is an unpleasant emotional as well as sensory experience. It may also be a feeling of severe distress and suffering resulting from acute anxiety, loss of a loved one, or other psychological factors (see PSYCHIC PAIN). Because of these various factors, as well as previous experience in pain response, individual reactions vary widely. Psychologists have made important contributions to understanding pain by demonstrating the psychosocial and behavioral factors in the etiology, severity, exacerbation, maintenance, and treatment of both physical and psychic pain. See also CHRONIC PAIN; GATE-CONTROL THEORY.

**pain disorder** in *DSM-IV-TR*, a SOMATOFORM DISORDER characterized by severe, prolonged pain that significantly interferes with a person's ability to function. The pain cannot be accounted for solely by a medical condition, and there is evidence of psychological involvement in its onset, severity, exacerbation, or maintenance. Although not feigned or produced intentionally (compare FACTITIOUS DISORDER; MALINGERING), the pain may serve such psychological ends as avoidance of distasteful activity or gaining extra attention or support from others. Pain disorder was formerly referred to as **psychogenic pain disorder** or **somatoform pain disorder**. The diagnosis has been eliminated from *DSM-5*, although the new term SOMATIC SYMPTOM DISORDER retains mention of such a disorder "with predominant pain."

**pain drawing** a diagnostic tool for identifying the amount, severity, and type of pain experienced by an individual. A front and back view of the human body is provided, and the individual is given instructions to identify the location and type of pain using specified symbols.

**painful bruising syndrome** see GARDNER–DIAMOND SYNDROME.

**painful sexual intercourse** discomfort during coitus, which may range from irritation to severe pain. Possible causes in women include insufficient foreplay and lubrication, urinary tract disease, vaginal atrophy during menopause, and vaginal muscle disorders. Although painful sexual intercourse is more common in women, it can occur in men, with possible causes including sexually transmitted diseases, conditions of the penis (e.g., Peyronie's disease), and dermatitis. See also DYSpareunia.

**pain management** the prevention, reduction, or elimination of physical or mental suffering or discomfort, which may be achieved by pharmacotherapy (e.g., administration of opioids or other analgesics), psychological interventions, neurological and anesthesiologic methods (e.g., nerve blocks, self-administered pumps), complementary or alternative methods (e.g., ACUPUNCTURE, ACUPRESSURE), or a combination of these. Among psychological interventions, BIOFEEDBACK and relaxation have been used alone and in conjunction with cognitive techniques to treat chronic headaches and facial pain. HYPNOTHERAPY has been used successfully to treat acute pain and pain associated with burns and metastatic disease. Cognitive and behavioral COPING-SKILLS TRAINING, training in external ATTENTIONAL FOCUS and in the use of neutral or positive IMAGERY, approaches designed to improve problem-solving and communication skills, and psychotherapeutic approaches have been combined with physical modalities in the treatment of CHRONIC PAIN syndromes.

**pain mechanisms** neural mechanisms that mediate pain. These extend from peripheral nerve endings to the cerebral cortex, especially the CINGULATE CORTEX. Some investigators propose that sharp pain sensations are transmitted by rapidly conducting A FIBERS and dull pain sensations are transmitted by slowly conducting C FIBERS. See also GATE-CONTROL THEORY.

**pain pathway** any neural pathway that mediates sensations of pain. Afferent pain pathways include rapidly conducting myelinated A FIBERS and slowly conducting unmyelinated C FIBERS, ascending tracts in the ANTEROLATERAL SYSTEM, the PERIAQUEDUCTAL GRAY matter, the RETICULAR FORMATION, and many thalamic and cerebral cortical areas, especially the CINGULATE CORTEX. There are also efferent pathways that inhibit pain signals at various levels down to spinal synapses, including release of ENDOGENOUS OPIOIDS that inhibit pain.

**pain perception** the perception of physiological pain, usually evoked by stimuli that cause or threaten to cause tissue damage. In some cases, such as PHANTOM LIMB pain and CAUSALGIA, the persistence of pain cannot be explained by stimulation of neural pathways. Pain perception can be measured in terms of its intensity and can be classified according to several categories: These include sharp or dull, focal or general, and chronic or intermittent or transitory. Also called **nociception**.

**pain receptor** see NOCICEPTOR.

**pain scale** a standardized rating scale for judging the intensity and perception of pain. It may take the form of verbal self-description, numerical ratings, or graphical depictions of expressive faces.

**pain sense** a sense, involving free nerve endings on the body surface and in some internal organs, that yields a spe-

cific effect identified as pain, especially when tissue injury occurs.

**pain threshold** the intensity at which a stimulus is experienced by an individual as hurtful.

**paint sniffing** a type of substance abuse involving the inhalation of the fumes of paint thinners and other volatile solvents. See INHALANT ABUSE.

**pair bond** a relationship between two individuals characterized by close affiliative behavior, emotional reaction to separation or loss, and increased social responsiveness on reunion. Pair bonds are important in species with biparental care, providing the female with increased likelihood of male cooperation in the care of the young and the male with increased CERTAINTY OF PATERNITY.

**paired-associates learning** a technique used in studying learning in which participants learn syllables, words, or other items in pairs and are later presented with one half of each pair to which they must respond with the matching half. Also called **paired-associates method**; **paired associations**. [introduced by Mary W. CALKINS]

**paired comparison 1.** a systematic procedure for comparing a set of stimuli or other items. A pair of stimuli is presented to an individual, who is asked to compare them on a particular dimension, such as size, loudness, or brightness; the process is continued until every item in the set has been compared with every other item. The method is mainly associated with research into psychophysical judgments but has also been used to study preferences between works of art or different personality characteristics. **2.** in industrial and occupational settings, a method of EMPLOYEE EVALUATION in which each worker in a selected group is compared with every other worker on a series of performance measures. Employees are then rated on the basis of the number of favorable comparisons they receive.

**paired sample** any research sample in which each participant is matched on a particular variable to a participant in a second sample. This helps ensure that any differences on an outcome variable are not due to differences between participants on the matching variables. A simple example of a paired sample is a PRETEST–POSTTEST DESIGN, in which a variable is measured before and after an intervention; in this case, the participant is matched to himself or herself. More frequently, paired samples are achieved by matching individuals on personal characteristics, such as age and gender. See MATCHED-PAIRS DESIGN.

**paired-samples *t* test** see MATCHED-PAIRS T TEST.

**pairing** *n.* in behavioral studies, the juxtaposing of two events in time. For example, if a tone is presented immediately before a puff of air to the eye, the tone and the puff have been paired.

**pairing hypothesis** the hypothesis that the crucial feature of CLASSICAL CONDITIONING is the temporal conjunction (i.e., PAIRING) between a conditioned stimulus and an unconditioned stimulus.

**pairmate** *n.* either of the individuals involved in a PAIR BOND.

**PAIR Project** Processes of Adaptation in Intimate Relationships Project: one of the earliest and most influential longitudinal studies of marriage. The PAIR Project followed 168 Pennsylvania couples from their newlywed days to 14 years after marriage. Its initial goal was to examine how social and psychological factors present in courtship would

predict adaptation to marriage. Later studies examined these and other factors as predictors of marital deterioration and divorce. See also **EARLY YEARS OF MARRIAGE PROJECT**. [begun in 1981 by U.S. psychologist Ted L. Huston]

**pairwise comparison** in a **FACTORIAL DESIGN** with a variable of interest having more than two levels, a procedure in which the data obtained from each level of the variable are compared separately to the data from every other level. For example, if a researcher is assessing the differences in student achievement resulting from three different types of content presentation, statistical tests would be used to evaluate the different outcomes of each pair of content methods (i.e., Method 1 and Method 2, 1 and 3, and 2 and 3). **DUNNETT'S MULTIPLE COMPARISON TEST**, **TUKEY'S HONESTLY SIGNIFICANT DIFFERENCE TEST**, and the **NEWMAN-KEULS MULTIPLE COMPARISON TEST** all involve pairwise comparisons. See also **MULTIPLE COMPARISONS**.

**pairwise deletion** a method in which data for a variable pertinent to a specific assessment are included, even if values for the same individual on other variables are missing. For example, consider a researcher studying the influence of age, education level, and current salary on the socioeconomic status of a sample of employees. If assessing specifically how education and salary influence socioeconomic status, he or she could include all participants for whom that data had been recorded even if they were missing information on age, as the latter variable is not of interest in the current analysis. Also called **available-case analysis**. Compare **LISTWISE DELETION**.

**palatal lisp** see **LISP**.

**palate** *n.* the roof of the mouth, consisting of an anterior bony portion (see **HARD PALATE**) and a posterior fibromuscular portion (see **SOFT PALATE**). See also **CLEFT PALATE**.

**palatum durum** see **HARD PALATE**.

**paleo-** (**palaeco-**) *combining form* ancient.

**paleocerebellum** *n.* a phylogenetically old part of the **CEREBELLUM**, including most of the vermis (central area) and the cerebellar pyramids. It is involved in control of the muscles of the trunk and girdle. Also called **spinocerebellum**. Compare **ARCHICEREBELLUM**; **NEOCEREBELLUM**. —**paleocerebellar** *adj.*

**paleocortex** *n.* see **ALLOCORTEX**.

**paleologic thinking** **PRELOGICAL THINKING** characterized by concrete, dreamlike thought processes, as occurs in children. Mental activity is limited to feeling and perception and excludes logic and reasoning. [defined by Italian-born U.S. psychiatrist Silvano Arieti (1914–1982)]

**paleopallium** *n.* see **ALLOCORTEX**.

**paleopsychology** (**palaepsychology**) *n.* the study of certain psychological processes in contemporary humans that are believed to have originated in earlier stages of human and, perhaps, nonhuman animal evolution. These include unconscious processes, such as the **COLLECTIVE UNCONSCIOUS**. The term was introduced in this sense by Carl JUNG. —**paleopsychological** *adj.*

**paleostriatum** *n.* see **NEOSTRIATUM**.

**palilalia** *n.* a speech disorder in which words and phrases are needlessly repeated with increasing speed.

**palin-** (**pali-**) *combining form* **1.** repetition (e.g., **PALINPHRASIA**). **2.** reversal of direction.

**palinopsia** *n.* the persistence or reappearance of a visual image after the stimulus has been removed. Palinopsia is associated with posterior brain injury, drug effects, and seizures. Also called **palinopia**; **paliopsy**; **visual perseveration**. See also **AFTERIMAGE**; **VISUAL ILLUSION**.

**palinphrasia** *n.* involuntary repetition of words or phrases in speaking. Also called **paliphrasia**. See also **PALILALIA**.

**palliative care** **1.** terminal care that focuses on symptom control and comfort instead of aggressive, cure-oriented intervention. This is the basis of the **HOSPICE** approach pioneered by British nurse, social worker, and physician Cicely Saunders (1918–2005). Emphasis is on careful assessment of the dying patient's condition throughout the end phase of life in order to provide the most effective preventive treatment (e.g., medications) to relieve pain and manage other symptoms (e.g., respiratory distress, nausea, anxiety). **2.** care intended to relieve suffering and distress in patients at any stage of a serious illness, regardless of its prognosis.

**palliative sedation** see **SLOW EUTHANASIA**.

**pallidotomy** *n.* a neurosurgical technique in which electrodes are used to selectively lesion the **GLOBUS PALLIDUS**. Pallidotomy is sometimes used for the management of disorders involving damage to the **EXTRAPYRAMIDAL TRACT**, as in patients with Parkinson's disease for whom other treatments (e.g., with **LEVODOPA**) have proved ineffective.

**palmar** *adj.* **1.** in humans, referring to the palms of the hands. **2.** in nonhuman primates, referring to the palm of any limb.

**palmar conductance** the electrical conductivity of the skin of the palm of the hand. See **SKIN CONDUCTANCE**.

**palmar reflex** a reflex in which the fingers are flexed when the palm is scratched. See **GRASP REFLEX**.

**palmistry** *n.* the scientifically unfounded practice of interpreting lines and other features of the palm of the hand as signs of personality traits or predictions of the individual's future. Also called **chiromancy**; **chirosophy**. —**palmist** *n.*

**palpebral fissure** the hypothetical line between the upper and lower eyelids. When the eyelids are open, the palpebral fissure forms an elliptical space.

**palpitation** *n.* a rapid or irregular heartbeat that may be caused by illness, anxiety, drug use (including caffeine), or physical exertion.

**palsy** *n.* an obsolete name for paralysis, still used in such compound names as **CEREBRAL PALSY**, **BELL'S PALSY**, and **PROGRESSIVE SUPRANUCLEAR PALSY**.

**Pamelor** *n.* a trade name for **NORTRIPTYLINE**.

**PAN** abbreviation for **POSITIONAL ALCOHOL NYSTAGMUS**.

**pan-** *combining form* all or every.

**panacea** *n.* a solution or remedy for everything that is wrong with a given problem or that universally applies to a set of related problems.

**panarteritis** *n.* a diffuse inflammation of the walls of the small and medium arteries. Arteries of the muscles, kidneys, heart, and gastrointestinal tract may be involved.

**PANAS** acronym for **POSITIVE AND NEGATIVE AFFECT SCHEDULE**.



**pancreas** *n.* a gland, located near the posterior wall of the abdominal cavity, that is stimulated by SECRETIN to secrete pancreatic juice, which contains various digestive enzymes. In addition, small clusters of cells within the pancreas (see ISLETS OF LANGERHANS) function as an ENDOCRINE GLAND, secreting the hormones INSULIN and GLUCAGON. —**pancreatic** *adj.*

**pancreatitis** *n.* an inflammation of the pancreas, marked by severe abdominal pain and caused by biliary tract disorders (e.g., gallstones), alcoholism, viral infection, or reactions to certain drugs (e.g., some antipsychotic agents).

**pandemic** **1.** *adj.* widespread or universal: affecting significant proportions of many populations over a large area (e.g., several countries), particularly with reference to a disease or disorder. Compare ENDEMIC; EPIDEMIC. **2.** *n.* a disease or disorder affecting many people over a large area.

**panel data** observations on multiple phenomena collected over multiple time periods for the same group of individuals or other units. Repeated observations permit the researcher to study the dynamics of change using techniques such as TIME-SERIES ANALYSIS. Panel data have characteristics of both LONGITUDINAL DATA and cross-sectional data (see CROSS-SECTIONAL ANALYSIS). For example, the values of the gross annual income for each of 500 randomly chosen households in New York City collected for each of 10 years would be panel data.

**panel study** see LONGITUDINAL DESIGN; PANEL DATA.

**panentheism** *n.* see PANTHEISM.

**panic** *n.* a sudden, uncontrollable fear reaction that may involve terror, confusion, and irrational behavior, precipitated by a perceived threat (e.g., earthquake, fire, being stuck in an elevator).

**panic attack** a sudden onset of intense apprehension and fearfulness in the absence of actual danger, accompanied by the presence of such physical symptoms as heart palpitations, difficulty breathing, chest pain or discomfort, choking or smothering sensations, sweating, and dizziness. The attack occurs in a discrete period of time and often involves fears of going crazy, losing control, or dying. Attacks may occur in the context of any of the ANXIETY DISORDERS as well as in other mental disorders (e.g., mood disorders, substance-related disorders) and in some general medical conditions (e.g., hyperthyroidism). Also called **anxiety attack**. See also CUED PANIC ATTACK; SITUATIONALLY PREDISPOSED PANIC ATTACK; UNCUE PANIC ATTACK.

**panic control treatment** a COGNITIVE BEHAVIOR THERAPY for panic disorder focusing on education about panic, training in slow breathing, and graded IN VIVO EXPOSURE to cues associated with panic. [developed by U.S. clinical psychologists Michelle G. Craske (1959– ) and David H. Barlow (1942– )]

**panic disorder (PD)** in *DSM-IV-TR*, an ANXIETY DISORDER characterized by recurrent, unexpected PANIC ATTACKS that are associated with (a) persistent concern about having another attack, (b) worry about the possible consequences of the attacks, (c) significant change in behavior related to the attacks (e.g., avoiding situations, engaging in SAFETY BEHAVIOR, not going out alone), or (d) a combination of any or all of these. Panic disorder associated with significant avoidance is classified as **panic disorder with agoraphobia** (see AGORAPHOBIA). In *DSM-5*, panic disorder and agoraphobia are treated as separate entities with sepa-

rate criteria; their combined presence is considered two diagnoses.

**panpsychism** *n.* the view that all elements of the natural world possess some quality of soul (psyche) or some form of sentience. Some equate this view with HYLOZOISM, which holds that all natural objects possess the quality of life, whereas others distinguish between life and soul or sentience. Also called **psychism**. See also ANIMISM; MIND STUFF; SPIRITUALISM.

**pansexualism** *n.* the view that all human behavior is motivated by the sexual drive. Sigmund FREUD has been popularly associated with such a view; although he emphasized the power of the sexual instinct, Freud also recognized nonsexual interests, such as the self-preservative drives (e.g., hunger, thirst) and the aggressive drive associated with the DEATH INSTINCT. —**pansexual** *adj.*

**pantheism** *n.* the doctrine that all of reality constitutes a unity and that this unity is divine. Thus, everything is part of God. Modern pantheism was first systematically propounded by Baruch SPINOZA, who proposed that God and nature are coequivalent. Such a position is incompatible with traditional THEISM because it entails a God who is no more than the sum total of his creation. Some thinkers make a distinction between pantheism and **panentheism**, which maintains that God is everywhere in his creation but not coequivalent with it. —**pantheist** *adj., n.*

**pantomime** *n.* **1.** an expression of feelings and attitudes through gestures rather than words. **2.** a nonverbal therapeutic technique sometimes employed when verbal expression is blocked.

**pantry-check technique** an inspection of the kitchen shelves or cabinets of households to determine whether the subjects of advertising research actually use the products they claim to prefer. Interviews alone often prove inadequate: Some market-research control studies have shown that as many as 15% of individuals interviewed may claim to use, prefer, or at least be acquainted with a particular product that has never been marketed or advertised. See also RECOGNITION TECHNIQUE.

**Panum phenomenon** a visual illusion produced by binocular fusion of separate images presented to the left and right eyes, with the fused image appearing closer to the eyes than the stimuli. [Peter Ludwig Panum (1820–1885), Danish physiologist]

**Panum's fusional area** the region in space surrounding a HOROPTER in which images that appear at different points on the two retinas appear as single images. If visual targets appear outside this area (either in front of or behind it), they will appear as double images, and the observer will experience double vision. [Peter Ludwig Panum]

**papaverine** *n.* an OPIUM alkaloid first isolated in the 1840s. It has no psychopharmacological activity but is a potent vasodilator. It is occasionally used to increase blood flow in the cerebral arteries in the treatment of angina pectoris, or—when injected into the corpora cavernosa (see CORPUS CAVERNOSUM) of the penis—to produce erection in the management of impotence. U.S. trade name: **Para-Time S.R.**

**Papez circuit** a circular network of nerve centers and fibers in the brain that is associated with emotion and memory. It includes the hippocampus, FORNIX, MAMMILLARY BODY, anterior thalamus, CINGULATE CORTEX, and PARA-HIPPOCAMPAL GYRUS. Damage to any component of this

system leads to amnesia. Also called **Papez circle**. [first described in 1937 by James W. **Papez** (1883–1958), U.S. neuroanatomist]

**Papez–MacLean theory of emotion** see MACLEAN’S THEORY OF EMOTION.

**Papez’s theory of emotion** a modification of the CANNON–BARD THEORY proposing that the PAPEZ CIRCUIT is the site of integration and control of emotional experience in the higher brain centers. See also MACLEAN’S THEORY OF EMOTION. [James W. **Papez**]

**papilla** *n.* (*pl.* **papillae**) any of the four types of swellings on the tongue. In humans, some 200 FUNGIFORM PAPILLAE are toward the front of the tongue; 10 to 14 FOLIATE PAPILLAE are on the sides; 7 to 11 CIRCUMVALLATE PAPILLAE are on the back; and FILIFORM PAPILLAE, with no taste function, cover most of the tongue’s surface. Also called **lingual papilla**.

**papilledema** *n.* a swelling of the OPTIC DISK caused by an increase in intracranial pressure. The condition occurs because the meningeal membranes of the brain are continuous with the sheaths of the optic nerve, so that pressure is transmitted to the eyeball. Also called **choked disk**.

**PAQ** abbreviation for POSITION ANALYSIS QUESTIONNAIRE.

**para-** (**par-**) *prefix* **1.** beside, near, or resembling (e.g., PARAPROFESSIONAL). **2.** abnormal or beyond (e.g., PARAPSYCHOLOGY).

**para I** abbreviation for primipara. See PRIMIPAROUS.

**parabiosis** *n.* the joining of two individuals so their circulatory systems interconnect, as in the case of some CONJOINED TWINS.

**parabiotic preparation** the surgical connection of two genetically similar animals at some anatomical structure, resulting in a shared circulation of blood. Parabiotic preparations are used for a variety of research purposes.

**paracentral scotoma** a small island of blindness in the central visual field surrounding, but not including, the FOVEA CENTRALIS. **Monocular paracentral scotoma** (affecting one eye) results from impairment of the peripheral visual system, such as from glaucoma or optic nerve atrophy; **homonymous paracentral scotoma** (affecting both eyes) arises from injury to the central visual system posterior to the LATERAL GENICULATE NUCLEUS. Patients with homonymous paracentral scotoma typically have difficulties with reading (**hemianopic dyslexia**). See also SCOTOMA.

**paracentral vision** a form of vision that utilizes the retinal area immediately surrounding, but not including, the FOVEA CENTRALIS. Compare CENTRAL VISION; PERIPHERAL VISION.

**paracetamol** *n.* see ACETAMINOPHEN.

**parachlorophenylalanine** *n.* a substance that blocks the synthesis of SEROTONIN from tryptophan, resulting in depletion of serotonin from brain cells.

**parachromatopsia** *n.* partial color blindness. Also called **parachromopsia**. See also DYSCROMATOPSIA.

**paracinesia** *n.* see PARAKINESIA.

**paracontrast** *n.* a form of forward MASKING in which the perception of a visible stimulus (the target) is altered by the prior presentation of another visual stimulus (the mask) in a different spatial location. The target is often a small dot, whereas the mask is a ring that surrounds it.

Each stimulus is presented very briefly (10–100 ms), at intervals that are varied systematically, and the quality of the target’s percept is measured. Compare METACONTRAST.

**paracrine** *adj.* describing or relating to a type of cellular signaling in which a chemical messenger is released from a cell and diffuses to a nearby target cell, on which it exerts its effect through the intervening extracellular space. Compare AUTOCRINE; ENDOCRINE.

**paracusia** *n.* **1.** partial deafness, especially to low-pitched tones. **2.** any abnormality of hearing other than simple deafness, such as **paracusia localis**, an impairment in determining the direction from which a sound comes.

**paracyesis** *n.* see ECTOPIC PREGNANCY.

**paradigm** *n.* **1.** a model, pattern, or representative example, as of the functions and interrelationships of a process, a behavior under study, or the like. **2.** a set of assumptions, attitudes, concepts, values, procedures, and techniques that constitutes a generally accepted theoretical framework within, or a general perspective of, a discipline. **3.** an experimental design or plan of the various steps of an experiment. **4.** in grammar, the set of all the inflectional forms of a word.

**paradigm clash** in science or philosophy, the conflict that occurs when a new set of fundamental assumptions about reality or human knowledge proves incompatible with an established set of such assumptions. For example, the doctrine of organic evolution challenged established thinking about the origin and nature of the living world and ultimately replaced previous theories.

**paradigm shift** in the influential 1962 analysis of SCIENTIFIC REVOLUTIONS by U.S. philosopher of science Thomas S. Kuhn (1922–1996), a substantial and fairly rapid change in the whole pattern of ideas and assumptions defining the nature of a science and determining the methods and procedures used.

**paradox** *n.* a surprising or self-contradictory statement that may nevertheless be true. In philosophy, paradoxes are traditionally classified as logical or semantic. A **logical paradox** occurs when apparently valid arguments lead to a conclusion that seems contradictory or absurd. For example: *God is omnipotent: Omnipotent beings can do anything: Therefore, God can make a stone so big He cannot move it: Therefore, He is not omnipotent.* A **semantic paradox** arises from the words in a proposition. For example: *This sentence is not true.* The language of paradox is particularly common in poetry and religion, where it may be used to disrupt conventional ways of thinking and perceiving. See also VICIOUS CIRCULARITY. —**paradoxical** *adj.*

**paradoxical cold** an effect produced in thermal nerve endings that are sensitive to both cold and heat. The nerve fibers have double peaks, including one for heat that is above the threshold of pain. Thus, touching a hot object that fires a hot and cold receptor can produce an illusion of cold.

**paradoxical directive** an instruction by a therapist to a client to do precisely the opposite of what common sense would dictate in order to show the absurdity or self-defeating nature of the client’s original intention. See also PARADOXICAL TECHNIQUE.

**paradoxical intention** a psychotherapeutic technique used for anxiety disorders in which the individual is asked to magnify a distressing, unwanted symptom. For example, an individual who is afraid of shaking in a social situation

would be instructed to imagine the feared situation and purposely exaggerate the shakiness. The aim is to help such individuals distance themselves from their symptoms, often by appreciating the humorous aspects of their exaggerated responses. In this way, they can learn that the predicted catastrophic consequences attributed to their symptoms are unlikely to occur. [originally developed by Viktor E. FRANKL for the treatment of phobias]

**paradoxical motion** the global perception of movement in a MOTION AFTEREFFECT even though the individual elements in the image do not appear to move.

**paradoxical reaction** in pharmacology, a drug reaction that is contrary to the expected effect. An example is the worsening of anxiety after the administration of an anxiolytic agent.

**paradoxical sleep** see REM SLEEP.

**paradoxical technique** a therapeutic technique in which a client is directed by the therapist to continue undesired symptomatic behavior, and even increase it, to show that the client has voluntary control over it. Also called **paradoxical intervention**. See also PARADOXICAL DIRECTIVE.

**paradoxical thinking** cognition marked by contradiction of typical logical processes. Although this type of thinking can be associated with distorted thought processes, such as those present in schizoid personality disorder or some forms of schizophrenia, it can be used as a way of reframing problems or negative beliefs in a positive manner. This approach is often embraced to promote creativity and personal, familial, and organizational change.

**paradoxical warmth** a sensation of warmth produced when a cold object of approximately 30 °C (86 °F) stimulates a cold receptor.

**paradox of freedom** a fundamental paradox that arises under assumptions of DETERMINISM in human behavior: Although specific behaviors can be attributed to specific antecedent causes, humans almost universally experience a sense of being free to perform or refrain from performing any given behavior at the point of action (see FREE WILL). HARD DETERMINISM resolves this paradox by insisting that the sense of free choice is illusory, whereas SOFT DETERMINISM argues that such a sense is not in fact incompatible with causal explanations.

**parafovea** *n.* the region of the retina immediately surrounding the FOVEA CENTRALIS.

**parageusia** *n.* **1.** a distorted sense of taste. **2.** a GUSTATORY HALLUCINATION. See also DYSGEUSIA.

**paragigantocellular nucleus (PGN)** a region of the brainstem RETICULAR FORMATION that is implicated in sleep.

**paragrammatism** *n.* a symptom of APHASIA consisting of substitutions, reversals, or omissions of sounds or syllables within words or reversals of words within sentences. Paragrammatic speech may be unintelligible if the disturbance is severe. —**paragrammatic** *adj.*

**paragraphia** *n.* a condition in which writing is distorted by transposition or omission of letters and words or by insertion of incorrect and irrelevant words.

**paragraph-meaning test** an intelligence test, or a component of one, in which the participant is asked to explain the basic point, gist, or meaning of a paragraph.

**parahippocampal gyrus** a ridge (gyrus) on the medial

(inner) surface of the TEMPORAL LOBE of cerebral cortex, lying over the HIPPOCAMPUS. It is a component of the LIMBIC SYSTEM thought to be involved in spatial or topographic memory. A region of it, the **parahippocampal place area (PPA)**, has been shown to have significant activity in response to complex visual scenes (e.g., city streets, rooms, landscapes) and may aid in place recognition. Also called **parahippocampal cortex**.

**parakinesia (paracinesia)** *n.* awkwardness or clumsiness of movement.

**parakinesis** *n.* **1.** in parapsychology, the movement of objects at a rate and trajectory disproportionate to the contact made with them. The phenomenon is closely related to that of PSYCHOKINESIS, which involves manipulation of objects by thought alone. **2.** in medicine, an occasional synonym for PARAKINESIA.

**paralalia** *n.* **1.** a speech disorder or disturbance that involves the substitution of one speech sound for another (e.g., saying “wabbit” for *rabbit* or “lellow” for *yellow*). See also LALLING. **2.** a rarely used term for speech disorders generally.

**paralanguage** *n.* the vocal but nonverbal elements of communication by speech. Paralanguage includes not only SUPRASEGMENTAL features of speech, such as tone and stress, but also such factors as volume and speed of delivery, voice quality, hesitations, and nonlinguistic sounds, such as sighs, whistles, or groans. These **paralinguistic cues** (or **paralinguistic features**) can be enormously important in shaping the total meaning of an utterance; they can, for example, convey the fact that a speaker is angry or sarcastic when this would not be apparent from the same words written down. In some uses, the term is extended to include gestures, facial expressions, and other aspects of BODY LANGUAGE.

**paraldehyde** *n.* a sedative and hypnotic drug formerly used in the treatment of agitation or delirium tremens. It was relatively toxic, with a noted side effect of producing a characteristic breath odor, and has been abandoned in favor of safer alternatives. U.S. trade name: **Paral**.

**paralexia** *n.* the substitution or transposition of letters, syllables, or words during reading. See also VISUAL DYSLEXIA.

**paralinguistic cue (paralinguistic feature)** see PARALANGUAGE.

**parallax** *n.* an illusion of movement of objects in the visual field when the head is moved from side to side. Objects beyond a point of visual fixation appear to move in the same direction as the head movement; those closer seem to move in the opposite direction. Parallax provides a monocular cue for DEPTH PERCEPTION.

**parallel distributed circuit** an interactive network that encompasses several different circuits at the same time to process the same stimuli. It is a relatively recent development in computers but an ancient property of nervous systems.

**parallel distributed processing (PDP)** any model of cognition based on the idea that the representation of information is distributed as patterns of activation over a richly connected set of hypothetical neural units that function interactively and in parallel with one another. See DISTRIBUTED PROCESSING; PARALLEL PROCESSING. See also GRACEFUL DEGRADATION.

**parallel fiber** any of the axons of the GRANULE CELLS that form the outermost layer of the CEREBELLAR CORTEX.

**parallel form** see ALTERNATE FORM.

**parallel-forms reliability** see ALTERNATE-FORMS RELIABILITY.

**parallel-groups design** a research design that compares two conditions or treatments (e.g., relaxation training vs. no training) such that both groups of participants are studied simultaneously and each participant receives one treatment only. A parallel-groups design thus contrasts with a CROSSOVER DESIGN, in which each individual participates in each condition.

**parallelism** *n.* **1.** in general, the quality or condition of being parallel, being structurally similar, or having corresponding features. **2.** in philosophy, the proposition that, although mind and body constitute separate realities, they function in parallel such that their responses seem holistic and the two realms seem to assert causal control over each other. See MIND–BODY PROBLEM. See also OCCASIONALISM; PREESTABLISHED HARMONY. **3.** in anthropology, see CULTURAL PARALLELISM.

**parallel play** see SOCIAL PLAY.

**parallel processing** INFORMATION PROCESSING in which two or more sequences of operations are carried out simultaneously by independent processors. A capacity for parallel processing in the human brain would account for people's apparent ability to carry on different cognitive functions at the same time, such as driving a car while also listening to music and having a conversation. The term is usually reserved for processing at a higher, symbolic level, as opposed to the level of individual neural units described in models of PARALLEL DISTRIBUTED PROCESSING. Also called **simultaneous processing**. Compare SERIAL PROCESSING.

**parallel search** in a search task, the process of searching for many items at the same time, with no decrease in efficiency. Compare SERIAL SEARCH.

**paralogia** *n.* insistently illogical or delusional thinking and verbal expression, sometimes observed in schizophrenia. Eugen BLEULER cited the example of a patient who justified his insistence that he was Switzerland by saying "Switzerland loves freedom. I love freedom. I am Switzerland." Also called **paralogical thinking**; **perverted logic**; **perverted thinking**. See also EVASION.

**paralogism** *n.* a FALLACY or invalid argument, especially one that is unintentional and difficult to detect.

**paralysis** *n.* loss of function of voluntary muscles. A common cause is a lesion of the nervous or muscular system due to injury, disease, or congenital factors. The lesion may involve the central nervous system, as in a stroke or spinal cord injury, or the peripheral nervous system, as in GUILLAIN–BARRÉ SYNDROME. See also FLACCID PARALYSIS; SPASTIC PARALYSIS. —**paralytic** *adj.*

**paralysis agitans** an archaic name for PARKINSON'S DISEASE.

**paralytic dementia** see GENERAL PARESIS.

**paramedic** *n.* a health care professional who is specially trained and certified to assist medical professionals and, especially, to provide a wide range of emergency services prior to and during transportation to a hospital.

**parameter** *n.* **1.** a characteristic of a POPULATION, such as the mean or STANDARD DEVIATION, that is described or

estimated by a STATISTIC obtained from sample data. For example, the mean score on a national exam for a sample of colleges provides an estimate of this parameter in the population of colleges. **2.** any of the variables in a statistical model that is studied or used to explain an outcome or relationship. **3.** an ARGUMENT of a function.

**parameter space** the set of experimental variables that are used as input into a model and serve as the basis for estimation of PARAMETERS in a population.

**parametric** *adj.* describing any analytic method that makes ASSUMPTIONS about the data of interest. Compare NONPARAMETRIC.

**parametric statistics** statistical procedures that are based on assumptions about the distribution of the attributes in the population being tested (e.g., that there is a NORMAL DISTRIBUTION of values). Compare NONPARAMETRIC STATISTICS.

**parametric test** a HYPOTHESIS TEST that involves one or more assumptions about the underlying arrangement of values in the population from which the sample is drawn. Common parametric tests include ANALYSIS OF VARIANCE, REGRESSION ANALYSIS, CHI-SQUARE TESTS, T TESTS, and Z TESTS. Also called **parametric hypothesis test**. Compare NONPARAMETRIC TEST.

**paramimia** *n.* the use of gestures inappropriate to or incongruent with one's underlying feelings.

**paramnesia** *n.* see FALSE MEMORY.

**paranoia** *n.* **1.** a PARANOID STATE. **2.** a former diagnosis for a relatively rare disorder, distinct from paranoid schizophrenia, in which the person reasons rightly from a wrong premise and develops a persistent, well-systematized, and logically constructed set of persecutory delusions, such as being conspired against, poisoned, or maligned. It is equivalent to persecutory-type DELUSIONAL DISORDER. **3.** historically, any psychiatric disorder characterized by persistent delusions. See also CLASSICAL PARANOIA. **4.** in ancient times, any mental disorder or DELIRIUM. —**paranoiac** *n., adj.*

**paranoia querulans** see LITIGIOUS PARANOIA.

**paranoid** *adj.* **1.** relating to or exhibiting extreme distrust or suspiciousness. See also PARANOID PERSONALITY DISORDER. **2.** relating to or characterized by delusions. See also DELUSIONAL DISORDER; PARANOID SCHIZOPHRENIA.

**paranoid condition** see PARANOID STATE.

**paranoid delusion** loosely, any of a variety of false personal beliefs tenaciously sustained even in the face of incontrovertible evidence to the contrary. These include DELUSIONS OF GRANDEUR, DELUSIONAL JEALOUSY, or, most frequently, DELUSIONS OF PERSECUTION.

**paranoid disorder** see DELUSIONAL DISORDER.

**paranoid ideation** thought processes involving persistent suspiciousness and beliefs of being persecuted, harassed, or treated unfairly by others.

**paranoid litigious state** see LITIGIOUS PARANOIA.

**paranoid personality disorder** in *DSM–IV–TR*, a personality disorder characterized by (a) pervasive, unwarranted suspiciousness and distrust (e.g., expectation of trickery or harm, overconcern with hidden motives and meanings); (b) hypersensitivity (e.g., being easily slighted or offended, readiness to counterattack); and (c) restricted

affectivity (e.g., emotional coldness, no true sense of humor). The diagnosis has been retained in *DSM-5*.

**paranoid pseudocommunity** see PSEUDOCOMMUNITY.

**paranoid psychosis** a psychotic condition characterized by persecutory delusions without personality disorganization or deterioration. See DELUSIONAL DISORDER; PARANOID STATE.

**paranoid-schizoid position** in the OBJECT RELATIONS THEORY of Melanie KLEIN, the period from birth to the 6th month of life during which infants perceive the world in terms of PART-OBJECTS and develop a fear of annihilation and persecutory anxiety due to the power of their DEATH INSTINCT. Infants use various primitive DEFENSE MECHANISMS against these fears, including (a) the PROJECTION of aggression onto an external object; (b) directing their own aggression against the imagined persecutory object; and (c) INTROJECTION and SPLITTING of the breast into a good object and a bad object (see BAD BREAST; GOOD BREAST). The paranoid-schizoid position is a lifelong possibility, manifested in later life by an inability to accept that anyone can be both bad and good and by certain pathologies (e.g., paranoia, psychosis) that are believed to be marked by a chronic tendency to be stuck in this position. Compare DEPRESSIVE POSITION.

**paranoid schizophrenia** in *DSM-IV-TR*, a subtype of schizophrenia, often with a later onset than other types, characterized by prominent delusions or auditory hallucinations. Delusions are typically persecutory, grandiose, or both; hallucinations are typically related to the content of the delusional theme. Cognitive functioning and mood are affected to a much lesser degree than in other types of schizophrenia. This subtype has been eliminated from *DSM-5*.

**paranoid state** a condition characterized by delusions of persecution or grandiosity that are not as systematized and elaborate as in a DELUSIONAL DISORDER or as bizarre as in paranoid schizophrenia. Also called **paranoid condition**.

**paranormal** *adj.* denoting any purported phenomenon involving the transfer of information or energy that cannot be explained by existing scientific knowledge. See also EXTRASENSORY PERCEPTION; OCCULT; PARAPSYCHOLOGY; PRETERNATURAL; SUPERNATURAL.

**paranormal cognition** see EXTRASENSORY PERCEPTION.

**paranosic gain** see PRIMARY GAIN.

**paraphasia** *n.* a speech disturbance characterized by the use of incorrect, distorted, or inappropriate words or sounds, which in some cases resemble the correct word in sound or meaning and in other cases are irrelevant or nonsensical. For example, a wheelchair may be called a "spinning wheel," and a hypodermic needle might be called a "tie pin." The disorder occurs in a variety of forms (e.g., LITERAL PARAPHASIA, SEMANTIC PARAPHASIA) and is seen most commonly in neurological disorders (e.g., PICK'S DISEASE). Also called **paraphrasia**. —**paraphasic** *adj.*

**paraphemia** *n.* a speech disorder marked by the habitual introduction of inappropriate words or by the meaningless combination of words.

**paraphilia** *n.* in *DSM-IV-TR*, any of a group of disorders in which unusual or bizarre fantasies or behavior are necessary for sexual excitement. The fantasies or acts persist over a period of at least 6 months and may take several

forms; preference for a nonhuman object, such as animals or clothes of the opposite sex; repetitive sexual activity involving real or simulated suffering or humiliation, as in whipping or bondage; or repetitive sexual activity with nonconsenting partners. Paraphilias include such specific types as FETISHISM, FROTTEURISM, PEDOPHILIA, EXHIBITIONISM, VOYEURISM, SEXUAL MASOCHISM, SEXUAL SADISM, and NECROPHILIA. In *DSM-5*, a paraphilia is considered a **paraphilic disorder** only if it causes distress or impairment to the individual or if its practice has harmed or risked harming others. —**paraphiliac** *adj.*

**paraphonia** *n.* an abnormal change in voice quality.

**paraphrase** *vb.* to express the meaning of a text or utterance in different words, often for the sake of clarity or brevity. See also INTERPRET.

**paraphrasia** *n.* see PARAPHASIA. —**paraphrasic** *adj.*

**paraphrasic error** an error that results in incoherent speech, most often from combining existing words, eliminating syllables from words, or creating new words.

**paraphrenia** *n.* **1.** a late-onset psychotic condition that is marked by delusions and hallucinations but is distinct from schizophrenia by virtue of the absence of generalized intellectual impairment and distinct from degenerative dementias by virtue of the absence of a progressively deteriorating course. See also LATE PARAPHRENIA. [first described by Emil KRAEPELIN] **2.** any of various mental disorders that are associated with transitional periods of life (e.g., adolescence, old age). [defined in 1863 by German physician Karl Ludwig Kahlbaum (1828–1899)] **3.** loosely, any of a variety of conditions, such as LATE-ONSET SCHIZOPHRENIA, PARANOID SCHIZOPHRENIA, or certain PARANOID STATES.

**paraplegia** *n.* paralysis of the legs and lower part of the trunk. See also SPASTIC PARAPLEGIA. —**paraplegic** *adj.*

**parapraxis** *n.* an error that is believed to express unconscious wishes, attitudes, or impulses. Examples of such errors include slips of the pen, SLIPS OF THE TONGUE and other forms of VERBAL LEAKAGE, forgetting significant events, mislaying objects with unpleasant associations, unintentional puns, and motivated accidents. Also called **parapraxis**. See also FREUDIAN SLIP; SYMPTOMATIC ACT.

**paraprofessional** *n.* a trained but not professionally credentialed worker who assists in the treatment of patients in both hospital and community settings.

**parapsychology** *n.* the systematic study of alleged psychological phenomena involving the transfer of information or energy that cannot be explained in terms of presently known scientific data or laws. Such study has focused largely on the various forms of EXTRASENSORY PERCEPTION, such as TELEPATHY and CLAIRVOYANCE, but also encompasses such phenomena as POLTERGEIST activity and the claims of MEDIUMS. Although **parapsychologists** are committed to scientific methods and procedures, the field is still regarded with suspicion by most scientists, including most psychologists. This can perhaps be attributed to three main reasons: (a) Admitting even one instance of paranormal causation would potentially lead to the reexamination and reframing of numerous established laws and principles of science; (b) even the best-documented positive findings in this area have proved impossible to replicate; and (c) some researchers have been duped by charlatans. —**parapsychological** *adj.* —**parapsychologist** *n.*

**parareaction** *n.* an abnormal or exaggerated reaction to

a relatively minor incident (e.g., tripping), which may become the basis for a delusion.

**parasite** *n.* a species that depends on another for survival but generally does not kill it. There are many intestinal parasites that are of value in the digestion of food for their hosts. Some parasites induce illness or debilitation but do not weaken the host so severely that it (and therefore the parasite) will die. Others will survive only if they can find an alternative host before the death of their current host; some of these parasites can alter the behavior of their hosts to make transfer to another host more likely. —**parasitic** *adj.*

**parasitism** *n.* **1.** in biology, an INTERSPECIES INTERACTION in which one organism (the parasite) lives on or in an organism of another species (the host). The arrangement is beneficial to the parasite but often harmful to the host. Compare COMMENSALISM; MUTUALISM. **2.** by analogy, a social relationship in which one individual habitually benefits from the generosity of another without making any useful return.

**parasomnia** *n.* a SLEEP DISORDER characterized by abnormal behavior or physiological events during sleep or during the transitional state between sleep and waking. Examples include NIGHTMARE DISORDER, SLEEP TERROR DISORDER, SLEEPWALKING DISORDER, restless-legs syndrome (see EKBOM'S SYNDROME), and CONFUSIONAL AROUSAL, among others. The parasomnias recognized in *DSM-IV-TR* form one of two broad groups of primary sleep disorders, the other being DYSSOMNIAS. Those recognized in *DSM-5* are part of a larger category of sleep-wake disorders. See also DYSFUNCTIONS ASSOCIATED WITH SLEEP, SLEEP STAGES, OR PARTIAL AROUSALS.

**parasuicide** *n.* a range of behaviors involving deliberate self-harm that may or may not be intended to result in death. PASSIVE SUICIDE is an example.

**parasympathetic drug** see CHOLINERGIC DRUG.

**parasympathetic nervous system** one of two branches of the AUTONOMIC NERVOUS SYSTEM (ANS), the other being the SYMPATHETIC NERVOUS SYSTEM. Anatomically it comprises the portion of the ANS whose preganglionic fibers leave the central nervous system from the brainstem via the OCULOMOTOR, FACIAL, GLOSSOPHARYNGEAL, and VAGUS NERVES and from the spinal cord via three sacral nerves (see SPINAL NERVE). It is defined functionally as the system controlling rest, repair, enjoyment, eating, sleeping, sexual activity, and social dominance, among other functions. The parasympathetic nervous system stimulates salivary secretions and digestive secretions in the stomach and produces pupillary constriction, decreases in heart rate, and increased blood flow to the genitalia during sexual excitement. Also called **parasympathetic division**.

**parasympatholytic drug** see ANTICHOLINERGIC DRUG.

**parasympathomimetic drug** see CHOLINERGIC DRUG.

**parataxic distortion** in psychoanalytic theory, a distorted perception or judgment of others on the basis of past experiences or of the unconscious. Also called **transference distortion**. [introduced by Harry Stack SULLIVAN]

**parataxis** *n.* **1.** broadly, a lack of integration among components of personality, cognitive style, or emotions. The term is now infrequently used. **2.** in language, joining syntactic units (e.g., words, phrases) without the use of conjunctions, as in *I came; I saw; I conquered*.

**parathyroid gland** a small, paired endocrine gland found in the area of the thyroid gland. It secretes parathyroid hormone, which takes part in the control of calcium and phosphate metabolism.

**parathyroid hormone** a hormone secreted by the parathyroid glands when blood-calcium levels are low. It promotes dissolution of bone tissue and absorption of calcium by the intestine, thereby increasing the concentration of calcium (and phosphate) in the blood. Thus, together with CALCITONIN, it participates in calcium regulation. Also called **parathyrin**.

**Para-Time S.R.** a trade name for PAPAVERINE.

**paratype** *n.* the totality of environmental influences that act on an organism to produce individual expression of a genetic trait or character. See also GENOTYPE; PHENOTYPE.

**paratypic** *adj.* referring to the acquired properties (as opposed to genetic endowments) of an organism that result from exposure to environmental forces.

**paraventricular nucleus (PVN)** a particular collection of neurons in the HYPOTHALAMUS that synthesize numerous hormones, among them OXYTOCIN and VASOPRESSIN.

**paraverbal therapy** a method of psychotherapy, introduced in the 1970s, for children who have difficulty communicating verbally (e.g., due to trauma, hyperactivity, autism, withdrawal, language disturbances). Assuming that these children would feel more intrigued and less threatened by a nonverbal approach, the therapy uses various expressive media, including the components of music (tempo and pitch), mime, movement, and art to help the children express themselves. [developed by child psychotherapist Evelyn P. Heimlich]

**paraworld** *n.* a hypothetical world of ideal conditions that serves as a basis for formulating a model of some system or process believed to be true in the actual world. Such model building can be an important strategy in science.

**paregoric** *n.* a medication containing a tincture of opium that is administered to control severe cases of diarrhea. It relieves pain and discomfort and reduces intestinal motility. It is also used to treat opioid withdrawal in neonates and may be used as well with children and adults. Besides opium, paregoric contains camphor, benzoic acid, glycerin, anise oil, and alcohol. It was developed in the early 18th century. Also called **camphorated tincture of opium**.

**parenchyma** *n.* the functioning tissues of an organ or gland, as distinguished from supporting or connecting tissues. —**parenchymatous** *adj.*

**parens patriae** a doctrine promoting the power and interest of the government (Latin, "parent of the country") in caring for and protecting minors and individuals who are unable to care for themselves or to provide for their own basic needs, even if implementing this doctrine necessitates restricting their rights. In the United States, this power and interest is vested with the individual states.

**parental alienation syndrome (PAS)** a child's experience of being manipulated by one parent to turn against the other (targeted) parent and resist contact with him or her. This alignment with one parent and rejection of the other most often arises during child custody disputes following divorce or separation proceedings, particularly when the litigation is prolonged or involves significant an-

tagonism between the parties. As described in 1985 by the concept's originator, U.S. child psychiatrist Richard A. Gardner (1931–2003), PAS has eight symptoms that distinguish an affected child from one who is experiencing a typical adverse reaction to an estranged parent during separation or divorce: (a) relentless denigration of the targeted parent; (b) a frivolous, weak, or absurd rationale for the denigration; (c) a lack of guilt or embarrassment about the denigration; (d) a lack of ambivalence such that the child considers one parent to be entirely “good” and the other parent to be entirely “bad”; (e) automatic support for the alienating parent in any conflict; (f) hostility toward and refusal of contact with the extended family of the targeted parent; (g) the presence of “borrowed scenarios,” in which the child’s speech when describing aversion to the targeted parent often includes the same phrases used by the alienating parent; and (h) the child’s insistence that he or she is expressing his or her own opinions in denigrating the targeted parent.

Although some accept PAS as admissible evidence in child custody disputes, there have been no well-controlled empirical studies that confirm the phenomenon, nor have a standardized assessment process and specific diagnostic criteria been established for it. Consequently, many critics express concerns about its continued influence on legal proceedings. The syndrome has been dismissed by the American Psychiatric Association, American Psychological Association, and American Medical Association as lacking supporting empirical or clinical evidence and it is not included in the *Diagnostic and Statistical Manual of Mental Disorders* or the *International Classification of Diseases*. Despite the significant controversy surrounding this syndrome, the more generalized concept of **parental alienation** often is viewed as a legitimate dynamic in many family situations, describing the harm done to a child’s security with one caregiver as a result of exposure to another caregiver’s unfavorable actions toward or criticism of that person.

**parental alliance** see COPARENTING.

**parental behavior** in nonhuman animals, the process of preparing for the birth of offspring (often through nest building) and the actions of one or both parents that contribute to the survival or well-being of their young after birth. The latter include (a) NURSING or otherwise provisioning the young with food, (b) RETRIEVING BEHAVIOR or carrying young in species that do not build permanent nests, and (c) weaning the offspring so that they can become independent. Many hormonal controls of parental behavior have been identified in females (as well as in males of those species in which males participate in care of young). Among human beings and other primates, parental behavior is less dependent on hormonal changes and more dependent on sociocultural and experiential factors than among other animals, although hormonal changes do still occur. See also MATERNAL BEHAVIOR; PATERNAL BEHAVIOR.

**parental investment** the amount of energy a parent expends in parental care. Because female mammals go through gestation and subsequent lactation, it is often assumed that they have greater parental investment than do males. However, there is considerable male parental investment in COOPERATIVE-BREEDING species, such as marmoset and tamarin monkeys, in which males can lose up to 10% of body weight during the period when offspring must be carried constantly. Male parental investment may also be high in species in which males defend the young from predators or attacks from other members of the same species.

**parental investment theory** the proposition that many sex differences in sexually reproducing species (including humans) can be understood in terms of the amount of time, energy, and risk to their own survival that males and females put into parenting versus mating (including the seeking, attaining, and maintaining of a mate). Differences in parenting and mating investment between males and females vary among species and as a function of environmental conditions. [proposed in 1972 by U.S. sociobiologist Robert L. Trivers (1943– )]

**parental leave** see FAMILY LEAVE.

**parental perplexity** a parent–child relationship marked by a lack of parental spontaneity, extreme indecisiveness, and an inability to sense and satisfy the child’s needs. Such primary relationships may result in psychological problems (e.g., overdependency) during childhood and have further consequences throughout development.

**parental rejection** persistent denial of approval, affection, or care of a child by one or both parents, sometimes concealed beneath a cover of overindulgence or overprotection. The frequent results are corrosion of the child’s self-esteem and self-confidence, a poor self-image, inability to form attachments to others, tantrums, generalized hostility, and development of psychophysical and emotional disturbances. See CHILD NEGLECT.

**parental separation** see MARITAL SEPARATION.

**parent–child interaction therapy (PCIT)** an intervention for parents with preschool children at risk for developing a conduct disorder. The intervention teaches parenting skills in two phases. In the first phase, the focus is on improving the child–parent relationship by teaching parents to play with their child in a positive, nondirective manner using PLAY THERAPY techniques; parents are also taught basic skills (e.g., selective ignoring, giving praise) to help modify unwanted behaviors in their child. In the second phase, the focus shifts to teaching parents strategies for behavior management, such as giving clear instructions to their child and applying appropriate consequences for noncompliance (e.g., TIME OUT, withdrawal of privileges). [developed in the 1970s by U.S. clinical child psychologist Sheila Eyberg]

**parent–child psychotherapy** a psychodynamically informed, ATTACHMENT-BASED INTERVENTION for infants, toddlers, and preschoolers whose behavior and emotions have been adversely affected by negative relationships with their parents or primary caregivers. Common difficulties in these young children include oppositional behavior or aggression, frequent tantrums, eating problems, and sleeping disturbances. In this approach, the therapist offers guidance to help parents recognize and understand how their own recurring perceptions, attributions, affects, and behavioral responses influence the child and contribute to current relationship difficulties. In achieving this understanding, parents theoretically become better able to grasp what the young child is experiencing, to respond more sensitively to his or her needs, and to forge a healthier, more loving relationship with the child that will improve his or her socioemotional functioning. Parent–child psychotherapy is an extension of **parent–infant psychotherapy**, developed in the 1970s by U.S. clinical social worker Selma H. Fraiberg (1918–1981). [created by Paraguayan-born U.S. developmental psychologist Alicia F. Lieberman (1947– )]

**parent effectiveness training (PET)** an education program designed to develop prosocial interactions be-

tween parents and children by improving parents' problem-solving and communication skills in child rearing. [introduced in 1962 by U.S. psychologist Thomas Gordon (1918–2002)]

**parenting** *n.* all actions related to the raising of offspring. Researchers have described different human **parenting styles**—ways in which parents interact with their children—with most classifications varying on the dimensions of emotional warmth (warm vs. cold) and control (high in control vs. low in control). One of the most influential of these classifications is that of U.S. developmental psychologist Diana Baumrind (1927– ), involving four types of styles: **authoritarian parenting**, in which the parent or caregiver stresses obedience, deemphasizes collaboration and dialogue, and employs strong forms of punishment; **authoritative parenting**, in which the parent or caregiver encourages a child's autonomy yet still places certain limitations on behavior; **permissive parenting**, in which the parent or caregiver is accepting and affirmative, makes few demands, and avoids exercising control; and **rejecting-neglecting parenting**, in which the parent or caregiver is unsupportive, fails to monitor or limit behavior, and is more attentive to his or her needs than those of the child.

**Parenting Stress Index (PSI)** an instrument used to assess stress in parent–child interactions and to identify potentially dysfunctional parenting behaviors or potential behavior problems in the child. It currently consists of 120 questionnaire items to which parents respond using a 5-point LIKERT SCALE format, ranging from *strongly agree* to *strongly disagree*. Originally published in 1983, the PSI is now in its fourth edition. [developed by U.S. educational psychologist Richard R. Abidin (1938– )]

**parenting style** see PARENTING.

**parenting training** any program that instructs parents and other caregivers in techniques for effectively dealing with problem behavior in their children. Also called **parent training**. See also FAMILY INTERVENTION.

**parent management training (PMT)** a treatment approach based on the principles of OPERANT CONDITIONING. Parents use antecedents, behaviors, and consequences to change child and adolescent behavior at home, at school, and in other settings. The goals are to help children develop prosocial behaviors and to decrease oppositional, aggressive, and antisocial behaviors. See also PROBLEM-SOLVING SKILLS TRAINING. [developed by U.S. clinical child psychologist Alan E. Kazdin (1945– )]

**parent–offspring conflict** in animal behavior, a conflict that arises when parents cease providing care for current offspring and invest in producing the next set of offspring. The parents will benefit in terms of REPRODUCTIVE SUCCESS by breeding again as soon as the current offspring have a high probability of surviving independently. The offspring, however, will gain more by continued investment from their parents, creating the conflict. Parent–offspring conflict is manifested through regressive behavior, including tantrums, by the older offspring and through SIBLING RIVALRY.

**Parents Anonymous** a peer-led, professionally facilitated group for parents who would like to learn more effective methods of childrearing, thus strengthening families and providing a means of preventing child abuse.

**Parents Without Partners** an international organi-

zation providing mutual social support, educational programs, and activities for single parents and their children.

**parent teachers association (PTA)** an organization consisting of instructors and the parents of students. Its aims are to assist parents with parenting skills, to support and create a forum for students in the community and government, and to encourage public and parental involvement in public schools. The **National Parent Teachers Association (NPTA)** is a not-for-profit organization whose goal is to improve the welfare of children and young people. Its primary activities include public education, strengthening schools in large cities, and preventing substance abuse among students. It has also worked in many areas of child health and safety through various educational projects.

**parergasia** *n.* **1.** a symptom of schizophrenia in which the individual performs an action that is not intended, such as opening the mouth when asked to close the eyes. [defined by Emil KRAEPELIN] **2.** a former name for schizophrenia, introduced by Adolf MEYER to replace DEMENTIA PRAECOX, since he believed this disorder is best described in terms of disorganized behavior and distorted thought processes.

**paresis** *n.* partial or incomplete paralysis.

**paresthesia** *n.* an abnormal skin sensation, such as tingling, tickling, burning, itching, or pricking, in the absence of external stimulation. Paresthesia may be temporary, as in the “pins and needles” feeling experienced after having sat with one's legs crossed too long, or chronic and due to such factors as neurological disorder or drug side effects. —**paresthetic** *adj.*

**paretic** *adj.* relating to or experiencing PARESIS.

**paretic psychosis** see GENERAL PARESIS.

**Pareto principle** **1.** in economics, the principle that 80% of the wealth in any society will be owned by 20% of the population. **2.** more generally, the rule of thumb that 80% of any given output is produced by 20% of input. For example, in any retail organization, 80% of the sales will be accounted for by 20% of the customers. Also called **80:20 rule**. [Vilfredo Pareto (1848–1923), Italian economist and sociologist]

**parica** *n.* see EPENA.

**parietal cortex** the cerebral cortex of the PARIETAL LOBE.

**parietal drift** see POSTURAL ARM DRIFT.

**parietal lobe** one of the four main subdivisions of each cerebral hemisphere. It occupies the upper central area of each hemisphere, behind the FRONTAL LOBE, ahead of the OCCIPITAL LOBE, and above the TEMPORAL LOBE. Parts of the parietal lobe participate in somatosensory activities, such as the discrimination of size, shape, and texture of objects; visual activities, such as visually guided actions; and auditory activities, such as speech perception.

**parieto-occipital sulcus** a groove (sulcus) that runs upward along the medial (inner) side of each cerebral hemisphere, extending from a junction with the CALCARINE FISSURE at a point posterior to the SPLENIUM, and forming the border between the CUNEUS and PRECUNEUS regions.

**Paris Medical School** a group of doctors and students at the Salpêtrière Hospital in Paris who advanced the hypotheses and research of Jean-Martin CHARCOT, particularly with regard to his neurological studies of a posited



relation between hysteria and hypnotism. Sigmund FREUD, who studied through a fellowship under Charcot, was greatly influenced by the Paris Medical School in his early studies and in the direction of his future work.

**Parkes–Weber syndrome** see STURGE–WEBER SYNDROME.

**parkinsonian** *adj.* of or relating to Parkinson's disease or parkinsonism.

**parkinsonian tremor** see RESTING TREMOR.

**parkinsonism** *n.* any disorder whose symptoms resemble those of Parkinson's disease, with or without the actual presence of the disease. Antipsychotic agents with strong dopamine-blocking activity, particularly the HIGH-POTENCY ANTIPSYCHOTICS (e.g., haloperidol), may cause the usually reversible syndrome known as **drug-induced parkinsonism** (**pseudoparkinsonism**).

**Parkinson's disease (PD)** a progressive neurodegenerative disease caused by the death of dopamine-producing neurons in the pars compacta region of the SUBSTANTIA NIGRA of the brain, which controls balance and coordinates muscle movement. Symptoms typically begin late in life with mild tremors (see RESTING TREMOR), increasing rigidity of the limbs, and slowness of voluntary movements. Later symptoms include postural instability, impaired balance, and difficulty walking (see FESTINATING GAIT). Dementia occurs in some 20% to 60% of patients, usually in older patients in whom the disease is far advanced, and depression and anxiety are often observed as well. [first described in 1817 by James **Parkinson** (1755–1824), British physician]

**Parlodel** *n.* a trade name for BROMOCRIPTINE.

**parole** *n.* **1.** in psychology and psychiatry, a method of maintaining supervision of a patient whose treatment is mandated by the court and who has not been discharged but who is away from the confines of a restrictive setting, such as a mental institution or halfway house. A patient on parole may be returned to confinement at any time without formal action by a court. **2.** supervised release from confinement in a correctional facility.

**parorexia** *n.* a pathological compulsion to consume unusual foods or nonnutritive substances. See also CISSA; PICA.

**parosmia** *n.* a disorder of the sense of smell in which a person is unable to distinguish odors correctly. For example, when presented with an odor of beer, the person might say it smells of bleach. Also called **parosphresia**. See also DYSOSMIA; TROPOSMIA.

**paroxetine** *n.* an antidepressant of the SSRI class. Like other SSRIs, it is used to treat depression, panic disorder, social phobia, and obsessive-compulsive disorder. It differs from other SSRIs in that most patients find it to be sedating rather than activating and thus better taken in the evening rather than on rising. It should not be taken by patients who are already taking MONOAMINE OXIDASE INHIBITORS. Paroxetine is available in immediate- and controlled-release preparations. U.S. trade name: **Paxil**.

**paroxysm** *n.* **1.** the sudden intensification or recurrence of a disease or an emotional state. **2.** a convulsion, spasm, or seizure. —**paroxysmal** *adj.*

**paroxysmal sleep** see NARCOLEPSY.

**parse** *vb.* **1.** in vision, to deconstruct a complex stimulus into its component features and attributes. **2.** in linguistics,

to analyze a sentence into its constituent parts, such as subject, verb, object, and the like, in order to map its syntactic structure.

**parsimony** *n.* see LAW OF PARSIMONY.

**part correlation** the association between two variables,  $x$  and  $y$ , with the influence of a third variable,  $z$ , removed from one (but only one) of the two variables. This can help a researcher to get a clearer understanding of the relationship between  $x$  and  $y$ . Also called **semipartial correlation**. Compare PARTIAL CORRELATION; ZERO-ORDER CORRELATION.

**parthenogenesis** *n.* literally, virgin birth: the production of offspring without fertilization of the egg cells by sperm. It is the usual means of reproduction in some species. —**parthenogenetic** *adj.*

**partial** *n.* any frequency component in a COMPLEX TONE. A partial is not necessarily a HARMONIC.

**partial agonist** a substance that binds to a receptor but fails to produce the same degree of response as a full AGONIST at the same receptor site or exerts only part of the action exerted by the endogenous neurotransmitter that it mimics. Partial agonists may exhibit the same affinity for the receptor site as do full agonists and may act as competitive inhibitors of full agonists. Minor variations in the chemical structure of either the receptor or the binding substance may dictate whether the substance acts as a full or partial agonist at any particular receptor site.

**partial agraphia** an older, less common name for AGRAPHIA.

**partial correlation** the association between two variables,  $x$  and  $y$ , with the influence of one or more other variables ( $z_1, z_2$ ) statistically removed, controlled, or held constant; the effect of the  $z$  variable is removed from both  $x$  and  $y$ . For example, the partial correlation between salary and education level can be examined after the effects of age on each are removed. It is often of interest to learn whether a correlation is significantly reduced in magnitude once a third variable is removed. Also called **higher order correlation**; **higher order partial correlation**. Compare PART CORRELATION; ZERO-ORDER CORRELATION.

**partial decussation** see OPTIC CHIASM.

**partial hospitalization** hospital treatment of patients on a part-time basis (i.e., less than 24 hours per day). See DAY HOSPITAL; NIGHT HOSPITAL; WEEKEND HOSPITALIZATION.

**partialing** *n.* an approach to the STATISTICAL CONTROL of the influence of a variable or set of variables on other variables of interest (typically, the dependent and independent variables). Partialing helps clarify a specific relationship by excluding the effects of other variables that may also be associated. In a MULTIPLE REGRESSION model, for example, a researcher may want to remove the effects of a set of COVARIATES before examining the final REGRESSION COEFFICIENTS of interest. Also called **partialing out**.

**partial insanity** a borderline condition in which mental impairment is present but is not sufficiently severe to render the individual completely irresponsible for his or her acts. In legal proceedings, a conclusion of partial insanity may arise when there is evidence that a mental disorder was probably a contributing cause to a defendant's criminal actions or that the disorder rendered the individual incapable of deliberation, premeditation, malice, or another mental state usually requisite for first-degree offenses; in

such circumstances, it may lead to conviction for a lesser offense. See also DIMINISHED RESPONSIBILITY; INSANITY; M'NAGHTEN RULE.

**partial instinct** see COMPONENT INSTINCT.

**partial-interval recording** a method for measuring or coding instances of behavior within particular time periods of observation. For frequently occurring behaviors or behaviors with a long duration, a researcher can identify time intervals in advance of the coding and have judges indicate whether a particular behavior occurs (or not) within each period. For example, in videos of mock job interviews, the method could be used to record whether the candidate had eye contact with the interviewer during different periods of the interview. See also WHOLE-INTERVAL RECORDING.

**partialism** *n.* a type of PARAPHILIA in which a person obtains sexual satisfaction from contact with a partner's body part other than the usual erotic areas such as lips, breasts, and genitals (e.g., a leg). Partialism is distinguished from FETISHISM in which an object, such as a shoe, replaces the sexual partner.

**partial least squares regression** a statistical procedure that generalizes and combines features from PRINCIPAL COMPONENTS ANALYSIS and MULTIPLE REGRESSION. It is used when a researcher wants to estimate the outcomes on a set of dependent variables from a (very) large set of predictors, especially when these predictors have a high degree of MULTICOLLINEARITY or exceed the number of obtained observations.

**partial lipodystrophy** a form of LIPODYSTROPHY marked by the loss of adipose tissue from the face, extremities, or other parts of the body. See also TOTAL LIPODYSTROPHY.

**partially ordered scale** a scale that falls partway between a NOMINAL SCALE and an ORDINAL SCALE, in that the scaling units can be ranked from lowest to highest in most but not all cases.

**partial reinforcement** see INTERMITTENT REINFORCEMENT.

**partial reinforcement effect (PRE)** increased RESISTANCE TO EXTINCTION after intermittent reinforcement rather than after continuous reinforcement. Also called **partial reinforcement extinction effect (PREE)**.

**partial replication** a REPLICATION of an empirical study in which only a subset of the study's design and methodology are repeated. Often, a researcher will choose to conduct a partial replication to show that the general findings of a study remain the same, despite the methodological changes.

**partial report** a method of testing memory in which only some of the total information presented is to be recalled. For example, if several rows of letters are shown to the participant, a cue given afterward may prompt recall of only one particular row. Partial report methods are used to minimize OUTPUT INTERFERENCE in studies of ICONIC MEMORY. Compare WHOLE REPORT.

**partial schedule of reinforcement** see INTERMITTENT REINFORCEMENT.

**partial seizure** a seizure that begins in a localized area of the brain, although it may subsequently progress to a GENERALIZED SEIZURE. **Simple partial seizures** produce no alteration of consciousness despite clinical manifestations, which may include sensory, motor, or autonomic activity.

COMPLEX PARTIAL SEIZURES may produce similar sensory, motor, or autonomic symptoms but are also characterized by some impairment or alteration of consciousness during the event. Partial seizures of both types are most commonly focused in the temporal lobe. Also called **focal seizure**.

**partial sight** see LOW VISION.

**participant** *n.* a person who takes part in an investigation, study, or experiment, such as by performing tasks set by the experimenter or by answering questions set by a researcher. In an experimental design, the person may be further identified as an **experimental participant** (see EXPERIMENTAL GROUP) or a **control participant** (see CONTROL GROUP). Participants may also be referred to as SUBJECTS, particularly by those who wish to avoid the implication that experimentees are involved in the construction, design, conduct, and analysis of the experiment. See also RESPONDENT.

**participant modeling** a procedure for changing behavior in which effective styles of behavior (e.g., of coping) are demonstrated step-by-step and analyzed by a therapist for an individual, who then practices the modeled behavior. Various aids are introduced to help the individual master the behavior, such as videotaped enactments of effective and ineffective behavioral responses to prototypical situations in a variety of social contexts (e.g., at school or work). By contrast, **symbolic modeling** is a procedure in which the individual only observes, but does not also practice, a modeled behavior as enacted in film, videotape, or other media. [developed by Albert BANDURA]

**participant observation** a QUASI-EXPERIMENTAL RESEARCH method in which a trained investigator studies a preexisting group by joining it as a member, while avoiding a conspicuous role that would alter the group processes and bias the data. The researcher's role may be known or unknown to the other members of the group. Cultural anthropologists become **participant observers** when they enter the life of a given culture to study its structure and processes. Also called **participative research; participatory research**.

**participants' rights** in a study approved by an INSTITUTIONAL REVIEW BOARD, a set of conditions relating to participants in the study and their role in the research. Participants normally should be informed about the purpose of the study (but see DECEPTION RESEARCH), its procedures (i.e., what specifically is expected to occur) and the associated costs and benefits; that their data from the study will be kept confidential; whom they can contact if they have any concerns about the study; and that they can leave the study at any time without penalty. Also called **subjects' rights**. See also INFORMED CONSENT; RESEARCH ETHICS.

**participation** *n.* **1.** taking part in an activity, usually one that involves others in a joint endeavor. **2.** the interaction of two or more systems that mutually influence each other. **3.** in PIAGETIAN THEORY, the tendency of children to confuse their wishes, fantasies, or dreams with reality. —**participate** *vb.*

**participative decision making (PDM)** the management practice of allowing employees to participate in the decision-making process. The extent of participation can vary from a relatively low level, in which employees provide input or consult with decision makers, to the highest level, in which employees are fully involved and actually

make the decisions. See INDUSTRIAL DEMOCRACY; QUALITY CIRCLE; SCANLON PLAN.

**participative leadership** a LEADERSHIP STYLE in which followers are allowed to become involved in decision making and are given autonomy in performing their tasks.

**participative management** a style of management that allows employees to be involved in the governance, management, or decision-making processes of an organization.

**participative research** see PARTICIPANT OBSERVATION.

**participatory action research** a form of ACTION RESEARCH that emphasizes collaboration between researchers and members of the disadvantaged community of interest.

**participatory design** in ergonomics, design practice that supports direct input from end users during the DEVELOPMENT CYCLE.

**participatory ergonomics** a process in which employees at all levels within an organization are directly and actively involved in developing or enhancing ergonomic practices to improve worker health and safety.

**participatory evaluation** a type of PROGRAM EVALUATION in which the individuals who provide a service (e.g., professional staff) take a direct role in evaluating the service or program; clients of the service provided may also be involved. The official evaluator facilitates proceedings rather than actually conducting the appraisal. Also called **collaborative evaluation**; **empowerment evaluation**.

**participatory research** see PARTICIPANT OBSERVATION.

**particularism** *n.* **1.** in philosophy, a solution to the so-called **criterion problem**, which states that one cannot know whether one has knowledge because to recognize particular bits of knowledge one would need to know the criteria by which they are judged to be knowledge, and in order to know the criteria, one would already have to be able to recognize bits of knowledge. Particularism resolves this problem by stating that no general criteria are necessary to determine particular bits of knowledge. **2.** in ethics, the doctrine that there are no general moral principles and that judgments of moral behavior cannot be made on the basis of such principles. Moral judgments must instead take account of many particular factors in a person's background and current situation. This position tends toward moral RELATIVISM. See also MORAL NIHILISM; SUBJECTIVISM. —**particularist** *adj.*

**partition** **1.** *vb.* in statistics and measurement, to divide VARIANCE observed in the DEPENDENT VARIABLE into component elements on the basis of its nature and origin. **2.** *n.* a specific component of the observed variance (e.g., variance due to a treatment effect and variance due to RANDOM ERROR).

**part-list cuing inhibition** in a RECALL test, impairment of the capacity to recall individual items if some of the other items in the list studied are provided as retrieval CUES. That is, studying some of the items in a list may impair retrieval of other, nonstudied items in the same list. Also called **part-set cuing effect**.

**part method of learning** a learning technique in which the material is divided into sections, each to be mastered separately in a successive order. Compare WHOLE METHOD OF LEARNING.

**partner abuse** see DOMESTIC VIOLENCE; INTIMATE PARTNER VIOLENCE.

**partner swapping** a form of GROUP SEX in which two or more couples mutually agree to exchange partners or spouses for the purpose of sexual intercourse. The practice may also include watching one's partner participate in sexual intercourse with another person's partner. Also called **mate swapping**; **wife swapping**. See also SWINGING.

**part-object** *n.* **1.** in psychoanalytic theory, an OBJECT toward which a COMPONENT INSTINCT is directed. Such an object is usually a part of the body rather than a whole person. **2.** in the OBJECT RELATIONS THEORY of Melanie KLEIN, an early object representation that derives from SPLITTING the object into parts containing negative and positive qualities. It is held that such objects constitute the infant's first experience of the world, being perceived as a GOOD OBJECT or a BAD OBJECT according to whether they are gratifying or frustrating. INTERNALIZATION of part-objects is further posited to represent the beginning of the inner world of objects whose relationships create the infant's personality. See also DEPRESSIVE POSITION; PARANOID-SCHIZOID POSITION.

**part-set cuing effect** see PART-LIST CUING INHIBITION.

**parturition** *n.* the act or process of giving birth to a child (or children, in the case of a multiple birth).

**part-whole problem** **1.** the controversy over whether to approach an issue, particularly a psychological one, from an atomistic or a holistic perspective; that is, whether to view some phenomenon as a structured set of components or as an integrated functioning totality. **2.** the issue of whether to learn something by memorizing its constituent parts or by attempting to commit its totality to memory.

**paruresis** *n.* a fear of urinating, resulting in an inability to urinate where others may be present (e.g., in public restrooms). Considered a SOCIAL PHOBIA, paruresis leads one to restrict social activities to avoid the possibility of having to use a restroom in a public venue. Also called **avoidant paruresis**; **bashful bladder syndrome**; **shy bladder syndrome**.

**parvocellular system** the part of the visual system that projects to or originates from small neurons in the four dorsal layers (the **parvocellular layers**) of the LATERAL GENICULATE NUCLEUS. It allows the perception of fine details, colors, and large changes in brightness. The parvocellular system is expanded in primates compared to that in other animals; it conducts information relatively slowly because of its small cells and slender axons. See also P-CELL. Compare MAGNOCELLULAR SYSTEM.

**PAS 1.** abbreviation for PARENTAL ALIENATION SYNDROME.

**2.** abbreviation for PRECATEGORICAL ACOUSTIC STORAGE.

**PASAT** abbreviation for PACED AUDITORY SERIAL ADDITION TEST.

**pascal** *n.* see SOUND PRESSURE.

**pasmo** *n.* see SUSTO.

**passband** *n.* see FILTER.

**passion** *n.* **1.** an intense, driving, or overwhelming feeling or conviction. Passion is often contrasted with emotion, in that passion affects a person unwillingly. **2.** intense sexual desire. **3.** a strong enthusiasm for or devotion to an activity, object, concept, or the like. —**passionate** *adj.*

**passionate love** a type of love in which emotional

arousal and usually sexual passion are prominent features; along with COMPANIONATE LOVE, it is one of the two main types of love identified by social psychologists. Passionate lovers typically are greatly preoccupied with each other, want their feelings to be reciprocated, and are usually greatly distressed when the relationship seems awry. See also LIMERENCE; ROMANTIC LOVE; TRIANGULAR THEORY OF LOVE.

**passionflower** *n.* a climbing herb, *Passiflora incarnata*, indigenous to the southeastern United States and other subtropical areas but also cultivated as an ornamental plant. Parts of the plant have been used both externally and internally for a variety of medicinal purposes, ranging from treatment of burns and hemorrhoids to the alleviation of neuralgia and spasms or seizures. **Passionflower tea** has long been a folk remedy for the relief of nervous tension. Although some studies suggest passionflower has sedative properties and it has been approved in Germany for treatment of insomnia and anxiety, definitive clinical evidence of this effect has not been established. Adverse reactions are rare but may include nausea, vomiting, and rapid heart rate.

**passive** *adj.* **1.** acted upon rather than acting. **2.** describing a personality pattern that is submissive, compliant, easily influenced by external forces, and dependent on others. See also DEPENDENT PERSONALITY DISORDER. **3.** in grammar, denoting the PASSIVE VOICE of a verb.

**passive-aggressive** *adj.* characteristic of behavior that is seemingly innocuous, accidental, or neutral but that indirectly displays an unconscious aggressive motive. For example, a person who constantly keeps people waiting and then is baffled at why they resent this behavior is passive-aggressively disavowing an unconscious wish to be special and to provoke those who fail to acknowledge the specialness.

**passive-aggressive personality disorder** a personality disorder of long standing in which AMBIVALENCE toward the self and others is expressed by such means as procrastination, dawdling, stubbornness, intentional inefficiency, "forgetting" appointments, or misplacing important materials. These maneuvers are interpreted as passive expressions of underlying NEGATIVISM. The pattern persists even when more adaptive behavior is clearly possible; it frequently interferes with occupational, domestic, and academic success. This disorder was classified in the appendix of *DSM-IV-TR* and given an alternative name, **negativistic personality disorder**, in accordance with the theoretical proposals of Theodore MILLON. Its mention has been retained in *DSM-5*.

**passive attention** see PRIMARY ATTENTION.

**passive avoidance** a type of OPERANT CONDITIONING in which the individual must refrain from an explicit act or response that will produce an aversive stimulus. Compare ACTIVE AVOIDANCE.

**passive-avoidance learning** a commonly used misnomer for PUNISHMENT. It is usually used in situations in which the behavior that is punished occurs without specific training, as when a mouse on a platform learns to avoid stepping down onto an electrified grid after receiving a shock from it.

**passive coping** a stress-management strategy in which a person absolves himself or herself of responsibility for managing a stressor and instead relinquishes control over

its resolution to external resources, such as other people and environmental factors. Individuals who cope passively often withdraw from interpersonal relationships and instead engage in such activities as hoping, praying, or avoiding the stressor. This type of COPING STRATEGY generally is considered maladaptive, having been associated with increased depression, poorer psychological adjustment, and other adverse consequences. It is similar to the earlier conceptualization of EMOTION-FOCUSED COPING but distinguished by its focus on external factors and abdication of personal responsibility. Compare ACTIVE COPING. [identified in 1987 by Gregory K. Brown and Perry M. Nicassio (1947– ), U.S. clinical psychologists]

**passive deception** the withholding of certain information from research participants, such as not informing them of the true focus of the study. As long as certain conditions are met (e.g., DEBRIEFING), this approach is generally considered acceptable, because researchers may not want to reveal their hypotheses to study participants in case this leads them—consciously or nonconsciously—to adjust their behavior. Compare ACTIVE DECEPTION.

**passive-dependent personality** see DEPENDENT PERSONALITY DISORDER.

**passive euthanasia** the intentional withholding of treatment that might prolong the life of a person who is approaching death. It is distinguished from ACTIVE EUTHANASIA, in which direct action (e.g., a lethal injection) is taken to end the life. Courts have ruled that physicians do not have to try every possible intervention to prolong life, but opinions differ on where the line should be drawn. There is also controversy regarding the significance of the passive-active distinction, since both approaches result in shortening the life.

**passive joy** see JOY.

**passive learning** **1.** learning that may occur without the intention to learn, through exposure to information or behavior. See INCIDENTAL LEARNING. **2.** learning that occurs without active MNEMONIC involvement, as in DRILL and ROTE LEARNING.

**passive listening** in psychotherapy and counseling, attentive listening by the therapist or counselor without intruding upon or interrupting the client in any way. See also ACTIVE LISTENING.

**passive management by exception** a style of management in which the manager intervenes and takes charge only if subordinates fail to meet work standards.

**passive negativism** see NEGATIVISM.

**passive noise protection** see ACTIVE NOISE PROTECTION.

**passive recreation** a form of RECREATIONAL THERAPY in which the emphasis is on an individual's amusement or entertainment, such as attending a musical concert. Compare ACTIVE RECREATION.

**passive rehearsal** a strategy for retaining information in short-term memory in which a person includes few (usually one) unique items per REHEARSAL set. Compare CUMULATIVE REHEARSAL.

**passive resistance** resistance to a government, policy, or law through nonviolent means, such as fasting, demonstrating, or CIVIL DISOBEDIENCE.

**passive suicide** ambiguous behavior that tends to be

self-destructive, but not actively so, and is sometimes thought to reflect suicidal intentions. Examples of this behavior include failing to feed oneself or to engage in rudimentary self-care.

**passive touch** a form of touch characterized by sensory experiences that occur when the observer does not move. In passive touch, stimulation is imposed on the skin of the individual. Compare ACTIVE TOUCH.

**passive transport** the movement of substances across a cell membrane without expenditure of energy by the cell. It includes simple diffusion of ions through ion channels and facilitated diffusion of larger molecules assisted by transport proteins. Compare ACTIVE TRANSPORT.

**passive vocabulary** see RECEPTIVE VOCABULARY.

**passive voice** in linguistics, the category of a verb used when the PATIENT of the action appears as the grammatical SUBJECT of the clause or sentence and the AGENT appears as the grammatical OBJECT. The passive voice, which is much less common than the standard ACTIVE VOICE, is illustrated by the sentence *The purse was stolen by the thief*, as opposed to *The thief stole the purse*.

**passivism** *n.* an attitude of submissiveness, especially in sexual relations (e.g., male passivism).

**passivity** *n.* a form of adaptation, or maladaptation, in which the individual adopts a pattern of submissiveness, dependence, and retreat into inaction.

**passivity phenomena** phenomena in which individuals feel that some aspect of themselves is under the control of others. These aspects can include acts, impulses, movements, emotions, or thoughts; patients typically report feeling that they are being made to do or think things by someone else or that they are experiencing the behaviors or emotions of someone else.

**PASS model** a model of intelligence based on the theory of Alexander LURIA, according to which intelligence comprises separate abilities for simultaneous and successive processing. The four elements of the model are planning, attention, simultaneous processing, and successive processing. [developed by Canadian psychologist Jagannath Prasad (J.P.) Das (1931– ) and U.S. psychologist Jack A. Naglieri (1950– )]

**past-life regression** a highly controversial HYPNOTIC REGRESSION technique in which a person is encouraged to move back in time to reexperience a supposed previous existence. Therapists who conduct past-life regression believe that the psychological and physical problems (e.g., phobias, insomnia) individuals currently have can be understood and resolved by discovering their origins in the experiences (e.g., traumas, unresolved conflicts, mistakes) of previous lives. Most hypnotherapists are skeptical of the practice and do not recognize it as a legitimate therapeutic tool. They claim that individuals' memories of past lives are the product of fantasy, imaginative role playing, the expectations and suggestions implicitly conveyed to them by the hypnotist, or unconsciously produced confabulations constructed from personal knowledge, familiar places, events, television shows, novels, and other sources. Although the idea of reincarnation is accepted in numerous cultures, clinicians generally consider actual past-life enactments to be manifestations of psychopathology. Also called **past-life regression therapy**; **past-life therapy**. See also AGE REGRESSION.

**pastoral counseling** a form of counseling or psycho-

therapy in which insights and principles derived from theology and the behavioral sciences are used to help individuals, couples, families, and groups achieve healing and growth. Pastoral counseling is centered in theory and research on the interaction of religion and science, spirituality and health, and spiritual direction and psychotherapy. A **pastoral counselor** receives advanced training in one or several of the behavioral sciences (often psychology specifically) in addition to religious training, theological training, or both. Also called **pastoral psychotherapy**.

**past-pointing** *n.* see POINTING.

**PAT** acronym for PROGRESSIVE ACHIEVEMENT TESTS.

**Patau syndrome** see TRISOMY 13. [German-born U.S. geneticist Klaus **Patau** (1908–1975)]

**patch-clamp technique** the use of very fine-bore pipette MICROELECTRODES, clamped by suction onto tiny patches of the plasma membrane of a neuron, to record the electrical activity of a single square micrometer of the membrane, including single ION CHANNELS. [devised in the 1980s by German neuroscientists Erwin Neher (1944– ) and Bert Sakmann (1942– )]

**patellar reflex** a reflex in which tapping the tendon beneath the knee causes an upward kick of the leg. Also called **knee-jerk reflex**.

**paternal attitudes** attitudes of a father toward his children, particularly those attitudes that play an important role in his children's health, character formation, emotional adjustment, and self-image, as well as in his own self-perception as a father.

**paternal behavior** actions by males, especially among nonhuman animals, that are directed toward care of their young. Direct paternal behavior consists of such actions as feeding, carrying, or otherwise nurturing the offspring; it is thought to be rare, given that many males lack CERTAINTY OF PATERNITY. Indirect paternal behavior consists of acquiring resources or defending the group from harm, which indirectly leads to increased survival of the young. Males of species with biparental care undergo some hormonal changes similar to those in females: increased secretion of PROLACTIN and ESTROGEN. Early experience with young offspring is important for competent paternal behavior in many species. See also MATERNAL BEHAVIOR; PARENTAL BEHAVIOR.

**paternalism** *n.* a policy or attitude in which those having authority over others extend this authority into areas usually left to individual choice or conscience (e.g., smoking, sexual behavior), usually on the grounds that this is necessary for the welfare or protection of the individuals concerned. —**paternalist** *n.* —**paternalistic** *adj.*

**path analysis** a type of STRUCTURAL EQUATION MODELING used to examine a set of simultaneous LINEAR RELATIONSHIPS between variables. Results are displayed using a figure in which boxes denote measured variables, bidirectional arrows show correlations, directional arrows show causal or predictive relations, and arrows coming from nowhere show error associated with the prediction model. Each variable is expressed as a linear FUNCTION of the preceding variable as well as by a unique LATENT VARIABLE; the weights and STANDARD ERRORS for each coefficient provide information about the size of the PARAMETER. GOODNESS OF FIT is tested by comparing models with more pathways to models with fewer pathways. Also called **path modeling**. See PATH DIAGRAM.

**path coefficient** in PATH ANALYSIS, any of a set of weights that reflect the strength of the different facets of the relationships among MANIFEST VARIABLES in a system. For example, if the model indicates that  $A \rightarrow B \rightarrow C$ , there would be a path coefficient for the relationship between A and B and another for the relationship between B and C; these would be direct effects, whereas the relationship between A and C would be an indirect effect, working through the impact of B.

**path constraint** any restriction on how one may proceed in solving a problem. For example, in the TOWER OF HANOI puzzle, two path constraints are that the solver must move one disk at a time and may not place a larger disk on a smaller one.

**path diagram** a figure describing the hypothesized relationships tested in an analysis of simultaneous LINEAR RELATIONSHIPS among measured or MANIFEST VARIABLES; the object is to identify the causal relationships or logical ordering among variables. Each measured variable is designated by a box, and latent variables are represented by ovals. COVARIANCES or correlations between EXOGENOUS VARIABLES and between errors are represented by curved lines with arrowheads at both ends. Paths are represented by straight lines with an arrowhead pointing from the INDEPENDENT VARIABLE toward the DEPENDENT VARIABLE. Associated with each path is either an asterisk or a number. The asterisks indicate free PARAMETERS, whose values will be estimated from the data, whereas the numbers indicate fixed parameters, whose values do not change as a function of the data. Also called **path model**. See also PATH ANALYSIS.

**path-goal theory of leadership** a LEADERSHIP THEORY stating that leaders will be effective insofar as they make it clear to followers how they can achieve goals and obtain rewards. By doing so, leaders enhance their followers' expectancy that hard work will lead to task success and that task success will lead to valued rewards. The four basic LEADERSHIP STYLES proposed in this theory are instrumental (directive), supportive, participative, and ACHIEVEMENT-ORIENTED LEADERSHIP. Each of these styles can be effective or ineffective, depending on the nature of the work environment and the characteristics of subordinates. See also VALENCE-INSTRUMENTALITY-EXPECTANCY THEORY.

**path modeling** see PATH ANALYSIS.

**patho-** (path-) *combining form* suffering or disease.

**pathoclisis** *n.* **1.** sensitivity to particular toxins. **2.** the tendency of particular toxins to target certain organs or systems of organs.

**pathogen** *n.* any agent (e.g., bacterium, virus) that contributes to disease or otherwise induces unhealthy structural or functional changes. —**pathogenicity** *n.*

**pathogenesis** *n.* the origin and development of a mental or physical disease or disorder. Also called **nosogenesis**; **pathogeny**. —**pathogenetic** *adj.*

**pathogenic family pattern** negative or harmful family attitudes, standards, and behavior that lay the groundwork for mental and behavioral disorder. Examples are parental rejection; TRIANGULATION of the child into the marital relationship between the parents; and excessively harsh, excessively lenient, or inconsistent discipline.

**pathogeny** *n.* see PATHOGENESIS.

**pathognomonic** *adj.* describing a sign, symptom, or a

group of signs or symptoms that is indicative of a specific physical or mental disorder and not associated with other disorders.

**pathognomy** *n.* the recognition of feelings, emotions, and character traits, particularly when they are signs or symptoms of disease.

**pathological aggression** **1.** aggression that is violent, explicitly directed against individuals or property, and either part of a longstanding repertoire of destructive or hurtful behavior or a sudden, paroxysmal reaction to a real or perceived provocation. It may be a manifestation of psychiatric disorder (e.g., psychosis, posttraumatic stress disorder, antisocial personality disorder, some impulse-control disorders); neurological disease or injury; substance abuse (e.g., of alcohol); and some sexual behaviors (e.g., sexual sadism). **2.** felonious assault with intent to harm or kill.

**pathological aging** changes that occur because of age-related disease, as distinct from changes associated with normal healthy aging.

**pathological doubt** **1.** abnormal concern about having failed to perform a particular action, such as locking the door upon leaving the house. It is a common feature of OBSESSIVE-COMPULSIVE DISORDER. **2.** a negative belief about one's ability or future that often results in the inhibition of behavior and is commonly associated with a MAJOR DEPRESSIVE EPISODE.

**pathological fallacy** an overgeneralization in which the pathological or abnormal characteristics of an individual or small group are attributed to the general population.

**pathological gambling** in *DSM-IV-TR*, an impulse-control disorder characterized by chronic, maladaptive wagering, leading to significant interpersonal, professional, or financial difficulties. *DSM-5* characterizes this behavioral pathology as a nonsubstance-related addiction and refers to it as GAMBLING DISORDER. Also called **compulsive gambling**.

**pathological grief** see COMPLICATED GRIEF.

**pathological inertia** **1.** the inability to switch SETS or show flexibility due to a brain injury or psychological condition. **2.** severely impaired initiative, drive, or motivation sometimes associated with brain damage, particularly to the frontal lobes. See ABULIA.

**pathological intoxication** see IDIOSYNCRATIC INTOXICATION.

**pathological jealousy** see DELUSIONAL JEALOUSY.

**pathological lying** a persistent, compulsive tendency to tell lies out of proportion to any apparent advantage that can be achieved. This often occurs among people with alcohol dependence or brain damage, but it is most common among individuals with ANTISOCIAL PERSONALITY DISORDER, who in some cases do not seem to understand the nature of a falsehood. See also PSEUDOLOGIA FANTASTICA.

**pathology** *n.* **1.** the scientific study of functional and structural changes involved in physical and mental disorders and diseases. **2.** more broadly, any departure from what is considered healthy or adaptive. —**pathological** *adj.* —**pathologist** *n.*

**pathomimicry** *n.* conscious or unconscious mimicking, production, or feigning of symptoms of disease or disorder. Also called **pathomimesis**. See FACTITIOUS DISORDER; LASTHÉNIE DE FERJOL SYNDROME; MALINGERING.

**pathomiosis** *n.* a patient's minimization or denial of illness.

**pathomorphism** *n.* any abnormal or extreme body build. —**pathomorphic** *adj.*

**pathophysiology** *n.* the functional alterations that appear in an individual or organ as a result of disease or disorder, as distinguished from structural alterations. —**pathophysiological** *adj.*

**pathway** *n.* a route or circuit along which something moves. Also called **path**. See NEURAL PATHWAY.

**-pathy** *suffix* **1.** disease or disorder (e.g., PSYCHOPATHY). **2.** therapy or treatment (e.g., HOMEOPATHY). **3.** perception or feeling (e.g., EMPATHY).

**patient** *n.* **1.** a person receiving health care from a licensed health professional. See INPATIENT; OUTPATIENT. See also PATIENT–CLIENT ISSUE. **2.** in linguistics, the entity that is affected by or undergoes the main action described in a clause or sentence, such as *door* in *James opened the door* or *James knocked on the door*. The patient is usually the grammatical OBJECT and is easiest to identify when this is the case; however, *door* is both subject and patient in such constructions as *The door was opened by James* (see PASSIVE VOICE), *The door swung open*, and (in some analyses) *The door is open*. In CASE GRAMMAR, the term EXPERIENCER is sometimes used for a patient who is a sentient being, such as *Angus* in *Angus felt threatened* or *Angus saw it all*. Compare AGENT; INSTRUMENTAL.

**patient abuse** harm caused by treatment providers to those in their care by exploiting their patients' vulnerability and their own position of influence and trust to engage in inappropriate, unprofessional behavior. Such abuse, which sometimes takes the form of sexual involvement with a patient, is usually grounds for legal and professional action against the practitioner. Also called **client abuse**. See also PROFESSIONAL ETHICS; PROFESSIONAL STANDARDS.

**patient-centered medical home** see HEALTH HOME.

**patient–client issue** the dilemma of how to identify the recipient of psychological services or intervention (i.e., the nomenclature used for the recipient). Psychiatrists, many clinical psychologists, and some other mental health providers tend to follow the traditional language of the medical model and refer to the people seeking their services as **patients**. Counseling psychologists, some clinical psychologists, social workers, and counselors tend to avoid the word *patient*, which is associated with illness and dysfunction, and instead use the word **client** to refer to the person seeking their services.

**patient history** **1.** in therapy and counseling, a systematic account of an individual's development from birth to the present, including meaningful aspects of his or her emotional, social, and intellectual development. The account is taken by the therapist or counselor directly from the individual and may additionally be derived from autobiographical material or reports from family members. See ANAMNESIS. **2.** see CASE HISTORY.

**Patient Protection and Affordable Care Act (PPACA)** legislation, signed into law in 2010, that ensures that all citizens of the United States have access to quality, affordable health care. In addition to mandating universal health insurance coverage, the law includes provisions for improving the quality and efficiency of health care by linking payment to outcomes; increasing support for prevention and public health innovation; and enhancing health

care workforce education and training. Because it was spearheaded by and passed under the administration of President Barack Obama, the law is also called **Obamacare**.

**patients' rights** any statement, listing, summary, or the like that articulates the rights that health care providers (e.g., physicians, medical facilities) ethically ought to provide to those receiving their services. These rights include (a) the provision of adequate information regarding treatment benefits, risks, costs, and alternatives; (b) fair treatment (e.g., respect, responsiveness, timely attention to health issues); (c) autonomy over medical decisions (e.g., obtaining full consent for medical interventions); and (d) CONFIDENTIALITY.

**patient variable** any characteristic of an individual in treatment, such as gender, age, personality, attitude, race, ethnicity, socioeconomic status, religious background, and cognitive status (e.g., intellectual disability), that may influence the process and outcome of treatment. Also called **patient characteristic**.

**patient violence** intentional physical force with the potential for causing death, disability, or injury by a patient against a mental health provider, staff member, another patient, or himself or herself. In the United States, mental health practitioners have a DUTY TO PROTECT third parties from a patient's intended act of violence. See also DUTY TO WARN; TARASOFF DECISION.

**patriarchy** *n.* **1.** a society in which descent and inheritance is **patrilineal**, that is, traced through the male only. See UNILATERAL DESCENT. See also DESCENT GROUP. **2.** more loosely, a family, group, or society in which men are dominant. Compare MATRIARCHY. —**patriarchal** *adj.*

**patricide** *n.* **1.** the murder of one's own father. **2.** a person who murders his or her own father. Compare MATRICIDE. —**patricidal** *adj.*

**patrilineal** *adj.* see PATRIARCHY.

**patrilocal** *adj.* denoting an arrangement in which a married couple resides with or in proximity to the husband's father or relatives, or a culture in which this is the norm. Also called **virilocal**. Compare MATRILocal; NEOLOCAL.

**pattern** *n.* a spatial or temporal arrangement of separate elements to make a complex whole.

**pattern analysis** a class of methods (e.g., CLUSTER ANALYSIS, FACTOR ANALYSIS, DISCRIMINANT ANALYSIS) used by researchers to recognize and find systematic regularity within a much larger data set. Often, these methods use computer modeling and simulation approaches and involve DATA MINING, image processing, and the study of networks.

**pattern coding** the coding of information in sensory systems based on the temporal pattern of action potentials.

**pattern discrimination** the ability of humans and other animals to distinguish differences in patterns of visual, auditory, or other types of stimuli. See also PATTERN RECOGNITION.

**patterned interview** a type of interview, often used in PERSONNEL SELECTION, that is designed to cover certain specific areas (e.g., work history, education, home situation) but at the same time to give the interviewer the chance to steer the dialogue into side channels and ask questions on points that need to be clarified. Also called **semistructured interview**. Compare STRUCTURED INTERVIEW; UNSTRUCTURED INTERVIEW.

**patterning** *n.* **1.** the establishment of a system or pattern of responses to stimuli. **2.** an arrangement of stimuli that will evoke a new or different set of responses.

**pattern recognition** **1.** the ability to recognize and identify a complex whole composed of, or embedded in, many separate elements. Pattern recognition is not only a visual ability; in audition, it refers to (a) the recognition of temporal patterns of sounds or (b) the recognition of patterns of excitation of the BASILAR MEMBRANE, such as that which occurs during the perception of vowels in speech. **2.** the identification and classification of meaningful patterns of data input by computers, based on the extraction and comparison of the characteristic properties or features of the data.

**pattern theory** a theory maintaining that the nerve impulse pattern for pain is produced by intense stimulation of nonspecific receptors, since there are no specific fibers or endings exclusively for the experience of pain. According to this theory, the nerves involved in detecting and reporting pain are shared with other senses, such as touch, and the most important feature of pain is the amount of stimulation involved. Also called **nonspecificity theory**. Compare GATE-CONTROL THEORY; SPECIFICITY THEORY.

**pattern theory of taste coding** a theory postulating that each GUSTATORY STIMULUS evokes a unique pattern of neural activity from the TASTE-CELL population and that this pattern serves as the neural representation of the evoking stimulus. Taste quality is coded in the shape of the evoked pattern, whereas intensity is represented by the total discharge rate. Compare LABELED-LINE THEORY OF TASTE CODING.

**pattern vision** the ability to discriminate between shapes, sizes, and other features of objects in the environment by visual patterns. Pattern vision is lost following a lesion or excision of the STRIATE CORTEX, where many of the elements of visual patterns are processed.

**patulous eustachian tube** see AUTOPHONY.

**pause** *n.* in linguistics, a rest or delay in speech. Short (often barely distinguishable) pauses are used to mark the JUNCTURE between linguistic units, such as syllables, words, and sentences, whereas longer pauses may be used for deliberate effect or may indicate psychological activity in the speaker. The analysis of the location of pauses in speech is an active area of research. —**pausal** *adj.*

**Pavlovian conditioning** see CLASSICAL CONDITIONING. [Ivan PAVLOV]

**pavor** *n.* a frightening dream characterized by its realism and residual feelings of terror on waking. **Pavor nocturnus** occurs during the night (see SLEEP TERROR DISORDER); **pavor diurnus** may occur in young children during a daytime nap. See also NIGHTMARE.

**Paxil** *n.* a trade name for PAROXETINE.

**Paxipam** *n.* a trade name for HALAZEPAM.

**pay equity** see COMPARABLE WORTH.

**pay-for-performance (P4P; PFP)** *adj.* **1.** denoting a method of payment for health care services in which physicians, hospitals, and other providers receive financial rewards for delivering good patient care, as assessed by patient self-reports and various process-based measures (e.g., rates of adherence to treatment, rates of preventive care, use of information technology). Intended to improve the quality and value of health care, P4P programs are ex-

panding rapidly worldwide and take a variety of forms according to their sponsor type (e.g., health plan, employer group), reward size, reward distribution method, and other factors. There is, however, limited empirical evidence of P4P effectiveness and growing concern about possible unintended consequences, such as provider avoidance of poorer or sicker patients, provider neglect of activities in areas not targeted for financial rewards, and provider discounting of patients' treatment preferences. Critics also claim that P4P incentives largely reward those providers with higher performance at baseline, who already are eligible to receive bonuses and therefore have little motivation to improve further. Additionally, the majority of existing P4P programs target general medical care—primary care physicians in particular—and have yet to significantly influence behavioral health. Compare FEE-FOR-SERVICE. **2.** more generally, describing any system of compensation based on measures of work quality or productivity. For example, P4P has a long history in industrial settings, and a growing trend in schools has been the development of systems of accountability designed to enhance the quality of education.

**Payne v. Tennessee** a case resulting in a 1991 U.S. Supreme Court decision establishing that the admissibility in court of VICTIM IMPACT STATEMENTS must be considered on a case-by-case basis and that such statements are not per se excluded from all sentencing proceedings.

**payoff evaluation** see OUTCOME EVALUATION.

**payoff matrix** a schedule or table that lists the costs and benefits arising from every possible course of action that could be chosen by an individual—for example, by a player in a game or a business manager developing a new product. Ideally, the individual will show shifts in decision criteria that maximize the payoff.

**PBA** abbreviation for PSEUDOBULBAR AFFECT.

**PCA** abbreviation for PRINCIPAL COMPONENTS ANALYSIS.

**PCC** abbreviation for POSTERIOR CINGULATE CORTEX.

**P-cell** *n.* any of various small neurons in the four dorsal layers of the six-layered LATERAL GENICULATE NUCLEUS. P-cells are the origin of the PARVOCELLULAR SYSTEM. The RETINAL GANGLION CELLS that provide input to the P-cells of the lateral geniculate nucleus are called **P-ganglion cells**. See also M-CELL.

**PChE** abbreviation for pseudocholinesterase. See CHOLINESTERASE.

**PCIT** abbreviation for PARENT-CHILD INTERACTION THERAPY.

**P1 component** the first positive component of an EVENT-RELATED POTENTIAL, occurring approximately 100 ms after stimulus onset. The P1 component is usually larger for attended stimuli than for unattended stimuli, a phenomenon known as the **P1 attention effect**. Hence, it is thought to reflect the initial sensory and attentional processing of a stimulus by specific areas of the cerebral cortex.

**P2 component** the second positive component of an EVENT-RELATED POTENTIAL, occurring approximately 200 ms after stimulus onset. An electrophysiological index of attention-related cerebral processing, the P2 component is thought to reflect feature analysis, goal-directed action selection (intention), and other higher order perceptual and motivational processes. It also is involved in a variety of



other cognitive activities, including the allocation and modulation of information-processing resources, the evaluation of the emotional significance of stimuli, language processing, and memory (e.g., working memory, recognition). Also called **P200**.

**P3 component** the third positive component of an EVENT-RELATED POTENTIAL, which appears approximately 300 ms after stimulus onset. First reported in 1965, the P3 component is thought to reflect attentional resource allocation and memory-updating operations and has become a major focus of research into event-related potentials. Also called **P300**.

**PCP 1.** *n.* 1-(1-phenylcyclohexyl)piperidine (phencyclidine); a hallucinogenic drug sometimes referred to as a “psychedelic anesthetic” because it was originally developed as an amnestic analgesic for use in surgical contexts and was later found to produce a psychedelic or dissociative reaction. Its medical use was discontinued because of adverse reactions, including agitation, delirium, disorientation, and hallucinations. High doses may induce stupor or coma. PCP has a complex mechanism of action. It binds as an ANTAGONIST to the NMDA RECEPTOR; it also acts as a DOPAMINE-RECEPTOR AGONIST and blocks the reuptake of dopamine, norepinephrine, and serotonin, among other actions. Because intoxication with PCP can produce symptoms resembling both the positive and negative symptoms of schizophrenia, some consider it to be a useful drug model of that disorder. PCP became common as an illicit drug in the 1970s. It can be smoked (often in combination with marijuana or tobacco), insufflated (inhaled nasally), or taken orally or intravenously (see ANGEL DUST). Despite speculation about its potential to damage nerve tissue, PCP remains a popular illicit drug. It is still used in veterinary medicine, primarily as an immobilizing anesthetic during surgical procedures. See also HALLUCINOGEN. **2.** abbreviation for PRIMARY CARE PROVIDER.

**PCR** abbreviation for POLYMERASE CHAIN REACTION.

**Pcs** abbreviation for PRECONSCIOUS.

**PD 1.** abbreviation for PANIC DISORDER. **2.** abbreviation for PARKINSON’S DISEASE. **3.** abbreviation for PERSONALITY DISORDER. **4.** abbreviation for PSYCHOLOGICAL DEBRIEFING.

**PDAT** abbreviation for PRESENILE DEMENTIA OF THE ALZHEIMER’S TYPE.

**PDE** abbreviation for PRINCIPLE OF DOUBLE EFFECT.

**PDF** abbreviation for PROBABILITY DENSITY FUNCTION.

**PDM 1.** abbreviation for PARTICIPATIVE DECISION MAKING. **2.** abbreviation for PSYCHODYNAMIC DIAGNOSTIC MANUAL.

**PDP 1.** abbreviation for PARALLEL DISTRIBUTED PROCESSING. **2.** abbreviation for PROCESS-DISSOCIATION PROCEDURE.

**Peabody Picture Vocabulary Test (PPVT)** a norm-referenced screening, diagnostic, and progress-monitoring test in which sets of four full-color drawings are presented to the participant, who selects the one that corresponds to a word uttered by the examiner. There are 228 stimulus words in two parallel forms (A and B) that are administered individually. The test, now in its fourth edition (**PPVT-4**; 2007), may be used with individuals ages 2 years 6 months to over 90 years to assess receptive vocabulary and verbal ability. [originally developed in 1959 by psychologists Lloyd M. Dunn (1917–2006) and Leota M. Dunn (1917–2001) at **Peabody** College of Vanderbilt University, Nashville]

**peak clipping** the elimination of high-amplitude portions of speech waves by electronic means, causing some loss of quality but little, if any, loss of intelligibility. Peak clipping makes it possible to reduce high-intensity noise and enable a hearing aid or public address system to make the best use of its available power.

**peak experience** in the humanistic psychology of Abraham MASLOW, a moment of awe, ecstasy, or sudden insight into life as a powerful unity transcending space, time, and the self. Peak experiences may at times occur for individuals in their pursuit of SELF-ACTUALIZATION. See also BEING COGNITION; TIMELESS MOMENT; TRANSPERSONAL PSYCHOLOGY.

**peak performance** performance of a task at the optimum level of an individual’s physical abilities, mental capabilities, or both.

**peak procedure** a procedure, used in behavioral studies, in which repetitions of a FIXED-INTERVAL SCHEDULE of reinforcement are interspersed with periods, usually two or three times as long as the fixed interval, in which reinforcement is omitted.

**peak shift 1.** a phenomenon in STIMULUS GENERALIZATION that occurs after DISCRIMINATION TRAINING involving two stimuli along a common dimension (e.g., brightness). The peak of the response gradient (i.e., the point at which the organism shows maximum response) is shifted in a direction away from the less favorable stimulus (e.g., a dim light) to a point beyond the value of the stimulus associated with reinforcement (e.g., beyond the value of a bright light to that of a very bright light). **2.** in aesthetics, the phenomenon in which a SUPERNORMAL STIMULUS is preferred over the normal form of that stimulus.

**Pearson product-moment correlation coefficient** see PRODUCT-MOMENT CORRELATION COEFFICIENT. [Karl PEARSON]

**Pearson’s *r*** see PRODUCT-MOMENT CORRELATION COEFFICIENT. [Karl PEARSON]

**pecking order** regular patterns of dominance (pecking, threatening, chasing, fighting, avoiding, crouching, and vocalizing) in chickens and other animals. This term has been extended to denote any (usually linear) sequence of authority, status, and privilege that prevails in some organizations and social groups. See also DOMINANCE HIERARCHY.

**pectus carinatum** a malformation of the chest wall in which the sternum (breastbone) protrudes prominently. The condition may be a symptom of such disorders as rickets and MARFAN’S SYNDROME. Also called **pigeon breast**.

**ped-** combining form see PEDO-.

**pedagogy** *n.* the activity or profession of imparting knowledge or instruction. —**pedagogical** *adj.*

**pederasty** *n.* sex, usually anal intercourse, between an adult male (**pederast**) and a boy or young man (see CATAMITE).

**pedestrian movement** the generally regular and predictable flow of pedestrian traffic in a public area, such as a shopping mall, plaza, or street intersection. Despite apparently random patterns of foot traffic, pedestrians usually follow the most direct route to a destination, which may or may not conform to the pathways planned and constructed for pedestrian movement.

**pediatric** *adj.* pertaining to the health and medical care

of children or to child development. **Pediatrics** is the medical specialty dealing with wellness care and treatment of disease in infants, children, and adolescents.

**pediatric neuropsychology** a specialty that studies the behavior and cognitive abilities of children in terms of the neural mechanisms that underlie brain activity, especially in cases of brain damage or other neurological disorder. **Clinical pediatric neuropsychology** is the application of such study to the assessment and treatment of children with autism, attention-deficit/hyperactivity disorder, language or learning difficulties, problems in motor skills development, and similar challenges. Age-appropriate tests of ability are used to draw conclusions relating specifically to the brain-behavior relationship in these individuals. See also CLINICAL NEUROPSYCHOLOGY; SCHOOL NEUROPSYCHOLOGY.

**pediatric psychology** an interdisciplinary field of research and practice that addresses physical, behavioral, and emotional development as it interacts with health and illness in children, adolescents, and families. Related to the larger field of HEALTH PSYCHOLOGY, pediatric psychology focuses on the child in the contexts of the family, school, and health care settings. It tends to take a normative developmental view of adaptation based on physical conditions, medical treatment, and psychosocial interactions with family and peers, rather than a psychopathological view of adjustment to disease and disorders.

**pediatric psychopharmacology** the branch of pharmacology that involves the study of drugs used to treat mental and behavioral disorders of childhood and adolescence. It helps determine the choice of drug according to the age of the child, the diagnosis, the duration and severity of the disorder, and the availability of the patient for behavioral and laboratory monitoring of drug effects.

**pediatric therapy** services such as occupational therapy, physical therapy, and speech therapy that are provided to children with SENSORY INTEGRATION DYSFUNCTION or other neurological deficits.

**pedigree** *n.* **1.** in medical genetics, a pictorial representation of the history of an illness in a family. It depicts the relationship of family members and—for each member—current status (alive or not), the date of diagnosis, kind of relevant illness, age at diagnosis, and other data. By reviewing this pedigree, geneticists can often estimate other family members' likelihood of developing the illness. **2.** family lineage or ancestry, especially when this is regarded as distinguished or notable. **3.** the line of descent of a purebred animal, or a record of such descent.

**pedigree method** the study of family history and genealogy as a means of tracing traits that might be inherited. The method was applied by Francis GALTON in his studies of genius and by Henry Herbert GODDARD in his studies of intellectual disability.

**pedo-** (**ped-**; **paedo-**; **paed-**) *combining form* children.

**pedology** *n.* an early 20th-century educational movement in Europe whose stated purpose was the scientific study of the physical and mental development of children. Interest in pedology manifested itself especially within the emerging Soviet psychology of the 1920s, and Lev VYGOTSKY was among its supporters. Because of its emphasis on ability testing and examination of individual differences, however, it was banned by the Soviets as a "false science" in 1936.

**pedomorphism** *n.* the attribution of childish behavior characteristics to adults. Compare ADULTOMORPHISM. —**pedomorphic** *adj.*

**pedomorphosis** *n.* the retention of juvenile characteristics in adult organisms.

**pedophilia** *n.* a PARAPHILIA in which sexual acts or fantasies involving prepubertal children are the persistently preferred or exclusive method of achieving sexual excitement. The children are usually many years younger than the **pedophile** (or **pedophiliac**). Sexual activity may consist of looking and touching but may include intercourse, even with very young children. Pedophilia is rarely seen in women. —**pedophilic** *adj.*

**peduncle** *n.* a stalklike bundle of nerve fibers, such as the CEREBELLAR PEDUNCLE or the CEREBRAL PEDUNCLE. —**peduncular** *adj.*

**peduncular hallucinosis** recurrent visual hallucinations caused by pathological processes in the upper brainstem, which indirectly affect the central visual system. The hallucinations are usually recognized as such by the patient, and they may be long-lasting, vivid, and scenic, involving a panorama of people and events from the patient's past life. They are often accompanied by agitation and sleep disturbances and may be mixed with nonhallucinatory perceptions.

**peeping Tom** slang for a voyeur (see VOYEURISM), derived from the name of a tailor who, according to the 11th-century legend, peeked at Lady Godiva as she was riding naked through the streets of Coventry, England.

**peer** *n.* an individual who shares a feature or function (e.g., age, sex, occupation, social group membership) with one or more other individuals. In developmental psychology, a peer is typically an age mate with whom a child or adolescent interacts.

**peer counseling** counseling by an individual who has a status equal to that of the client, such as a college student trained to counsel other students or an employee trained to counsel coworkers.

**peer facilitation** the use of a peer counseling model, generally within a group setting, to pursue educational or problem-solving goals. For example, peer facilitation has been used with elementary school children to mediate conflict and in college-level distance learning to increase student participation in online discussions.

**peer group** a group of individuals who share one or more characteristics, such as age, social status, economic status, occupation, or education. Members of a peer group typically interact with each other on a level of equality and exert influence on each other's attitudes, emotions, and behavior (see PEER PRESSURE). Although children begin to interact before the age of 2, genuine peer groups based on shared age typically do not develop until the age of 5 years or later.

**peer pressure** the influence exerted by a peer group on its individual members to fit in with or conform to the group's norms and expectations. Peer pressure may have positive SOCIALIZATION value but may also have negative consequences for mental or physical health. Also called **peer-group pressure**.

**peer rating** the evaluation of an individual's behavior by his or her associates (e.g., a physician peer review). In child development research, peer ratings are sometimes obtained

from members of a child's peer group (e.g., school class members).

**peer review** the evaluation of scientific or academic work, such as research or articles submitted to journals for publication, by other qualified professionals practicing in the same field.

**peer tutoring** the teaching of one student by another who has displayed sufficient competency in a subject to help a fellow student learn a skill or concept. Peer tutors often receive minimal training or guidance by the teacher.

**pegboard test** a test of manual dexterity and fine motor speed in which the participant—first with the dominant hand, then with the nondominant hand, and finally with both hands—inserts pegs in a series of holes as rapidly as possible. One of the best known examples is the **Purdue Pegboard Test** (developed at Purdue University, West Lafayette, Indiana).

**peg-word mnemonic system** a MNEMONIC strategy used to remember lists, whereby each item is associated in imagination with a number–word pair (the **peg**). For example, if the pegs are the rhyming pairs “one is a bun, two is a shoe,” the first item to be remembered would be associated with a bun, the second with a shoe.

**Pelizaesus–Merzbacher disease** a rare, progressive degenerative disorder of the central nervous system marked by involuntary, rapid eye movements (see NYSTAGMUS), muscular incoordination (see ATAXIA), and spasticity. It is caused by a mutation in the gene that controls the production of a specific MYELIN protein. Severity and onset vary widely, depending on the type of mutation, and extend from the mild, adult-onset, spastic paraplegia form to the severe form with onset at infancy and death in early childhood. [Friedrich **Pelizaesus** (1850–1917), German neurologist; Ludwig **Merzbacher** (1875–1942), German physician]

**pellagra** *n.* deficiency of the B vitamin NICOTINIC ACID (niacin), marked by weakness, gastrointestinal disturbances, skin disorders, and neurological symptoms, such as apathy, confusion, disorientation, and neuritis. Also called **nicotinic acid deficiency**.

**pemoline** *n.* a nonamphetamine CNS STIMULANT used for the management of attention-deficit/hyperactivity disorder. Its effects resemble those of the AMPHETAMINES and METHYLPHENIDATE, and its mechanism of action includes blockade of dopamine reuptake. Pemoline has been associated with rare but occasionally fatal liver failure and with the development of Tourette's disorder. Safety concerns led to its withdrawal from the Canadian market in 1999 and the U.S. market in 2005. Former U.S. trade name (among others): **Cylert**.

**PEN** acronym for psychoticism, extraversion, neuroticism. See EYSENCK'S DIMENSIONS.

**penalty function** a WEIGHT applied to a statistic or index that lowers its value because of some undesired characteristic. In STRUCTURAL EQUATION MODELING, for example, several indices used to assess GOODNESS OF FIT include such a mechanism to downweight the index when a researcher's model exhibits a high level of complexity.

**pendular knee jerk** an abnormal PATELLAR REFLEX observed in patients with a lesion of the cerebellum, in which the leg continues to move several times after the initial reflex.

**pendulum problem** a PIAGETIAN TASK used to assess cognitive development. The participant is asked to work out what governs the speed of an object swinging on a piece of string. The ability to systematically examine the variables (length, weight, force of drop, height of drop) generally appears in early adolescence and is evidence of HYPOTHETICO-DEDUCTIVE REASONING, which marks the FORMAL OPERATIONAL STAGE of development.

**penetrance** *n.* in genetics, the extent to which the effects of an ALLELE are manifest in the individuals possessing it, expressed as the fraction or percentage of individuals carrying that allele who manifest the trait associated with it. If all persons who possess a particular dominant allele develop the associated trait, the allele is said to show complete penetrance (100%). In contrast, incomplete penetrance occurs when some individuals with a particular allele do not develop the associated trait.

**penetrating head injury** see OPEN HEAD INJURY.

**penetration** *n.* the entry of the penis into the vagina. In the United States, legal definitions in cases of rape or illicit intercourse vary from state to state, but penetration is generally considered to have occurred if the glans penis passes beyond the labia majora. In some states, if penetration has not occurred during sexual assault, there cannot be a charge of rape. In such cases, the crime is some variety of felonious sexual assault, which usually has lower penalties than rape.

**penile plethysmograph** see PLETHYSMOGRAPHY.

**penile prosthesis** an implanted device that is used to restore male sexual potency. Such devices typically are made of malleable material or are inflatable, and their insertion requires surgery.

**penis** *n.* the male organ for urination and for INTROMISSION, during which it enters the female's vagina to deliver semen. The urethra runs through the penis, which is composed largely of erectile tissue (see CORPUS CAVERNOSUM; CORPUS SPONGIOSUM) and has a mushroom-shaped cap (GLANS PENIS). —**penile** *adj.*

**penis envy** in the classical psychoanalytic theory of Sigmund FREUD, the hypothesized desire of girls and women to possess the male genital organ. Freud believed that it originated in the PHALLIC STAGE, between ages 3 and 6, when the girl discovers that she lacks this organ, and he further posited that the girl feels “handicapped and ill-treated,” blames her mother for the loss, and wants to have her penis back. Karen D. HORNEY, among others, later argued that penis envy is not an envy of the biological organ itself but represents women's envy of men's superior social status. In any sense, the concept has been actively disputed from the beginning and is rarely considered seriously in current psychology. See also CASTRATION COMPLEX.

**Pennhurst Consent Decree** a judicial decree ordering the closure of the Pennhurst State School and Hospital in Philadelphia, Pennsylvania, and the movement of its residents with intellectual disability to least restrictive environments within the community. The decree further ordered team planning for individual movement to the community, provision of case management, and establishment of individual habilitation plans. The decree was based on the court's determination that conditions at the facility were dangerous to the well-being of residents and violated the due process and equal protection clauses of the U.S. Constitution and other federal and state legislation. The

Pennhurst facility closed in 1987. See also YOUNGBERG V. ROMEO.

**penology** *n.* **1.** the scientific study of the management of correctional facilities and the rehabilitation of criminals. **2.** in older writings, the branch of CRIMINOLOGY concerned with the theory and practice of the punishment of crime.

**Penrose staircase** see STAIRCASE ILLUSION. [Lionel S. Penrose (1898–1972), British geneticist and mathematician, and Roger Penrose (1931– ), British physicist]

**Penrose triangle** a three-dimensional IMPOSSIBLE FIGURE composed of three bars, each at 90° to the adjacent bar, that appear to make a twisted triangle. The figure is more accurately called a **tribar**, since true triangles have three angles that add up to 180° rather than the 270° of the Penrose triangle. [Roger Penrose]

**pentazocine** *n.* see OPIOID ANTAGONIST.

**pentobarbital** *n.* a short- to intermediate-acting BARBITURATE formerly in common use as a sedative and hypnotic drug. At one time, it was also used in psychotherapy to make clients less inhibited and therefore able to express themselves more effectively, but this practice was subsequently discredited. Pentobarbital is still used in the induction of anesthesia and very rarely in the treatment of a specific epileptic condition, but it has no mental health applications today. Like all barbiturates, it has been supplanted by safer agents, such as the benzodiazepines. U.S. trade name: **Nembutal**.

**Pentothal** *n.* a trade name for THIOPENTAL.

**people-first language** syntactical rules recommended for describing individuals who have a disability: that is, the arrangement of words in a sentence so that it identifies the individuals first and their disability second and describes what they have rather than equating them with their disability. Examples of the use of such language include “a child with a learning disability” (rather than “a learning-disabled child”), “a child with Down syndrome” (rather than “a Down child”), and “a person who uses a wheelchair” (rather than “a wheelchair-bound person”).

**pepsinogen** *n.* the precursor of **pepsin**, a proteolytic enzyme necessary for the breakdown of proteins. It is secreted by the gastric glands of the stomach and is converted to pepsin in the presence of gastric acid, also secreted by glands of the stomach.

**peptic ulcer** see ULCER.

**peptide** *n.* a short chain of AMINO ACIDS linked by **peptide bonds**. Peptides are usually identified by the number of amino acids in the chain. For example, dipeptides have two amino acids, tripeptides three, tetrapeptides four, and so on. See also POLYPEPTIDE; PROTEIN.

**peptide hormone** any hormone that is classed chemically as a peptide. Peptide hormones include CORTICOTROPIN-RELEASING FACTOR, CORTICOTROPIN, OXYTOCIN, VASOPRESSIN, and CHOLECYSTOKININ.

**perceive** *vb.* **1.** to be conscious of or recognize through the senses. See PERCEPTION. **2.** to understand or grasp the meaning of something.

**perceived behavioral control** the extent to which a person believes a behavior is under his or her active control. See THEORY OF PLANNED BEHAVIOR.

**perceived competence** an individual's belief in his or her ability to learn and execute skills.

**Perceived Fraudulence Scale (PFS)** see IMPOSTOR PHENOMENON.

**perceived reality** a person's subjective experience of reality, in contrast to objective, external reality.

**perceived risk** see RISK PERCEPTION.

**perceived self** the subjective appraisal of personal qualities that one ascribes to oneself.

**perceived self-efficacy** see SELF-EFFICACY.

**perceived simultaneity** the integration of stimuli into a single, conscious percept despite discrepancies in their actual time of arrival, so that they are perceived as occurring simultaneously.

**perceived susceptibility** a subjective estimate of the likelihood of personally contracting a disease. Also called **perceived vulnerability**.

**percentage reinforcement** in operant conditioning, a procedure in which a fixed percentage of scheduled reinforcers is omitted.

**percentile** *n.* the location of a score in a distribution expressed as the percentage of cases in the data set with scores equal to or below the score in question. Thus, if a score is said to be in the 90th percentile, this means that 90% of the scores in the distribution are equal to or lower than that score.

**percentile reinforcement** in operant conditioning, a procedure in which the likelihood that a response will be reinforced depends on the response exceeding (or being less than) a value based on a distribution from previous responses. Usually, the distribution is based on some set of the most recent responses, and it is updated with each response. For example, the current response might be eligible for reinforcement if its peak force falls above the 90th percentile of the distribution of forces from the previous 50 responses. The most recent force then replaces the earliest one in the distribution so that the distribution remains based on 50 entries.

**percept** *n.* the product of PERCEPTION: the stimulus object or event as experienced by the individual.

**perception** *n.* the process or result of becoming aware of objects, relationships, and events by means of the senses, which includes such activities as recognizing, observing, and discriminating. These activities enable organisms to organize and interpret the stimuli received into meaningful knowledge and to act in a coordinated manner.

**perception deafness** the inability to analyze or perceive sounds normally, due to some impairment of the inner ear or auditory nerve pathways leading to the brain.

**perception of spatial relations** an awareness of the static or dynamic spatial properties of an object, such as its extent or shape, and the relative location and orientation of stationary or moving objects in space.

**perceptive** *adj.* describing an individual who is sensitive and discriminating, especially in the judgment of people, works of art, and so forth. —**perceptiveness** or **perceptivity** *n.*

**perceptron** *n.* a connected network of input and output nodes that acts as a useful model of associative NEURAL NETWORKS. A simple (single-layer) perceptron might stand for two connected neurons, whereas more complicated perceptrons have additional hidden layers between input and

output. The connections between the inputs and outputs can be weighted to model the desired output. The goal is to develop a theoretical understanding of the way neural connections process signals and form associations (memories). **Back-propagation (backprop) algorithms** describe the most common process by which the weightings between input and output are adjusted. The output is compared to a desired endpoint, and changes needed in the strengths of the connections are transmitted back through the perceptron.

**perceptual** *adj.* relating to the awareness of sensory stimuli.

**perceptual aftereffect** see **AFTEREFFECT**.

**perceptual anchoring** **1.** the process in which the qualities of a stimulus are perceived relative to another, reference stimulus. **2.** see **SYMBOL GROUNDING**.

**perceptual classification** in classification tasks, the grouping of items on the basis of their perceptual characteristics. Compare **COMPLEMENTARY CLASSIFICATION**; **CONCEPTUAL CLASSIFICATION**; **IDIOSYNCRATIC CLASSIFICATION**.

**perceptual closure** the process by which an incomplete stimulus (e.g., a drawing of a circle with a segment missing) is perceived to be complete (e.g., an entire circle).

**perceptual constancy** the phenomenon in which an object or its properties (e.g., size, shape, color) appear unchanged despite variations in the stimulus itself or in the external conditions of observation, such as object orientation or level of illumination. Examples of perceptual constancy include **BRIGHTNESS CONSTANCY**, **COLOR CONSTANCY**, **SHAPE CONSTANCY**, and **SIZE CONSTANCY**.

**perceptual cues** **1.** features of a stimulus that are perceived and used by an organism in a particular situation or setting to identify and make judgments about that stimulus and its properties. **2.** features of a situation that indicate the expected behavior. See **DEMAND CHARACTERISTICS**.

**perceptual cycle hypothesis** the theory that cognition affects perceptual exploration but is in turn modified by real-world experience, creating a cycle of cognition, attention, perception, and the real world in which each influences the others. Thus, sensory experience is neither totally internal nor totally external. [proposed in 1976 by Ulric NEISSER]

**perceptual defense** in psychoanalytic theory, a misperception that occurs when anxiety-arousing stimuli are unconsciously distorted. If taboo words are rapidly presented, they may be misinterpreted; for example, if the stimulus word *anal* is presented, individuals may report seeing the innocuous *canal*.

**perceptual deficit** an impaired ability to organize and interpret sensory experience, causing difficulty in observing, recognizing, and understanding people, situations, words, numbers, concepts, or images. Also called **perceptual defect**.

**perceptual development** the acquisition of skills that enable a person to organize sensory stimuli into meaningful entities during the course of physical and psychological development.

**perceptual distortion** skewed perceptual experience. Examples include the distorted images produced by dreams or hallucinogenic drugs, geometric illusions (e.g., the **MÜLLER-LYER ILLUSION**), visions occurring in states of sensory deprivation or dehydration, and distortions produced by

modifying auditory stimuli. Perceptual distortion may also occur as a consequence of acquired brain injury. See also **METAMORPHOPSIA**.

**perceptual disturbance** a disorder of perception, such as (a) recognizing letters but not words, (b) inability to judge size or direction, (c) confusing background with foreground, (d) inability to filter out irrelevant sounds or sights, (e) a body-image distortion, or (f) difficulty with spatial relationships (e.g., misperceiving the difference between a straight line and a curved line). Also called **perceptual disorder**.

**perceptual expansion** **1.** the development of the ability to recognize, interpret, and organize intellectual, emotional, and sensory data in a meaningful way. **2.** the enriched understanding of experience that takes place in psychotherapy when greater **INSIGHT** is achieved through the therapeutic process and dynamic.

**perceptual extinction** an effect of lesions in the parieto-occipital region of the brain in which a stimulus, usually tactual or visual, is not detected. If a single stimulus is presented on either side of the midline, it is detected; however, when two stimuli are presented at the same time, one on each side of the midline, the stimulus on the side of the body opposite the location of the lesion is not detected. This phenomenon is utilized in neuropsychological research on attention mechanisms. Also called **sensory extinction**; **sensory inattention**.

**perceptual field** in **GESTALT PSYCHOLOGY**, the totality of the environment that an individual perceives at a particular time; that is, all of the aspects of the environment of which the person is aware at a given time.

**perceptual filtering** the process of focusing attention on a selected subset of the large number of stimuli that are present at any one time. Perceptual filtering is necessary because the cognitive and physical capacity of an individual to process and respond to multiple sources of information is limited. See also **BOTTLENECK MODEL**.

**perceptual fluency** the ease with which a visual target is processed. The **perceptual fluency theory** of **VISUAL ATTENTION** holds that the repeated presentation of a given target between presentations of distractors in successive trials increases the perceptual fluency for that target, thus making it easier to distinguish from the distractors.

**perceptualization** *n.* in schizophrenia, the transformation of abstract concepts into specific perceptions. For example, an individual who thinks poorly of himself or herself may later experience hallucinations that bad odors are emanating from his or her body; the rotten personality becomes the rotten body that smells. Perceptualization is the most advanced level of **ACTIVE CONCRETIZATION**. [defined by Italian-born U.S. psychiatrist Silvano Arieti (1914–1982)]

**perceptual learning** learning to perceive the relationships between stimuli and objects in the environment or the differences among stimuli.

**perceptual maintenance** in environmental design, the construction of an environment to facilitate sensory functions (e.g., seeing, hearing) and to provide an appropriate level of perceptual stimulation for the activity carried out (e.g., the lighting and soundproofing of a recording studio).

**perceptual masking** see **MASKING**.

**perceptual measure** any test to evaluate sensory responses to stimuli. Examples include the STROOP COLOR–WORD INTERFERENCE TEST and the ROD-AND-FRAME TEST.

**perceptual–motor coordination** the use of perceptually derived information (e.g., from vision, touch) in the control of ongoing movements.

**perceptual–motor learning** the learning of a skill that requires linking the perceptual discrimination of important stimuli with appropriate motor responses (e.g., hitting a ball, driving an automobile).

**perceptual–motor match** the ability to correlate perceptual data with a previously learned set of motor responses. An individual with brain damage may have to touch everything he or she sees because of an inability to make the perceptual–motor match automatically.

**perceptual neglect** see SENSORY NEGLECT.

**perceptual organization** the process by which the elements of visual and other sensory information are structured into a coherent whole. According to traditional GESTALT PSYCHOLOGY, the parts of a group are organized to form whole figures that constitute more than the parts separately (see GESTALT PRINCIPLES OF ORGANIZATION). Later research more precisely defined the properties that enable such organized tasks. Artists have traditionally used the principles of perceptual organization to create desired moods or feelings and to challenge viewers' expectations.

**perceptual organizational deficit** a phenomenon in which a subset of people with schizophrenia have particular difficulty visually integrating the parts of an object and seeing them as an ensemble. For example, if looking at a watch, they will perceive the hands, the dial, and the numbers as separate forms but will have difficulty processing the watch face as a whole. [coined by U.S. psychologist Steven M. Silverstein (1962– )]

**perceptual representation system (PRS)** a MEMORY SYSTEM whose function is to identify objects and words, allowing quick recognition of previously encountered stimuli. Perceptions are specifically recognized in the form previously experienced (e.g., a word as seen vs. a word as heard). The PRS does not recognize the meaning of stimuli, which is handled by SEMANTIC MEMORY.

**perceptual restructuring** the process of modifying a perception to accommodate new information.

**perceptual rivalry** the incompatibility of different perceptions of the same object. When an AMBIGUOUS FIGURE that allows two different perceptual interpretations is viewed, only one perceptual diagnosis can be made at any one time, so that perception alternates between the two rival interpretations. This switching between percepts is primarily involuntary.

**perceptual schema** a mental model that provides a FRAME for interpreting information entering the mind through the senses or for activating an expectation of how a particular perceptual scene may look. See SCHEMA.

**perceptual segregation** the separation of one part of a PERCEPTUAL FIELD from the whole by physical boundaries or attention-diverting methods. See FIGURE–GROUND.

**perceptual sensitization** the lowering of an individual's sensory thresholds for events that are emotionally sensitive or threatening.

**perceptual set** **1.** a temporary readiness to perceive cer-

tain objects or events rather than others. For example, a person driving a car has a perceptual set to identify anything in the car or on the road that might affect his or her safety. See SELECTIVE PERCEPTION. **2.** a SCHEMA or FRAME that influences the way in which a person perceives objects, events, or people. For example, an on-duty police officer and a painter might regard a crowded street scene with very different perceptual sets.

**perceptual speed** see PRIMARY ABILITY.

**perceptual style** the characteristic way in which an individual attends to, selects, alters, and interprets sensory stimuli.

**perceptual synthesis** **1.** the integration of experience from all the senses to establish knowledge of the external world and one's interactions with it and to eliminate unessential information about both. **2.** in auditory perception, a phenomenon in which people perceive missing sounds or faint sounds when the gap created by them is filled with white noise.

**perceptual test** a memory test that involves processing the surface features of a stimulus. Perceptual tests can be used to measure implicit memory, as in WORD-STEM COMPLETION in which participants are given sets of introductory letters and asked to form complete words using the first words that come to mind. Such tests can also be used to measure explicit memory, as in the **graphemic cued-recall test** in which participants are given cues that are similar in physical appearance to the target item but differ in meaning (e.g., *fickle* as a cue for *freckle*). Compare CONCEPTUAL TEST.

**perceptual training** a method of enhancing an individual's ability to interpret perceived objects or events in concrete terms. For example, the ability of a child to recognize letters of the alphabet may be enhanced when he or she traces the outlines of the letters.

**perceptual transformation** **1.** any modification in a percept produced by (a) an addition to, deletion from, or alteration in a physical stimulus or (b) a novel interpretation of the stimulus, a change in a SET or attitude, or a sudden insight concerning the material. **2.** a change in the way a problem, event, or person is perceived by the inclusion of new information or a different perspective.

**perceptual user interface** an interface that enables a computer system to "perceive," interpret, and respond appropriately to the facial expressions, speech, gestures or movements, and other perceptually based patterns of communication typical of users. The intent is to provide realistic, interactive encounters similar to those experienced among people in the real world. Compare GRAPHICAL USER INTERFACE; TANGIBLE USER INTERFACE.

**percipient** **1.** *adj.* capable of perception. **2.** *n.* in parapsychology, the alleged recipient of telepathic communications or other extrasensory impressions. Compare AGENT. See also RECEIVER.

**per-comparison error rate** see TESTWISE ERROR RATE.

**percutaneous umbilical cord blood sampling (PUBS)** a method of diagnosing chromosomal abnormalities, blood disorders, or infection in a fetus. A fine needle is inserted through the mother's abdominal wall into the uterus, enabling the collection of fetal blood directly from the umbilical cord for analysis. Because the procedure carries a higher risk of causing a miscarriage than other prenatal tests, it is performed only in high-risk pregnancies

when the results from AMNIOCENTESIS or CHORIONIC VILLUS SAMPLING are inconclusive or when results are needed very rapidly, with some PUBS results available in as few as 2 hours. Also called **cordocentesis**.

**perdida del alma** see SUSTO.

**peregrination** *n.* excessive traveling from place to place. Peregrination is one of the essential features of MÜNCHHAUSEN SYNDROME: The individual feels impelled to travel from town to town or from hospital to hospital in order to find a new audience every time the false nature of the illness is discovered. Also called **itinerancy**.

**peremptory challenge** a request made to the judge during VOIR DIRE that a prospective juror be replaced without indicating a specific reason. In criminal trials, each side is allowed a particular number of peremptory challenges. Compare CHALLENGE FOR CAUSE.

**perfect correlation** a relationship between two variables,  $x$  and  $y$ , in which the change in value of one variable is exactly proportional to the change in value of the other. That is, knowing the value of one variable exactly predicts the value of the other variable (i.e.,  $r_{xy} = 1.0$ ). When graphed, a perfect correlation forms a perfectly straight line. If the variables change in the same direction (i.e., they both increase or both decrease), the correlation is **perfect positive**, whereas if the variables change in opposite directions (i.e., one increases as the other decreases or vice versa), the correlation is **perfect negative**. It is uncommon to observe this type of relationship in actual data. See also CORRELATION COEFFICIENT.

**perfectionism** *n.* the tendency to demand of others or of oneself an extremely high or even flawless level of performance, in excess of what is required by the situation. It is associated with depression, anxiety, eating disorders, and other mental health problems. —**perfectionist** *adj.*, *n.*

**perfect pitch** see ABSOLUTE PITCH.

**perforant path** the route of axons that perforate the SUBICULUM to provide the main inputs to the HIPPOCAMPUS.

**performance** *n.* **1.** any activity or collection of responses that leads to a result or has an effect on the environment. **2.** the behavior of an organism (the **performer**) when faced with a specific task. **3.** in linguistics, see COMPETENCE.

**performance anxiety** apprehension and fear of the consequences of being unable to perform a task or of performing it at a level that will raise expectations of even better task achievement. TEST ANXIETY is a common example of performance anxiety. Other examples include fear of public speaking, participating in classes or meetings, playing a musical instrument in public, and eating in public. If the fear associated with performance anxiety is focused on negative evaluation by others, embarrassment, or humiliation, the anxiety may be classified as a SOCIAL PHOBIA.

**performance appraisal** see PERFORMANCE REVIEW.

**performance assessment** **1.** see PERFORMANCE REVIEW. **2.** an appraisal of growth or deterioration in learning, memory, or both during performance on ability and achievement tests.

**performance contract** a formal agreement between an employer and an employee regarding the work outcomes expected of the employee and the compensation and other rewards provided for these outcomes.

**performance enhancement** the act or process of increasing one's level of achievement at a task or activity by building one's physical and mental capacity or endurance for it through exercise, positive SELF-TALK, the use of IMAGERY, and other means. See PERFORMANCE ENHANCING DRUG.

**performance enhancing drug** a substance taken inappropriately or illegally (i.e., without a prescription) to build muscle, boost stamina, and increase speed for the purpose of achieving a heightened level of performance in competitive sports or to improve concentration for the purpose of achieving better performance in activities requiring sustained attention (e.g., studying, taking tests, conducting research, long-haul truck driving). The substances most often identified as performance enhancing drugs are ANABOLIC-ANDROGENIC STEROIDS (for enhanced physical functioning) and stimulant medications such as Adderall and Ritalin (for enhanced mental functioning), the latter used off-label from their prescribed purpose in treating attention-deficit/hyperactivity disorder and narcolepsy. Anabolic-androgenic steroids and similar substances are specifically called **appearance and performance enhancing drugs** when used to improve one's BODY IMAGE or fitness or to alter one's appearance in order to succeed in professions where performance is based on appearance (e.g., bouncers). Also called **performance enhancement drug**.

**performance evaluation** **1.** see PERFORMANCE REVIEW. **2.** generally, any process of comparing the expected, planned, or ideal level of accomplishment or outcome for a particular activity or goal with the actual level of accomplishment or outcome.

**performance goal** **1.** in the motivational theory of U.S. personality psychologist Carol S. Dweck (1946– ), the goal of demonstrating to others who may be evaluating one's performance that one possesses a particular ability or other attribute. This is in contrast to a LEARNING GOAL, in which one aims to develop an ability or attribute. **2.** a goal that is set in terms of a specific level of achievement, such as running a mile in 5 minutes 30 seconds. See also GOAL SETTING.

**performance imagery** **1.** the use of IMAGERY to cognitively recreate all the sensations of a performance. See MENTAL REHEARSAL. **2.** the use of imagery during a performance as a cue to tell the body what to do, such as imaging an explosion under the foot at the moment of takeoff for a high jump.

**performance intensity** see INTENSITY.

**performance IQ** see IQ.

**performance management** a system for improving individual, work team, and organizational results. It relies on a continuous process that provides formal goal setting, timely and structured feedback, regular PERFORMANCE REVIEW, and opportunities for employee development and training. [developed in the 1970s by U.S. clinical psychologist Aubrey C. Daniels (1935– )]

**performance-operating characteristic (POC)** the measure of performance on one task plotted against the measure of simultaneous performance on a second task. The POC shows how improvements in performance on one of the tasks might trade with performance decrements in the other task.

**performance review** a formal appraisal of an employee's job performance, typically conducted by his or her su-

pervisor at least once a year. The review may be in the form of a quantitative rating or a more subjective appraisal and usually involves feedback to the employee. Also called **performance appraisal**; **performance assessment**; **performance evaluation**. See also EMPLOYEE EVALUATION; EVALUATION INTERVIEW; JOB CRITERION.

**performance routine** a predetermined set of physical and mental behaviors followed during a performance that allows an individual (e.g., an actor, a musician, an athlete) to maintain focus, energy levels, confidence, and control.

**performance test** any test of ability requiring primarily motor, rather than verbal, responses, such as a test requiring manipulation of different objects or completion of a task that involves physical movement.

**performative** *adj.* denoting an utterance whose very delivery accomplishes the stated intention of the speaker, as in *I apologize*, *I promise*, and *I declare this mall open*. The nature of performative SPEECH ACTS received much attention in 20th-century linguistic philosophy. See also ILLOCUTIONARY ACT.

**peri-** *prefix* **1.** around or enclosing. **2.** near.

**Periactin** *n.* a trade name for CYPROHEPTADINE.

**periamygdaloid cortex** an ill-defined region surrounding the AMYGDALA of the brain that is associated with the sense of smell. The proportion of the brain that it occupies in a particular species seems to depend on the importance of the sense of smell for survival: the greater the importance, the larger the proportion. Dogs, for example, have a larger proportion of olfactory nerve tissue than do human beings. See also PYRIFORM AREA.

**periaqueductal gray (PAG)** a region of the brainstem, rich in nerve cell bodies (i.e., gray matter), that surrounds the CEREBRAL AQUEDUCT. A component of the LIMBIC SYSTEM, it plays an important role in organizing defensive behaviors (e.g., freezing). Also called **central gray**.

**perikaryon** *n.* see CELL BODY.

**perilymph** *n.* the fluid that fills the space between the membranous LABYRINTH and the walls of the bony labyrinth in the inner ear. —**perilymphatic** *adj.*

**perimenopause** *n.* see CLIMACTERIC. —**perimenopausal** *adj.*

**perimeter** *n.* a hemispherical instrument used to plot the limits of the visual field. An individual is seated within the hemisphere and is asked to fixate a central spot of light. The visual field is then probed with small flashes of light, which the participant is asked to detect. The size and brightness of the flashes can be varied to assess visual sensitivity at many points within the field.

**perimetry** *n.* the measurement of the extent of the visual field. See PERIMETER.

**perinatal herpes-virus infection** a herpes simplex Type 2 infection that is transmitted from a pregnant woman to her fetus. The fetal infection may develop into a severe blood disorder and can also result in a fatal form of encephalitis. The complication is most likely to develop in late pregnancy. See HERPES INFECTION.

**period** *n.* **1.** the interval of time between the same point in successive cycles, such as sunset to sunset. **2.** see FREQUENCY. **3.** see MENSTRUATION.

**period effect** any outcome associated with living during

a particular time period or era, regardless of how old one was at the time. Certain historical events, such as war, the introduction of social media, or the events occurring on September 11, 2001, may affect responses of participants in research studies. Period effects may be difficult to distinguish from AGE EFFECTS and COHORT EFFECTS in research.

**periodicity** *n.* the state of recurring more or less regularly (i.e., at intervals). Phenomena that exhibit periodicity include the cycle of the seasons, human circadian rhythms, and consumer spending.

**periodicity pitch** see VIRTUAL PITCH.

**periodicity theory** the theory that pitch is encoded in the temporal structure of the neural responses to sounds, specifically in the timing of neural discharges ("spikes"). For periodic sounds, the discharges of auditory nerve fibers tend to occur at integer multiples of the period of the sound. See PHASE LOCKING. Compare PLACE THEORY.

**periodic reinforcement** see FIXED-INTERVAL SCHEDULE.

**period prevalence** see PREVALENCE.

**peripheral** *adj.* **1.** in the nervous system, located or taking place outside the brain and spinal cord. Compare CENTRAL. **2.** in vision, toward the margins of the visual field, rather than close to the center. The onset of a peripheral stimulus tends to draw attention to that location. **3.** situated on the surface of a body. **4.** situated away from a center and toward the outside edge. **5.** incidental or superficial.

**peripheral anticholinergic syndrome** see ANTI-CHOLINERGIC SYNDROME.

**peripheral auditory system** see AUDITORY SYSTEM.

**peripheral cue** a factor that is external to the merits of an argument and that can be used to provide a relatively low-effort basis for determining whether an ATTITUDE OBJECT should be positively or negatively evaluated. See also ELABORATION-LIKELIHOOD MODEL; PERIPHERAL ROUTE TO PERSUASION.

**peripheral dysarthria** see DYSARTHRIA.

**peripheral dyslexia** see VISUAL WORD-FORM DYSLEXIA.

**peripheral dysostosis with nasal hypoplasia** a congenital abnormality characterized by short, wide hands and feet and a short, flat nose with nostrils bent forward. Most affected individuals show some degree of intellectual disability and learning difficulties. Because of foot anomalies, learning to walk may be delayed. Also called **acro-dysostosis**.

**peripheralism** *n.* the view of some behaviorists that emphasizes events at the periphery of an organism, such as the skeletal and laryngeal muscles and sex organs, rather than the functions of the central nervous system. For example, John B. WATSON believed (falsely) that thinking was not a function taking place in the brain but involved minute movements of the vocal apparatus (SUBVOCAL SPEECH) and thus was an objective behavior. Also called **peripheralistic psychology**. Compare CENTRALISM.

**peripheral nerve fiber classification** the classification of peripheral nerve fibers (axons) according to their diameters, speeds of conduction, and locations. They fall into three main classes. A FIBERS vary from 1 to 20  $\mu\text{m}$  in diameter; they are MYELINATED FIBERS and conduct rapidly. B FIBERS occur in the preganglionic AUTONOMIC NERVOUS SYSTEM; they are myelinated but of relatively small diame-



ter, and they conduct more slowly than A fibers. C FIBERS vary from 0.2 to 1.5  $\mu\text{m}$  in diameter; they are unmyelinated and conduct slowly. See also VELOCITY OF CONDUCTION.

**peripheral nervous system (PNS)** the portion of the nervous system that lies outside the brain and spinal cord—that is, all parts outside the CENTRAL NERVOUS SYSTEM. Afferent fibers of the PNS bring messages from the sense organs to the central nervous system; efferent fibers transmit messages from the central nervous system to the muscles and glands. The PNS includes the CRANIAL NERVES, SPINAL NERVES, and parts of the AUTONOMIC NERVOUS SYSTEM.

**peripheral neuropathy** a neuromuscular disorder of the extremities caused by damage to the peripheral nervous system and usually characterized by weakness, numbness, clumsiness, and sensory loss. Causes are numerous and include diabetes, nutritional deficiencies, injury or trauma, and exposure to toxic substances (see ALCOHOLIC NEUROPATHY).

**peripheral route to persuasion** the process by which attitudes are formed or changed as a result of using PERIPHERAL CUES rather than carefully scrutinizing and thinking about the central merits of attitude-relevant information. See also ELABORATION; ELABORATION-LIKELIHOOD MODEL. Compare CENTRAL ROUTE TO PERSUASION.

**peripheral vision** vision provided by retinal stimulation outside the FOVEA CENTRALIS. Compare CENTRAL VISION; PARACENTRAL VISION.

**periphery** *n.* in vision, the part of the visual field outside the FOVEA CENTRALIS.

**perirhinal cortex** a structure in the MEDIAL TEMPORAL LOBE adjacent to the hippocampus that plays an important role as an interface between visual perception and memory.

**perisylvian language zone** the area of the brain that is responsible for language. It consists of the region around the LATERAL SULCUS (Sylvian fissure) of the left hemisphere and includes BROCA'S AREA and WERNICKE'S AREA. Damage to the zone causes various forms of aphasia. Also called **perisylvian area**; **perisylvian language area**.

**peritraumatic dissociation** a transient dissociative experience (see DISSOCIATION) that occurs at or around the time of a traumatic event. Affected individuals may feel as if they are watching the trauma occur to someone else, as if in a movie, or they may feel "spaced out" and disoriented after the trauma. The occurrence of peritraumatic dissociation is a predictor for the later development of POSTTRAUMATIC STRESS DISORDER.

**periventricular white matter** tissue consisting largely of myelinated nerve fibers (i.e., WHITE MATTER) that surrounds the lateral cerebral VENTRICLES.

**Perky effect** the tendency for an imagined stimulus to interfere with seeing an actual target stimulus when the imagined form is close to that of the target. In one study, for example, a participant was positioned in front of a blank screen and asked to imagine a leaf, while simultaneously, without the participant's knowledge, a blurry picture of a leaf was projected onto the screen, gradually becoming brighter; the intensity of the picture was well above the threshold for detection before the participant reported seeing it. [described in 1910 by Cheves West **Perky** (1874–1940), U.S. psychologist]

**perlocutionary act** see ILLOCUTIONARY ACT.

**permanency planning** a time-limited, goal-oriented process in which plans are developed for placing abused or neglected children in a permanent, safe, and stable home, whether with their families of origin (including nonparent relatives) or through adoption.

**permanent vegetative state** see VEGETATIVE STATE.

**permastore** *n.* long-term or permanent memory that develops after extensive learning, training, or experience. Details of foreign languages or algebra learned years ago in school, and even the names of classmates, are said to be retained in permastore. See also SEMANTIC MEMORY. [first described by Austrian-born U.S. cognitive psychologist Harry P. Bahrick (1924– )]

**permeability** *n.* the state of being permeable to gases, liquids, or dissolved substances, such as by having fine pores through which substances can pass. A perfect membrane has no permeability, but most biological membranes are selectively permeable (or semipermeable), permitting the passage of certain substances (e.g., nutrients into a cell). See also OSMOTIC PRESSURE. —**permeable** *adj.*

**permeable family** a more fluid and flexible version of the NUCLEAR FAMILY that some sociologists regard as an emerging norm in contemporary Western society. The permeable family differs from the stereotypical nuclear family in five main areas: It is characterized by (a) a greater variety of family structures produced by divorce, remarriage, and the acceptance of COHABITATION and single-parent families; (b) a looser sense of family boundaries, so that the offspring of former relationships may be regarded as part of the family unit for some purposes but not for others (see BOUNDARY AMBIGUITY); (c) the erosion of traditional sex roles within the family as a result of FEMINISM and the greater role played by women in the workforce; (d) the erosion of a sense of hierarchy and deference within the family, so that children and teenagers expect greater freedom and respect for their views and preferences; and (e) the tendency for all members of the family to expect greater autonomy, so that individual activities sometimes take precedence over shared pursuits and rituals (e.g., family meals). See also STEPFAMILY.

**permissible exposure level** the point at which an employer must use ENGINEERING CONTROLS or ADMINISTRATIVE CONTROLS to reduce employees' exposure to certain hazards, such as noise. See NOISE DOSE.

**permission schema** see PRAGMATIC REASONING SCHEMA THEORY.

**permissiveness** *n.* an interpersonal style or approach that involves giving a wide range of freedom and autonomy to those with whom one has dealings or over whom one has authority. For example, it refers to a particular parenting style in which the child is given wide latitude in expressing his or her feelings and opinions and in which artificial restrictions and punishment are avoided as much as possible. —**permissive** *adj.*

**permissive parenting** see PARENTING.

**permutation** *n.* an ordered arrangement of elements from a set. A permutation is similar to a COMBINATION but distinguished by its emphasis on order. For example, if there are three colored objects—red (R), white (W), and blue (B)—there are six possible permutations of these objects: RWB, RBW, WBR, WRB, BRW, and BWR.

**permutation test** see RANDOMIZATION TEST.

**peroneal muscular atrophy** see CHARCOT–MARIE–TOOTH DISEASE.

**perphenazine** *n.* a conventional ANTIPSYCHOTIC agent of the piperazine PHENOTHIAZINE class. It is used for the treatment of schizophrenia, and its efficacy and side effects are similar to those of other phenothiazines. As with all phenothiazines, long-term use may be associated with the production of TARDIVE DYSKINESIA or other neuromuscular deficits. U.S. trade name: **Trilafon**.

**persecution delusional disorder** a type of DELUSIONAL DISORDER in which the central delusion is persecutory (e.g., that one is being plotted against).

**persecutory delusion** see DELUSION OF PERSECUTION.

**per se exclusion rule** see STATE V. MACK.

**perseverance** *n.* see PERSISTENCE.

**perseverance effect** the phenomenon in which people's beliefs about themselves and others persist despite a lack of supporting evidence or even a contradiction of supporting evidence.

**perseveration** *n.* **1.** in general, persistence in doing something to an exceptional level or beyond an appropriate point. **2.** in neuropsychology, the inappropriate repetition of behavior that is often associated with damage to the FRONTAL LOBE of the brain. **3.** an inability to interrupt a task or to shift from one strategy or procedure to another. Perseveration may be observed, for example, in workers under extreme task demands or environmental conditions (mainly HEAT STRESS). **4.** according to the PERSEVERATION–CONSOLIDATION HYPOTHESIS, the repetition, after a learning experience, of neural processes that are responsible for memory formation, which is necessary for the consolidation of LONG-TERM MEMORY. **5.** in speech and language, the abnormal or inappropriate repetition of a sound, word, or phrase, as occurs in stuttering. **6.** the persistence or prolongation of a speech mode beyond the particular developmental stage at which it is typical or accepted, such as baby talk continuing into later childhood or adulthood. —**perseverate** *vb.*

**perseveration–consolidation hypothesis** the hypothesis that information passes through two stages in memory formation. During the first stage, the memory is held by perseveration (repetition) of neural activity and is easily disrupted. During the second stage, the memory becomes fixed, or consolidated, and is no longer easily disrupted. The perseveration–consolidation hypothesis guides much contemporary research on the biological basis of long-term learning and memory. Also called **consolidation hypothesis; consolidation–perseveration hypothesis**. See also DUAL TRACE HYPOTHESIS. [originally proposed in 1900 by German psychologists Georg Elias MÜLLER and Alfons Pilzecker (1865–1949)]

**perseverative error** the continuing recurrence of an error, such as continuing to call a square a circle even after feedback that the name is wrong, or repeating the same answer to a series of different questions.

**persistence** *n.* **1.** continuance or repetition of a particular behavior, process, or activity despite cessation of the initiating stimulus. **2.** the quality or state of maintaining a course of action or keeping at a task and finishing it despite the obstacles (such as opposition or discouragement) or the effort involved. Also called **perseverance**. See CLON-

INGER'S PSYCHOBIOLOGICAL MODEL OF PERSONALITY; TEMPERAMENT AND CHARACTER INVENTORY. **3.** continuance of existence, especially for longer than is usual or expected. —**persistent** *adj.*

**persistence of an attitude** the extent to which an attitude is stable over time and remains constant in the absence of a direct challenge. See also ATTITUDE STRENGTH.

**persistence of vision** see VISUAL PERSISTENCE.

**persistent complex bereavement disorder** in DSM–5, a proposed diagnosis labeled “for further study” and based on a combination of symptoms, such as preoccupation with the deceased, marked difficulty accepting the death of a loved one, a desire to die to be with the deceased, difficulty trusting other individuals since the death, and clinically significant distress or impairment; for this diagnosis, at least 12 months (adults) or 6 months (children) must have passed since the death.

**persistent depressive disorder** see DYSTHYMIC DISORDER.

**persistent noncognitive state** see VEGETATIVE STATE.

**persistent puberism** a condition in which secondary sexual characteristics become arrested in development and individuals remain, in effect, pubescent for the duration of their lives.

**persistent vegetative state (PVS)** see VEGETATIVE STATE.

**persona** *n.* in the ANALYTIC PSYCHOLOGY of Carl JUNG, the public face an individual presents to the outside world, in contrast to more deeply rooted and authentic personality characteristics. This sense has now passed into popular usage. The term is taken from the mask worn by actors in Roman antiquity.

**personal adjustment** **1.** adaptation by an individual to conditions in his or her family and community, especially in social interactions with those with whom regular personal contact is necessary. **2.** the degree to which a person is able to cope with the demands of life.

**personal attribution** see DISPOSITIONAL ATTRIBUTION.

**personal audit** an oral or written interview or questionnaire designed to encourage individuals to assess their own personal strengths and weaknesses.

**personal-care attendant** a person hired by an individual with a disability to provide assistance with ACTIVITIES OF DAILY LIVING (e.g., dressing, eating).

**personal commitment** **1.** an individual's adherence to a cause, attitude, or belief. Personal commitment does not necessarily reflect cultural values, attitudes, or beliefs. See also POSTCONVENTIONAL LEVEL. **2.** in U.S. sociologist Michael P. Johnson's tripartite model of marital commitment, a form of commitment based on the desire to continue a relationship because it is satisfying, enjoyable, or personally rewarding. It is considered the strongest type of commitment because it is based on the individual's personal wishes and is experienced as voluntary. Compare MORAL COMMITMENT; STRUCTURAL COMMITMENT.

**personal construct** in personality theory, one of the concepts by which an individual perceives, understands, predicts, and attempts to control the world. See REPERTORY GRID. [formulated by George A. KELLY]

**personal construct therapy** a therapy based on the

concept of the PERSONAL CONSTRUCT. The essence of the approach is to help individuals test the usefulness and validity of their constructs and to revise and elaborate them as necessary to enhance their positive interpretations of and interactions with the world. [developed in the 1950s by George A. KELLY]

**personal data sheet** a questionnaire used by organizations to obtain biographical facts about current or potential employees, including their date of birth, sex, education, occupational history, interests, and health history.

**personal disjunction** an individual's feeling or perception of dissimilarity or discrepancy between what is or might be and the objective reality or likelihood.

**personal disposition** Gordon W. ALLPORT's term for a PERSONALITY TRAIT: any of a number of enduring characteristics that describe or determine an individual's behavior across a variety of situations and that are peculiar to and uniquely expressed by that individual. Personal dispositions are divided into three categories according to their degree of influence on the behavior of the person possessing them. **Cardinal dispositions** (or **cardinal traits**), such as a thirst for power, are so pervasive that they influence virtually every behavior of that person; **central dispositions** (or **central traits**), such as friendliness, are less pervasive but nonetheless generally influential and easy to identify; and **secondary dispositions** (or **secondary traits**), such as a tendency to keep a neat desk, are much more narrowly expressed and situation specific. Compare COMMON TRAIT.

**personal distance zone** the DISTANCE ZONE adopted by those interacting with friends and personal acquaintances. The personal distance zone is defined as the area 0.5 to 1.5 m (1.5 to 4 ft) from a person. Compare INTIMATE ZONE; PUBLIC DISTANCE ZONE; SOCIAL ZONE. See also PROXEMICS.

**personal documents** writings (diaries, letters, essays, etc.), recordings, and similar material produced by a person that, when examined in **personal-document analysis**, may provide insights into that person's personality, values, attitudes, beliefs, fears, and so forth.

**personal equation 1.** the difference in performance attributed to INDIVIDUAL DIFFERENCES. **2.** historically, a difference in reaction time between two observers.

**personal fable** a belief in one's uniqueness and invulnerability, which is an expression of ADOLESCENT EGOCENTRISM and may extend further into the lifespan. Also called **invincibility fable**. [first described by U.S. developmental psychologist David Elkind (1931– )]

**personal-growth group** a small group of individuals that uses "encounter" methods, such as games, confrontation, and reenactment, for self-discovery and the development of the members' potential. See also ENCOUNTER GROUP; HUMAN-POTENTIAL MOVEMENT.

**personal-growth laboratory** a SENSITIVITY TRAINING course that seeks to develop the participants' capabilities for constructive relationships, creative effort, leadership, and understanding of others. This is achieved by various methods, such as art activities, intellectual discussions, sensory stimulation, and emotional interactions.

**personal-history questionnaire** a questionnaire that records information about a person's special abilities, interests, extracurricular activities, family life, and any medical, emotional, or other problems relating to performance of activities or social adjustment.

**personal identity** see IDENTITY.

**personal involvement** see EGO INVOLVEMENT.

**personalism** *n.* **1.** the philosophical position that human personality is the sole means through which reality can be understood or interpreted. At the core of this perspective is the concept of the person as a unique living whole, irreducible in value or worth, who is striving toward goals and is simultaneously self-contained yet open to the surrounding world. Personalism reorients the material of psychology around an experiencing individual as a systematic focal point. Thus, the findings of psychology can be organized only by reference to such a unique, living individual as the originator, carrier, and regulator of all psychological states and processes. This position reflects that of the school of PERSONALISTIC PSYCHOLOGY. **2.** a tendency to believe that another person's actions are directed at oneself rather than being an expression of that individual's characteristics.

**personalistic psychology** a school of psychology that emphasizes personality as the core of the field (see PERSONALISM), the uniqueness of every human being, and the study of an individual's traits (and organization of traits) as the key to personal understanding and adjustment to the environment. Personalistic psychology originated with German psychologists Eduard Spranger (1882–1963) and William STERN, as well as other Europeans, and was developed in the United States by Gordon W. ALLPORT.

**personality** *n.* the enduring configuration of characteristics and behavior that comprises an individual's unique adjustment to life, including major traits, interests, drives, values, self-concept, abilities, and emotional patterns. Personality is generally viewed as a complex, dynamic integration or totality shaped by many forces, including hereditary and constitutional tendencies; physical maturation; early training; identification with significant individuals and groups; culturally conditioned values and roles; and critical experiences and relationships. Various theories explain the structure and development of personality in different ways, but all agree that personality helps determine behavior. See also PERSONALITY DEVELOPMENT; PERSONALITY PSYCHOLOGY; PERSONALITY STRUCTURE.

**personality assessment** the evaluation of such factors as intelligence, skills, interests, aptitudes, creative abilities, attitudes, and facets of psychological development by a variety of methods and techniques. These include (a) observational methods that use behavior sampling, interviews, and rating scales; (b) personality inventories, such as the MINNESOTA MULTIPHASIC PERSONALITY INVENTORY; and (c) projective techniques, such as the RORSCHACH INK-BLOT TEST and THEMATIC APPERCEPTION TEST. The uses of personality assessment are numerous, including in the clinical evaluation of children and adults; in educational and vocational counseling; in industry and other organizational settings; and in rehabilitation.

**personality-based integrity test** see INTEGRITY TESTING.

**personality change** a modification of psychological functioning in relation to personality, such as a change in the degree to which one is shy versus socially open or a shift in the way one views events and behavior as internally controlled versus externally determined.

**personality correlates 1.** personality traits that are associated with a particular condition, illness, or disorder.

For example, personality correlates of stress sensitivity may include introversion, obsession, and dependency. **2.** variables that correlate with measures of personality. Correlations between personality traits and observed behaviors, for example, provide evidence for the validity of measures of such traits.

**personality cult** see CULT OF PERSONALITY.

**personality deterioration** a progressive decline in an individual's sense of personal identity, self-worth, motivational forces, and emotional life to the point at which he or she appears to be a changed person or even a "nonperson."

**personality development** the gradual development of personality in terms of characteristic emotional responses or temperament, a recognizable style of life, personal roles and role behaviors, a set of values and goals, typical patterns of adjustment, characteristic interpersonal relations and sexual relationships, characteristic traits, and a relatively fixed self-image.

**personality disintegration** fragmentation of the personality to such an extent that the individual no longer presents a unified, predictable set of beliefs, attitudes, traits, and behavioral responses. The most extreme examples of disintegrated, disorganized personality are found in the schizophrenias.

**personality disorder (PD)** any in a group of disorders involving pervasive patterns of perceiving, relating to, and thinking about the environment and the self that interfere with long-term functioning of the individual and are not limited to isolated episodes. *DSM-IV-TR* recognizes 10 specific personality disorders organized within three clusters: Cluster A includes paranoid, schizoid, and schizotypal; Cluster B includes antisocial, borderline, histrionic, and narcissistic; and Cluster C includes avoidant, dependent, and obsessive-compulsive; each disorder has its own entry in the dictionary. These constructs emerged from different theoretical perspectives of the early 20th century. They do not, however, exhaust the list of possible clinically significant maladaptive personality traits, and many of the *DSM-IV-TR* disorders are themselves often difficult to diagnose reliably; indeed, research has shown that many people diagnosed with a PD qualify for more than one. Conversely, **personality disorder not otherwise specified**, a residual category included within the *DSM-IV-TR* classification, is a highly common PD diagnosis in clinical settings, applied to patients whom clinicians determine to have a personality disorder but who do not meet the diagnostic criteria for any of the 10 disorders within the classification. *DSM-5* retains the same clusters of disorders, as well as the same diagnostic criteria for them, but includes, for "further study," a new model for PD classification, proposing impaired personality functioning and pathological personality traits as the main criteria for identifying the presence of a personality disorder.

**personality dysfunction** any manner in which a personality operates maladaptively. The term is sometimes used as a synonym for PERSONALITY DISORDER.

**personality-guided therapy** a therapeutic framework that considers an understanding of each individual's unique cognitive, affective, and behavioral traits to be essential for effective clinical treatment. According to this approach, psychopathology emerges from poorly functioning personality systems. Thus, to best facilitate a client's long-term recovery and return to healthy functioning, the approach does not address symptoms per se but rather fo-

cuses on changing the underlying ways of thinking, feeling, perceiving, and relating that are associated with the pathology. Once a practitioner becomes familiar with the whole person, he or she may then selectively apply various therapeutic techniques and perspectives (cognitive behavioral, humanistic, psychodynamic, etc.) if and when appropriate to a given personality system. For example, a nurturing, supportive approach to treating depression would be appropriate for clients with dependent personalities (who feel helpless and fear abandonment) but not for those with antisocial personalities (who are exploitative and impulsive). [introduced in 1999 by Theodore MILLON]

**personality inventory** a personality assessment device that usually consists of a series of statements covering various characteristics and behavioral patterns to which the participant responds by choosing among fixed answers, such as *true*, *false*, *always*, *often*, *seldom*, or *never*, as applied to himself or herself. The scoring of such tests is objective, and the results are interpreted according to standardized norms. An example is the MINNESOTA MULTIPHASIC PERSONALITY INVENTORY.

**personality processes** the dynamics of personality functioning that change over time and across situations as the individual interacts with different people and events in the environment. Personality processes are usually contrasted with PERSONALITY STRUCTURE, or the stable, enduring elements of an individual's personality.

**personality profile 1.** a graphic presentation of results from psychological testing that provides a summary of a person's traits or other unique attributes and tendencies. Because various scores appear in one display, a researcher can see the pattern of high and low scale scores for a given person. For example, a profile of an individual's test results from the MINNESOTA MULTIPHASIC PERSONALITY INVENTORY would display his or her scores on measures of depression, hysteria, masculinity/femininity, paranoia, social introversion, and other attributes. **2.** a summary of traits and behavioral tendencies that are believed to be typical of a particular group or category of individuals (e.g., people with a particular disorder, people employed in a particular profession).

**personality psychology** the branch of psychology that systematically investigates the nature and definition of personality as well as its development, its structure and trait constructs, its dynamic processes, its variations (with emphasis on enduring and stable individual differences), and its maladaptive forms (i.e., personality disorders). The field rests on a long history of theoretical formulation (e.g., trait theories, psychoanalytic theories, role theories, learning theories, type theories) that has aimed to synthesize cognitive, emotional, motivational, developmental, and social elements of human individuality into integrative frameworks for making sense of the individual human life. It has also developed numerous tests and assessments to measure and understand aspects of personality.

**personality structure** the organization of the personality in terms of its basic, enduring components and their relationship to each other. Structural theories vary widely according to their key concepts and include, for example, the PERSONAL DISPOSITIONS proposed by Gordon W. ALLPORT; the surface traits and source traits in CATTELL'S PERSONALITY TRAIT THEORY; the ID, EGO, and SUPEREGO in Sigmund FREUD's theory; the individual style of life posited by Alfred ADLER; and the needs and motivations in MASLOW'S MOTIVATIONAL HIERARCHY.

**personality study** the study of the dynamic structure and processes that determine individuals' emotional and behavioral adjustments to their environment. Such research has focused on the structure of major trait constructs, on how traits affect actions and selection of social settings, and on the stability of traits throughout the lifespan. For example, a researcher might be interested in understanding how conscientiousness manifests itself from adolescence to late adulthood.

**personality test** any instrument used to help evaluate personality or measure personality traits. Personality tests may collect self-report data, in which participants answer questions about their personality or select items that describe themselves, or they may take the form of projective tests (see PROJECTIVE TECHNIQUE) to measure both the conscious and unconscious aspects of a participant's personality.

**personality trait** a relatively stable, consistent, and enduring internal characteristic that is inferred from a pattern of behaviors, attitudes, feelings, and habits in the individual. The study of personality traits can be useful in summarizing, predicting, and explaining an individual's conduct, and a variety of personality trait theories exist, among them ALLPORT'S PERSONALITY TRAIT THEORY and CATTELL'S PERSONALITY TRAIT THEORY. However, because such theories do not explain the proximal causes of behavior or provide a developmental account, they must be supplemented by dynamic and processing concepts, such as those involving motives, schemas, plans, and life stories.

**personality type** any of the specific categories into which human beings may be classified on the basis of personality traits, attitudes, behavior patterns, physique (see CONSTITUTIONAL TYPE), or other outstanding characteristics. Examples are Carl JUNG'S INTROVERSION-EXTRAVERSION distinction and FUNCTIONAL TYPES and Erich FROMM's character types, such as the EXPLOITATIVE ORIENTATION and MARKETING ORIENTATION.

**Personalized Implicit Association Test** an IMPLICIT ATTITUDE MEASURE designed to eliminate the potential influence of extrapersonal associations on responses. In this procedure, the relatively normative category labels of *pleasant* and *unpleasant* are typically replaced with the more personalized category labels of *I like* and *I don't like*, and no feedback is given regarding classification errors. It is a variation of the IMPLICIT ASSOCIATION TEST. [developed by U.S. psychologists Michael A. Olson and Russell H. Fazio (1952– )]

**personalized instruction** **1.** teaching focused on the exact level of students' needs in a subject, regardless of curriculum or grade designations. **2.** a process of imparting knowledge that emphasizes a one-on-one relationship between student and instructor. This process enables a student to ask in-depth questions and to gain a clear understanding of concepts introduced by the instructor.

**Personal Orientation Inventory (POI)** an inventory intended to measure SELF-ACTUALIZATION. Originally developed in 1966, it consists of 150 items that each contain two statements descriptive of values or behavior. For each item, the participant selects the statement most descriptive of himself or herself. The POI is scored for two major scales (time ratio, support ratio) plus 10 subscales: self-actualizing value, existentiality, feeling reactivity, spontaneity, self-regard, self-acceptance, nature of man, synergy, acceptance of aggression, and capacity for intimate

contact. [developed by U.S. psychologist Everett L. Shostrom (1921–1992)]

**personal plan** **1.** a conception of one's future that includes goals to be achieved. **2.** in psychotherapy, a written plan of intervention developed for a client with the participation of all parties concerned. Usually compiled with reference to diagnostic and other data relevant to the client's situation, it identifies a continuum of treatment by outlining progressive steps to be achieved by the client.

**personal probability** see SUBJECTIVE PROBABILITY.

**personal projects** the aims of an individual that involve an organized set of activities of personal relevance over an extended period. [analyzed by Canadian personality psychologist Brian R. Little]

**personal protective equipment** gear, such as gloves, face masks, or hearing protection, that acts as a barrier to reduce or eliminate an individual's exposure to a hazard (e.g., dangerous chemicals, high levels of noise). See also ADMINISTRATIVE CONTROLS; ENGINEERING CONTROLS.

**personal space** an area of defended space around an individual. Personal space differs from other types of defended space (e.g., territory) by being a surrounding "bubble" that moves with the individual (see BUBBLE CONCEPT OF PERSONAL SPACE). It may have been used by various species throughout evolutionary history to protect the individual organism against intraspecies aggression and threats to personal autonomy. Because human use of personal space varies among cultures, it is a learned behavior, at least in part. See PROXEMICS.

**personal space invasion** the intrusion by one person into the personal space of another. The intruder inappropriately and uncomfortably crowds the other person. See PROXEMICS.

**personal strivings** personal goal systems that involve multiple interrelated aims, some of which may support one another, whereas others may be in conflict. [analyzed by U.S. personality psychologist Robert A. Emmons (1958– )]

**personal unconscious** in the ANALYTIC PSYCHOLOGY of Carl JUNG, the portion of each individual's unconscious that contains the elements of his or her own experience as opposed to the COLLECTIVE UNCONSCIOUS, which contains the ARCHETYPES universal to humankind. The personal unconscious consists of everything subliminal, forgotten, and repressed in an individual's life. Some of these contents may be recalled to consciousness, as in Sigmund FREUD's notion of the PRECONSCIOUS, but others cannot and are truly unconscious. The personal unconscious also contains COMPLEXES based on the individual's personal experience. In JUNG's view, the personal unconscious must be integrated into the conscious EGO for INDIVIDUATION to occur.

**person-centered planning** a process that, in the planning of services for an individual, focuses on his or her particular strengths, preferences, achievements, and unique circumstances. In the case of a person with a developmental disability, for example, emphasis is placed on the person, his or her family members, and the supports needed to enable the person to make choices, participate in the community, and achieve dignity. The process requires an extended commitment from participants and the development of an action-oriented plan.

**person-centered team** a group of people who meet periodically to develop plans for supports and services to

enhance the lifestyle and self-determination of an individual with a disability (e.g., an intellectual or developmental disability). The team uses methods based on principles of PERSON-CENTERED PLANNING. Team participants are invited by the person with the disability or his or her advocate, rather than by a service organization or agency, and they need not be trained professionals in human services.

**person-centered therapy** see CLIENT-CENTERED THERAPY.

**person-environment interaction** the relationship between a person's psychological and physical capacities and the demands placed on those capacities by the person's social and physical environment. Quality of life is influenced by **person-environment congruence**: Too few or too many environmental demands can lead to poorer quality of life. See also ENVIRONMENTAL PRESS-COMPETENCE MODEL.

**personification** *n.* **1.** in the approach of Harry Stack SULLIVAN, the pattern of feelings and attitudes toward another person that arises out of interpersonal relations with him or her. **2.** a figure of speech in which personal or human characteristics are attributed to an object or abstraction, as in saying *Fortune smiled on her*. **3.** a person viewed as representing or embodying some quality, thing, or idea. —**personify** *vb.*

**person in the patient** in the psychosomatic approach to therapy, the role of the patient's personality, character, and emotions as causative agents.

**person-machine system** see HUMAN-MACHINE SYSTEM.

**person-needs analysis** in industrial and organizational settings, a component of NEEDS ASSESSMENT in which data are collected to determine whether employees need training, which employees need training, and whether they are ready for training.

**personnel** *n.* see HUMAN RESOURCES.

**personnel data** **1.** information on newly hired employees derived from application forms, interviews, EMPLOYMENT TESTS, physical examinations, and letters of reference, to be used in matching individuals and jobs. See also BIOGRAPHICAL DATA. **2.** information on employees held by a personnel or HUMAN RESOURCES department. This will usually include personal details, posts held within the organization, salary and other benefits, PERFORMANCE REVIEWS, and EMPLOYEE EVALUATIONS.

**personnel placement** see JOB PLACEMENT.

**personnel psychology** the branch of INDUSTRIAL AND ORGANIZATIONAL PSYCHOLOGY that deals with the selection, placement, training, promotion, evaluation, and counseling of employees.

**personnel selection** the process of selecting employees best suited for particular jobs by using such procedures as the assembly and analysis of BIOGRAPHICAL DATA, EMPLOYMENT INTERVIEWS, and EMPLOYMENT TESTS.

**personnel specification** a list of certain precisely defined attributes that will be required in the successful candidate for a particular job, including educational or other qualifications, training, work experience, physical characteristics (e.g., strength, fitness), and specific work-related abilities. More general criteria, such as interests and personality traits, may also be included in the specification. Because these attributes are considered to be predictors of successful job performance, they will be emphasized in

publicity and may be tested during PERSONNEL SELECTION. Also called **job specification**. See JOB DIMENSIONS; JOB REQUIREMENTS; KNOWLEDGE, SKILLS, ABILITIES, AND OTHER CHARACTERISTICS. See also BONA FIDE OCCUPATIONAL QUALIFICATION.

**personnel test** any test used in PERSONNEL SELECTION, in the placement of newly hired or existing employees, or in EMPLOYEE EVALUATION. Such tests include (a) aptitude tests, which measure basic abilities and skills; (b) achievement tests, which measure job-specific abilities such as typing skill; and (c) personality and interest inventories, which are used as predictors of job performance. See EMPLOYMENT TEST; OCCUPATIONAL TEST.

**personnel training** in industrial and organizational settings, a program designed to achieve such goals as orientation of new employees, development of knowledge and skills, or modification of supervisor or employee attitudes. The learning procedures used in personnel training may include classes or lectures (see LECTURE METHOD), use of audiovisual aids or simulator devices (see SIMULATION TRAINING), role play, laboratory training, case discussions (see CASE METHOD), behavioral modeling, business games, or PROGRAMMED INSTRUCTION. The training may be provided outside or inside the usual work setting (see OFF-THE-JOB TRAINING; ON-THE-JOB TRAINING; VESTIBULE TRAINING). Also called **employee training**. See also EXECUTIVE COACHING; MANAGEMENT DEVELOPMENT.

**personology** *n.* **1.** the study of personality from the holistic point of view, based on the theory that an individual's actions and reactions, thoughts and feelings, and personal and social functioning can be understood only in terms of the whole person. **2.** the theory of personality as a set of enduring tendencies that enable individuals to adapt to life, proposed by Henry Alexander MURRAY. According to Murray, personality is also a mediator between the individual's fundamental needs and the demands of the environment.

**person perception** the processes by which people think about, appraise, and evaluate other people. An important aspect of person perception is the attribution of motives for action (see ATTRIBUTION THEORY).

**person-years** *pl. n.* the sum of the number of years that each individual in a population has been affected by an event, occurrence, or condition (e.g., a particular disorder or disease, a certain treatment protocol).

**perspective** *n.* **1.** the ability to view objects, events, and ideas in realistic proportions and relationships. **2.** the ability to interpret relative position, size, and distance of objects in a plane surface as if they were three-dimensional. **3.** the capacity of an individual to take into account and potentially understand the perceptions, attitudes, or behaviors of himself or herself and of other individuals. **4.** a particular way of looking at events or situations: a stance or philosophical position.

**perspective taking** looking at a situation from a viewpoint that is different from one's usual viewpoint. This may involve adopting the perspective of another person or that associated with a particular social role, as in ROLE PLAY exercises. The term is synonymous with ROLE TAKING. See also EMPATHY.

**perspective theory** a theory postulating that self-reports of attitudes on rating scales depend on the content and perspective of a person's attitude. **Content** refers to the evaluative responses that a person actually associates with

an ATTITUDE OBJECT. **Perspective** refers to the range of possible evaluative responses that a person considers when rating an attitude object. A self-report of an attitude can change as a result of a change in content or perspective, that is, an actual change in the attitude or in what a person defines as an extremely positive or negative attitude. [originally proposed by U.S. psychologists Harry S. Upshaw (1926–2012) and Thomas M. Ostrom (1936–1994)]

**perspectivism** *n.* a philosophical position in which it is assumed that there is no objective, context-independent truth. Perspectivism is sometimes applied to psychotherapy. [derived from the work of Friedrich NIETZSCHE]

**perspiration** *n.* see SWEATING.

**persuasion** *n.* an active attempt by one person to change another person's attitudes, beliefs, or emotions associated with some issue, person, concept, or object. See also DUAL PROCESS MODEL OF PERSUASION. —**persuasive** *adj.*

**persuasion therapy** a type of SUPPORTIVE PSYCHOTHERAPY in which the therapist attempts to induce the client to modify faulty attitudes and behavior patterns by appealing to the client's powers of reasoning, will, and self-criticism. The technique was advocated by Alfred ADLER and others, notably Swiss-born French physicians Paul-Charles Dubois (1848–1918) and Joseph Jules Déjerine (1849–1917), as a briefer alternative to RECONSTRUCTIVE PSYCHOTHERAPY.

**persuasive arguments theory** an analysis of GROUP POLARIZATION that assumes that the opinions of group members discussing an issue or choice will tend to become more extreme when a majority of the members favor a particular position, because the group will generate more arguments favoring the majority position. See also CHOICE SHIFT.

**persuasive communication** information that is intended to change or bolster a person's attitude or course of action and is presented in written, audio, visual, or audiovisual form.

**pertinence model** **1.** a model of attention in which various stimuli or sources of information are weighted in terms of their relevance. **2.** a model of perception according to which a stimulus that is highly relevant can attract attention even if it is weak.

**perturbation** *n.* **1.** an anxious or distressed mental state. In the context of an attempted or completed suicide, it is a measure of the extent to which a person is (or was) upset or disturbed. **2.** an influence or activity that causes an interruption or interference in a mental or physical phenomenon or system.

**pertussis** *n.* see WHOOPING COUGH.

**pervasive developmental disorder** in DSM–IV–TR, any of a class of disorders characterized by severe and widespread impairment in social interaction and verbal or nonverbal communication or by the presence of stereotyped behavior, interests, and activities. These disorders are frequently apparent from an early age; they include ASPERGER'S DISORDER, AUTISM, CHILDHOOD DISINTEGRATIVE DISORDER, and RETT SYNDROME. In DSM–5, these disorders have been subsumed under AUTISM SPECTRUM DISORDER.

**perversion** *n.* a culturally unacceptable or prohibited form of behavior, particularly sexual behavior. See SEXUAL PERVERSION.

**perverted logic (perverted thinking)** see PARALOGIA.

**pessimism** *n.* the attitude that things will go wrong and that people's wishes or aims are unlikely to be fulfilled. **Pessimists** are people who expect bad things to happen to them and to others or who are otherwise doubtful or hesitant about positive outcomes. Most individuals lie somewhere on the spectrum between the two polar opposites of pure OPTIMISM and pure pessimism but tend to demonstrate relatively stable situational tendencies in one direction or the other. See also EXPECTANCY-VALUE MODEL. —**pessimistic** *adj.*

**PET 1.** acronym for PARENT EFFECTIVENESS TRAINING. **2.** acronym for POSITRON EMISSION TOMOGRAPHY.

**pet-assisted therapy** see ANIMAL-ASSISTED THERAPY.

**petechial hemorrhage** a minute HEMORRHAGE, often of pinpoint size.

**Peter principle** the theory that people in an organization will rise to their level of incompetence; that is, employees will continue to receive promotions and additional responsibilities until they can no longer successfully perform their work. [proposed in 1969 in a book of the same title by Lawrence J. **Peter** (1919–1990), Canadian-born U.S. educationalist]

**pethidine** *n.* see MEPERIDINE.

**petit mal seizure** see ABSENCE SEIZURE.

**petrification** *n.* see FOSSIL.

**pet therapy** see ANIMAL-ASSISTED THERAPY.

**petting behavior** sexual activity that may not continue to orgasm or may be foreplay engaged in prior to orgasm. Petting behavior may include kissing, caressing the breasts and genitals, oral sex, and placing the genitals in apposition.

**peyote** *n.* a small, spineless cactus, *Lophophora williamsii*, that grows wild in Mexico and southern Texas. The name is derived from the Aztec word *peyotl*, which describes the plant as resembling a caterpillar's cocoon. The principal active ingredient is the hallucinogen Mescaline, found on the crown of the plant in discoid protuberances called **mescal buttons**. These buttons are cut from the roots and dried, then chewed or soaked in water to produce an intoxicating liquid. From earliest recorded time, peyote has been used by indigenous peoples of northern Mexico and the southwestern United States as a part of their religious ceremonies; it is still incorporated into the rituals of the Native American Church. Both peyote and mescaline are classified by the U.S. Drug Enforcement Administration as Schedule I controlled substances (see SCHEDULED DRUG). Peyote's future is threatened by overharvesting for use as a recreational drug.

**P factor analysis** see P-TECHNIQUE FACTOR ANALYSIS.

**Pfaundler–Hurler syndrome** see HURLER SYNDROME.

**Pfeiffer's syndrome** an inherited disorder marked by premature fusion of the cranial bones, causing a skull deformity (see CRANIOSYNOSTOSIS SYNDROME). Individuals also have facial deformities with protruding, widely spaced eyes (which often show signs of STRABISMUS), large thumbs, and large great toes. Some affected individuals have below average intelligence. The syndrome is inherited as a dominant trait (see ACROCEPHALOSYNDACTYLY). Also called **acrocephalosyndactyly Type V**. [Emil Pfeiffer (1846–1921), German physician]

**PFS** abbreviation for Perceived Fraudulence Scale. See IMPOSTOR PHENOMENON.

**PG** abbreviation for PROTAGLANDIN.

**PGN** abbreviation for PARAGIGANTOCELLULAR NUCLEUS.

**PGO spikes** pontine–geniculo–occipital spikes: voltage peaks, recorded via implanted or scalp electrodes during sleep, that occur in the pons, lateral geniculate nucleus, and occipital cortex and are associated with REM SLEEP.

**PGR** abbreviation for psychogalvanic reflex (or response). See GALVANIC SKIN RESPONSE.

**pH** *n.* see HYDROGEN-ION CONCENTRATION.

**phacomatosis** *n.* see PHAKOMATOSIS.

**Phaedra complex** the incestuous love of a stepmother for her stepson. The name derives from the Greek myth of Phaedra, wife of Theseus. When her stepson, Hippolytus, rejected her love, Phaedra accused him of violating her and hanged herself.

**phago-** (**phag-**) *combining form* eating.

**phagocytosis** *n.* the process by which bacteria, viruses, nutrients, other cells, and cell debris are engulfed by cells called **phagocytes**. The substances are first surrounded by a membrane, forming a vacuole within the phagocyte. The vacuole then fuses with a **lysosome**, an organelle containing enzymes that digest the engulfed contents. Certain white blood cells act as phagocytes as part of the IMMUNE RESPONSE.

**phagomania** *n.* an insatiable hunger or morbid desire to consume food.

**phakomatosis (phacomatosis)** *n.* a hereditary disorder characterized by the growth of benign nodulelike tumors of the brain, eye, and skin. Types of phakomatosis include von Recklinghausen's disease (see NEUROFIBROMATOSIS), cerebrotretinal angiomas, tuberous sclerosis, and encephalotrigeminal angiomas.

**phakoscope (phacoscope)** *n.* an instrument that enables the shape of the lens of the eye to be observed, as well as the changes in its shape that occur during ACCOMMODATION.

**phallic** *adj.* of, relating to, or resembling the penis.

**phallic character** see PHALLIC PERSONALITY.

**phallicism** *n.* reverence for the male genitalia, especially when regarded as symbolizing the creative forces of nature. Also called **phallism**; **phallus worship**. See also PHALLOCENTRIC.

**phallic mother** in classical psychoanalytic theory, the fantasy that the mother has a penis, or symbolically, the experience of a mother with masculine personality traits.

**phallic personality** in classical psychoanalytic theory, a pattern of narcissistic behavior exemplified by boastfulness, excessive self-assurance, vanity, compulsive sexual behavior, and in some cases competitive, aggressive, or exhibitionistic behavior. Also called **phallic character**; **phallic-narcissistic character** (or **personality**).

**phallic phase** see PHALLIC STAGE.

**phallic pride** in classical psychoanalytic theory, the sense of superiority and power experienced by boys when they discover that they have a penis and girls do not. These

feelings are believed to help master intense CASTRATION ANXIETY.

**phallic sadism** in classical psychoanalytic theory, aggression that is associated with the child's PHALLIC STAGE of psychosexual development. The child interprets sexual intercourse as a violent, aggressive activity on the part of the man and particularly on the part of the penis. See also PRIMAL SCENE; SADISM.

**phallic stage** in the classical psychoanalytic theory of Sigmund FREUD, the third stage of PSYCHOSEXUAL DEVELOPMENT beginning around age 3, when the LIBIDO is focused on the genital area (penis or clitoris) and discovery and manipulation of the body become a major source of pleasure. During this period, boys are posited to experience CASTRATION ANXIETY, girls to experience PENIS ENVY, and both to experience the OEDIPUS COMPLEX. Also called **phallic phase**.

**phallic symbol** any object that resembles or might be taken as a representation of the penis, such as a cigar, pencil, tree, skyscraper, snake, or hammer.

**phallism** *n.* see PHALLICISM.

**phallogocentric** *adj.* **1.** denoting a culture or belief system in which the phallus (penis) is regarded as a sacred giver of life, source of power, or symbol of fertility and which consequently privileges men and masculinity. See PHALLICISM; PRIAPISM. See also ANDROCENTRIC. **2.** more generally, focused or fixated on the penis as a symbol of male potency. —**phallogocentrism** *n.*

**phallus** *n.* (*pl.* **phalli**) the penis or an object that resembles the form of the penis. As a symbolic object, the phallus often represents fertility or potency.

**phallus worship** see PHALLICISM.

**phanerothyme** *adj.* a term coined by British writer Aldous Huxley (1894–1964) to describe the effect of mind-altering drugs, such as LSD (from Greek *phanein*, “to reveal,” and *thymos*, “mind, soul”). He first used the term in a letter (1956) to his friend Humphry Osmond (1917–2004), who counterproposed the term **psychedelic**, which has the same etymological sense of “mind-revealing.” See also HALLUCINOGEN.

**phantasm** *n.* an illusion or apparition, often of an absent person appearing in the form of a spirit or ghost. The observer may recognize it as being imaginary or illusory, unlike a true hallucination, which is associated with lack of insight on the part of the observer.

**phantasmagoria** *n.* a shifting series of confused or deceptive images, as in a dream or hallucination. [from the name of a 19th-century theatrical show, in which magic lantern effects were used to create images of ghosts and specters] —**phantasmagoric** *adj.*

**phantasticum** *n.* (*pl.* **phantastica**) a category of drugs identified in the 1920s as capable of producing hallucinatory experiences. These drugs are now known as HALLUCINOGENS. [named by German toxicologist Louis Lewin (1850–1929)]

**phantasy** *n.* in the OBJECT RELATIONS THEORY of Melanie KLEIN, one of the unconscious constructions, wishes, or impulses that are presumed to underlie all thought and feeling. The *ph* spelling is used to distinguish this from the everyday form of FANTASY, which can include conscious daydreaming.



**phantom** *n.* **1.** an illusion without material substance. **2.** the feeling that an amputated body part (e.g., a limb or breast) is still present. See BREAST-PHANTOM PHENOMENON; PHANTOM LIMB; PSEUDOESTHESIA.

**phantom breast** see BREAST-PHANTOM PHENOMENON.

**phantom color** a color perceived during stimulation with a black and white pattern, such as a BENHAM'S TOP.

**phantom limb** the feeling that an amputated limb is still present, often manifested as a tingling or, occasionally, painful sensation in the area of the missing limb (**phantom limb pain**). It is thought that the brain's cortical representation of the limb remains intact and continues to signal the presence of the amputated limb in the absence of normal SOMESTHETIC STIMULATION. See also BREAST-PHANTOM PHENOMENON.

**phantom-lover syndrome** a type of EROTIC DELUSION elaborated around a person who in fact does not exist. [defined in 1978 by Canadian psychiatrist Mary V. Seeman]

**phantosmia** *n.* perception of an odor when no smell stimulus is present (i.e., an olfactory hallucination). See also DYSOSMIA.

**pharmacodynamics** *n.* the study of the effects of drugs on the body and their mechanisms of action. Basic studies investigate the activity of drugs at the receptor sites to which the drugs attach as well as the changes in cell function and behavior that result. —**pharmacodynamic** *adj.*

**pharmacodynamic tolerance** a form of drug TOLERANCE in which the chemistry of the brain becomes adjusted to the presence of the drug, which in turn loses its capacity for modifying brain activity. Neurons adapt to continued drug presence by reducing the number or sensitivity of receptors available to the drug (i.e., down-regulation). This cellular-adaptive tolerance is associated with the use of many drugs, including sedative-hypnotics and psychostimulants, and may be followed by withdrawal symptoms when regular doses of the drug are interrupted. Pharmacodynamic tolerance may be contrasted with **metabolic tolerance**, in which the body reacts to continued presence of the drug by metabolizing it at an increased rate. Both forms of tolerance lead to higher doses of the drug being needed to produce the same effects.

**pharmacogenetics** *n.* the study of genetic factors that influence the response of individuals to different drugs and to different dosages of drugs. Inherited variations in enzymes or other metabolic components can affect the efficacy of a drug or cause adverse reactions to normal doses. For example, some 40% to 70% of Caucasians have an enzyme variant that causes them to metabolize the antituberculosis drug isoniazid very slowly. They require only a fraction of the standard dose. Also, there are genetic variants of various CYTOCHROME P450 enzymes that can predict rapid or poor drug metabolism. See also PHARMACOGENOMICS.

**pharmacogenomics** *n.* the study of how gene variations influence an individual's response to medications. This study as applied to psychotropic medications is called **psychiatric pharmacogenomics**. Clinically, pharmacogenomic information offers a means of individualizing drug treatment through genetic testing to predict an individual's response to various drugs and thereby to prescribe medication that is the most appropriate, with the fewest side effects, for that individual. Pharmacogenomics and PHARMACOGENETICS are increasingly used synonymously.

**pharmacokinetics** *n.* the study of how pharmacological agents are processed within a biological system, in vivo or in vitro, including factors that influence the absorption, distribution, metabolism, and elimination of a substance or its metabolic products. The study of this process in infants and children is called **developmental pharmacokinetics**.

**pharmacological antagonism** see ANTAGONIST.

**pharmacology** *n.* the branch of science that involves the study of substances that interact with living organisms to alter some biological process affecting the HOMEOSTASIS of an organism. Therapeutic (or medical) pharmacology deals with the administration of substances to correct a state of disease or to enhance well-being. —**pharmacological** or **pharmacologic** *adj.*

**pharmacopeia (pharmacopoeia)** *n.* a book, usually issued by a recognized authority, that lists drugs and their chemical properties, preparations, recommended dosages, methods of administration, side effects, dangers, and other information.

**pharmacotherapeutic regimen** a plan for the treatment of a condition through the use of medication, outlining, for example, the type of drug or drugs to be used, dosage requirements, schedule of administration, and expected duration of use.

**pharmacotherapy** *n.* the treatment of a disorder by the administration of drugs, as opposed to such means as surgery, psychotherapy, or complementary and alternative methods. Also called **drug therapy**. See PSYCHOPHARMACOTHERAPY.

**pharynx** *n.* the muscular and membranous tube running from the mouth and nostrils to the entrance to the esophagus (gullet) that acts as the passage for food and respiratory gases. It consists of three major sections: the lower LARYNGOPHARYNX, the middle OROPHARYNX, and the upper NASOPHARYNX. —**pharyngeal** *adj.*

**phase** *n.* **1.** a stage in the development of life, such as puberty or adulthood. **2.** a recurrent state of any cyclical process.

**phase locking** the tendency for a neural ACTION POTENTIAL to occur at a certain phase of a PURE-TONE stimulus. Typically, an action potential will not occur on every cycle, but when it is generated, it tends to occur at the same point or phase in the stimulus. More generally, phase locking refers to the ability of a neuron to synchronize or follow the temporal structure of a sound. In the auditory nerve, fibers can phase lock to frequencies below 4 to 5 kHz. Phase locking underlies the ability to localize sounds based on interaural phase differences or interaural time differences (see BINAURAL CUE). Its role in monaural hearing is uncertain, but it has been proposed as a mechanism for the coding of pitch.

**phase modulation** see MODULATION.

**phase shift** **1.** a disruption of the normal sleep-wake cycle, with the result that the individual is alert during a usual sleeping period and sleepy when he or she should be alert. See CIRCADIAN RHYTHM SLEEP DISORDER; DISORDERS OF THE SLEEP-WAKE CYCLE SCHEDULE. **2.** a change in the diurnal or CIRCADIAN RHYTHM brought about, for example, by changes in daylight exposure or changing time zones.

**phase spectrum** see SOUND SPECTRUM.

**phasic activation** a pattern of brain activation, associated with attention mechanisms, that is related to the DIF-

FUSE THALAMIC PROJECTION SYSTEM and is transitory rather than prolonged or persistent in nature. Compare TONIC ACTIVATION.

**phasic receptor** a receptor cell that shows a rapid fall in the frequency of discharge of nerve impulses as stimulation is maintained. Compare TONIC RECEPTOR.

**phatic communication** spoken or written communication that is intended primarily to establish or maintain social relationships rather than to convey information.

**phencyclidine** *n.* see PCP.

**phencyclidine intoxication** in *DSM-IV-TR* and *DSM-5*, a reversible syndrome due to the recent ingestion of phencyclidine (PCP) or a similar substance. It includes clinically significant behavioral or psychological changes (e.g., belligerence, assaultiveness, impulsiveness, unpredictability, psychomotor agitation, impaired judgment, impaired social or occupational functioning), as well as one or more signs of physiological involvement (e.g., vertical or horizontal NYSTAGMUS, hypertension or tachycardia, numbness or diminished responsiveness to pain, unsteady gait, unclear speech, muscle rigidity, seizures, coma). See also SUBSTANCE INTOXICATION.

**phencyclidine intoxication delirium** in *DSM-IV-TR* and *DSM-5*, a reversible syndrome that develops over a short period of time (usually hours to days) following heavy consumption of phencyclidine (PCP) or a similar substance. It includes disturbances of consciousness (e.g., reduced ability to focus, sustain, or shift attention) accompanied by other changes in cognition (e.g., memory deficit, disorientation, language disturbance) in excess of those usually associated with PHENCYCLIDINE INTOXICATION. See also SUBSTANCE INTOXICATION DELIRIUM.

**phenelzine** *n.* a MONOAMINE OXIDASE INHIBITOR that exerts its antidepressant effects by irreversibly binding to monoamine oxidase, thus preventing the breakdown of monoamine neurotransmitters. As with other drugs in its class, phenelzine has been supplanted by safer drugs without the associated toxicities, dietary restrictions, and drug interactions. U.S. trade name: **Nardil**.

**Phenergan** *n.* a trade name for PROMETHAZINE.

**phenobarbital** *n.* an anticonvulsant BARBITURATE used for treatment of generalized tonic-clonic or partial seizures. At one time widely used as a sedative and hypnotic, it has been largely supplanted for these purposes by safer medications lacking the toxicity and adverse effects associated with barbiturates. Phenobarbital is also sometimes used in the management of SEDATIVE, HYPNOTIC, OR ANXIOLYTIC WITHDRAWAL. U.S. trade name: **Luminal**.

**phenocopy** *n.* an imitation of a PHENOTYPE resulting from the interaction of an environmental factor and a GENOTYPE. An example is the effect of sunlight on skin or hair, resulting in variations that mimic the natural coloring or texture of other phenotypes.

**phenomena** *pl. n.* see PHENOMENON.

**phenomenal absolutism** see NAIVE REALISM.

**phenomenal field** see PHENOMENAL SPACE.

**phenomenalism** *n.* the doctrine that access to, and thus knowledge of, the external world is always through sensory experience of phenomena. Propositions about physical objects are therefore to be analyzed in terms of actual or possible sensory experiences. The position is compatible

with certain forms of IDEALISM, in that physical entities are defined in terms of mental experience, but also with EMPIRICISM and POSITIVISM. —**phenomenalist** *adj.*

**phenomenal motion** motion that may not be real but is perceived or experienced as being real. See APPARENT MOVEMENT. See also PHENOMENAL SPACE.

**phenomenal self** the SELF as experienced by the individual at a particular time. Only a small portion of self-knowledge is active in working memory or consciousness at any time. The same person might have a very different phenomenal self at different times, without any change in actual self-knowledge stored in long-term memory, simply because different views are brought into awareness by events. Also called **working self-concept**.

**phenomenal space** the environment as experienced by an individual at a given time. The term refers not to objective reality but to personal and subjective reality, including everything within one's field of awareness. In the phenomenological personality theory of Carl ROGERS, it is also known as the **phenomenological field**. Also called **phenomenal field**.

**phenomenistic causality** in PIAGETIAN THEORY, an inference of causality between events, drawn only on the basis of spatial or temporal contiguity. Such inferences are typical of the thought processes of a young child. For example: *It is dark outside because I am sleepy.*

**phenomenological analysis** an approach to psychology in which mental experiences are described and studied without theoretical presuppositions or speculation as to their causes or consequences. In general, such an approach will favor observation and description over interpretation; it will also attempt to understand a person's experience from the point of view of that person, rather than from some abstract theoretical perspective. See also PHENOMENOLOGY.

**phenomenological death** the subjective sense that one has become inert, insensitive, and unresponsive. Phenomenological death occurs in some psychotic conditions. Individuals may speak of themselves as dead and behave (although inconsistently) in accord with that belief. Phenomenological death is conceived as the extreme point on a continuum of self-assessment; it is not necessarily a condition that is permanent.

**phenomenological field** see PHENOMENAL SPACE.

**phenomenological theory** an approach to personality theory that places questions of individuals' current experiences of themselves and their world at the center of analyses of personality functioning and change. See also PERSONAL CONSTRUCT. [proposed by George A. KELLY]

**phenomenological therapy** any form of therapy, perhaps best exemplified by CLIENT-CENTERED THERAPY, in which the emphasis is on the client's process of self-discovery rather than on the therapist's interpretation of the individual's underlying psychodynamics, as occurs in psychoanalysis.

**phenomenology** *n.* a movement in European philosophy initiated by German philosopher Edmund Husserl (1859–1938). In his writings of the 1910s and 1920s, Husserl argued for a new approach to human knowledge in which both the traditional concerns of philosophy (such as metaphysics and epistemology) and the modern concern with scientific causation would be set aside in favor of a careful attention to the nature of immediate conscious ex-

perience. Mental events should be studied and described in their own terms, rather than in terms of their relationship to events in the body or in the external world. However, phenomenology should be distinguished from introspection as it is concerned with the relationship between acts of consciousness and the objects of such acts (see INTENTIONALITY). Husserl's approach proved widely influential in psychology (especially GESTALT PSYCHOLOGY) and the social sciences; it also inspired the work of German philosopher Martin Heidegger (1889–1976), whose EXISTENTIAL PHENOMENOLOGY provided the basis for EXISTENTIALISM and EXISTENTIAL PSYCHOLOGY. —**phenomenological** *adj.* —**phenomenologist** *n.*

**phenomenon** *n.* (*pl.* **phenomena**) **1.** an observable event or physical occurrence. **2.** in philosophy, something perceived by the senses. In Greek philosophy, most notably that of PLATO, phenomena are the sensible things that constitute the world of experience, as contrasted with the transcendent realities that are known only through reason. Immanuel KANT used the term *phenomena* to refer to things as they appear to the senses and are interpreted by the categories of human understanding. For Kant, knowledge of phenomena is the kind of knowledge available to human beings; in contrast, knowledge of NOUMENA, or things in themselves, remains beyond human experience or reason. **3.** an occurrence or entity that defies explanation. —**phenomenal** *adj.*

**phenothiazine** *n.* any of a group of chemically related compounds that are mostly used as ANTIPSYCHOTIC drugs, having been originally developed as such in the 1950s. Divided into three subgroups—aliphatic, piperazine, and piperidine—the drugs in this class of conventional antipsychotics were the first effective antipsychotic medications and at one time were the most widely used agents for the treatment of schizophrenia. They are also used for the treatment of acute mania, psychotic agitation, and nausea and vomiting, as well as for preanesthesia sedation. It is commonly assumed that their therapeutic effects are produced by blockade of dopamine D2 receptors (see DOPAMINE-RECEPTOR ANTAGONIST); they also block acetylcholine, histamine, and norepinephrine receptors. A variety of adverse side effects is associated with their use, including EXTRAPYRAMIDAL SYMPTOMS, TARDIVE DYSKINESIA, sedation, and ANTICHOLINERGIC EFFECTS.

**phenotype** *n.* the observable characteristics of an individual, such as morphological or biochemical features and the presence or absence of a particular disease or condition. Phenotype is determined by the expression of the individual's GENOTYPE coupled with the effects of environmental factors (e.g., nutritional status, climate). See also PARATYPE. —**phenotypic** *adj.*

**phentermine** *n.* an APPETITE SUPPRESSANT with a mechanism of action similar to the AMPHETAMINES. Like other appetite suppressants, it is effective only for short-term weight loss; long-term results require concurrent adherence to effective behavioral weight-loss strategies. Phentermine was previously marketed in combination with FENFLURAMINE or dexfenfluramine—a combination known as “phen-fen”—which was taken off the market after cases of pulmonary hypertension and heart-valve disease were reported in users. These serious side effects may also occur with the use of phentermine alone. It should not be given in combination with MONOAMINE OXIDASE INHIBITORS and should be used with caution in individuals taking SSRI antidepressants. U.S. trade names: **Adipex**; **Ionamin**.

**phentolamine** *n.* an alpha-ADRENERGIC BLOCKING AGENT with direct action on heart and smooth muscle. It is a potent vasodilator used in the management of severe hypertension associated with catecholamine excess, as in patients with PHEOCHROMOCYTOMAS. It is in infrequent clinical use. U.S. trade name: **Regitine**.

**phenylalkylamine** *n.* any of a group of natural and synthetic drugs that can produce hallucinogenic effects. They include the PHENYLETHYLAMINES, such as Mescaline, and the phenylisopropylamines (substituted phenylethylamines), such as MDMA.

**phenylcyclohexyl derivative** any in a category of drugs introduced in 1960 as general anesthetics but discontinued because they caused serious psychological disturbances in patients. The prototype drug, PCP, produces sensory deprivation effects similar to those observed in some cases of schizophrenia. Drugs of this series are considered to be HALLUCINOGENS but may be used as anesthetics and analgesics in veterinary medicine.

**phenylethylamine** *n.* any of a group of drugs with hallucinogenic effects and a common basic chemical structure. The prototype is Mescaline, an alkaloid first isolated from the PEYOTE cactus in 1896. Mescaline is one of the least potent of the hallucinogens, but potency is increased by adding methyl groups to the basic molecule, thereby creating substituted phenylethylamines. The latter include the amphetamine derivatives DOM, MDA, and MDMA. See also PHENYLALKYLAMINE.

**phenylketonuria (PKU)** *n.* an inherited metabolic disease transmitted as an autosomal recessive trait and marked by a deficiency of an enzyme (phenylalanine hydroxylase) needed to utilize the amino acid phenylalanine. Unless it is diagnosed in early infancy and treated by a restricted dietary intake of phenylalanine, phenylketonuria leads to intellectual and developmental disabilities. Women who have been treated for the disease must adopt a restricted diet during pregnancy to prevent neurological damage to their children (see MATERNAL PKU).

**phenylpyruvic acid** an intermediate product of the metabolism of phenylalanine. In patients with PHENYLKETONURIA, phenylalanine is not converted to the normal end-product, tyrosine, but only to phenylpyruvic acid, which is excreted in their urine.

**phenytoin** *n.* an ANTICONVULSANT drug; the prototype of the HYDANTOINS. Phenytoin is prescribed mainly for the management of partial and tonic-clonic seizures but is also used in the treatment of some cases of migraine and neuralgia. It is occasionally used to manage behavioral disturbances in children. U.S. trade name (among others): **Dilantin**.

**pheochromocytoma** *n.* a small tumor that usually develops in the adrenal medulla but may occur in tissues of the sympathetic paraganglia. Because it is composed of adrenal tissue, it can secrete epinephrine and norepinephrine, producing excessive levels of these catecholamines. Effects include hypertension with headaches, tachycardia, visual blurring, and other symptoms. It is believed to be an inherited disorder.

**pheromone** *n.* a chemical signal that is released outside the body by members of a species and that influences the behavior of other members of the same species. For example, it may serve to attract a mate or to act as an alarm. In nonhuman animals, sensitivity to pheromones occurs via

the VOMERONASAL SYSTEM. The existence of true pheromones in humans is controversial, although scents (e.g., perfumes, body odors) may play a role in sexual attraction and arousal. Pheromones have also been suggested as a cause of MENSTRUAL SYNCHRONY. Also called **ectohormone**. Compare ALLOMONE.

**phi coefficient** (symbol:  $\phi$ ) a measure of association for two dichotomous or binary RANDOM VARIABLES. The phi coefficient is the PRODUCT-MOMENT CORRELATION COEFFICIENT when both variables are coded (0, 1). For example, the phi coefficient could be used to examine the relationship between gender (male [0] and female [1]) and left- (0) or right-handedness (1). A table could be constructed to record the frequency of people with a 0 on both variables (i.e., left-handed males), a 1 on both variables (i.e., right-handed females), a 0 on the first variable and a 1 on the other (i.e., right-handed males), and vice versa (i.e., left-handed females). The pairs of responses on the variables could then be analyzed and a phi coefficient calculated to determine whether any relationship exists. See also CRAMÉR'S V; TETRACHORIC CORRELATION COEFFICIENT.

**phi-gamma function** (symbol:  $\phi(\gamma)$ ) for the METHOD OF CONSTANT STIMULI, a plot of response probability based on stimulus magnitude that takes the ogival (S-shaped) form of the cumulative normal distribution.

**-philia** *suffix* abnormal craving or attraction (e.g., NECROPHILIA).

**Phillips Rating Scale of Premorbid Adjustment in Schizophrenia** a method of analyzing the PREMOR-BID ADJUSTMENT of patients with schizophrenia as part of a determination of their prognosis. It is based on questions derived by a researcher from case-history information. Also called **Phillips Scale; Phillips Scale of Premorbid Adjustment**. [developed in 1953 by psychopharmacologist Leslie Phillips]

**philo-** (**phil-**) *combining form* love of or interest in.

**philology** *n.* **1.** the study of the history of languages and of their relationships with one another, usually with a focus on the analysis of textual records. See also COMPARATIVE LINGUISTICS; DIACHRONIC LINGUISTICS; GENETIC LINGUISTICS. **2.** originally, love of learning or literature. —**philological** *adj.*

**philopatry** *n.* attachment to the place where an individual was born or hatched. In species with sex-biased DISPERSAL, the nondispersing sex is said to show philopatry. If males typically leave the natal group to join other groups, the species shows female philopatry.

**philosophical psychology** the branch of psychology that studies the philosophical issues relevant to the discipline and the philosophical assumptions that underlie its theories and methods. It approaches psychology from a wide perspective informed by a knowledge of metaphysics, epistemology, ethics, the history of ideas, the philosophy of science, and the tools of formal philosophical analysis. Philosophical psychologists tend to concentrate on the larger issues arising from the field rather than on model building and data gathering. See also RATIONAL PSYCHOLOGY.

**philosophical psychotherapy** psychotherapy based on philosophical principles relating to cognition, emotion, and behavior or based on the principles of a particular philosophical perspective (e.g., EXISTENTIAL PSYCHOTHERAPY). Training in philosophy without appropriate training

in the mental health field, however, is deemed inadequate for offering psychotherapy or counseling services.

**philosophical zombie** (**p-zombie**) see ZOMBIE.

**philosophy** *n.* the intellectual discipline that uses careful reasoned argument to elucidate fundamental questions, notably those concerning the nature of reality (METAPHYSICS), the nature of knowledge (EPISTEMOLOGY), and the nature of moral judgments (ETHICS). As such, it provides an intellectual foundation for many other disciplines, including psychology. Psychology as a scientific discipline has its roots in the epistemological preoccupations of 18th- and 19th-century philosophy and continues to be influenced by philosophical ideas. See PHILOSOPHICAL PSYCHOLOGY. —**philosopher** *n.* —**philosophical** *adj.*

**philosophy of mind** the branch of philosophy concerned with questions about the nature and functioning of mind and consciousness and the relationship of mind and mental activity to brain and body and to the external world (see MIND–BODY PROBLEM). It is deeply concerned with the relationships among language, thought, and action.

**philosophy of science** the branch of philosophy devoted to the study and understanding of science and its development. It is concerned with such matters as the methods of science, the nature of scientific knowledge and scientific explanation, and the meaning of the scientific enterprise.

**phimosis** *n.* a condition, congenital or acquired, in which the foreskin of the penis cannot be retracted over the glans. Phimosis may be corrected by circumcision. The acquired form of phimosis is usually due to an infection (sexually transmitted or otherwise) or edema.

**Phineas Gage** (1823–1860) an individual, often featured in introductory psychology textbooks, who was made famous when an explosion caused a metal rod to pass through and damage anterior parts of the frontal lobes of his brain. He exhibited no apparent cognitive deficits but later showed changes in behavior and personality. Sources differ about the extent and chronicity of these changes: Some report that the changes were severe and permanent, whereas others indicate that Gage recovered from his injury or at least adapted well to its effects.

**phi phenomenon** **1.** an illusion of APPARENT MOVEMENT seen when two lights flash on and off about 150 m apart. The light appears to move from one location to the other. The phi phenomenon is a form of beta movement. **2.** a sensation of pure movement independent of any other attributes of the stimulus, such as its form.

**phlebotomy** *n.* removal of blood from the body for diagnostic or therapeutic purposes. This is ordinarily achieved by inserting a needle or catheter into a vein and then applying negative pressure. Through the early and mid-19th century, this practice was known as **bloodletting** and involved the removal of considerable quantities of blood as a means of curing or preventing disease. Also called **venesection**.

**phlegmatic type** one of the original constitutional body types based on the four humors associated with Hippocrates (c. 460–c. 377 BCE) and described by GALEN, who attributed the apathetic character of the phlegmatic type to the dominance of phlegma, or mucus, over other body fluids, or humors. See CARUS TYPOLOGY; HUMORAL THEORY.

**PHO** abbreviation for PHYSICIAN–HOSPITAL ORGANIZATION.

**-phobia** *suffix* irrational fear or dislike (e.g., CLAUSTROPHOBIA).

**phobia** *n.* a persistent and irrational fear of a specific situation, object, or activity (e.g., heights, dogs, water, blood, driving, flying), which is consequently either strenuously avoided or endured with marked distress. See SPECIFIC PHOBIA. See also SOCIAL PHOBIA. —**phobic** *adj.*

**phobic anxiety** anxiety that focuses on or is directed toward objects or situations (e.g., insects, telephone booths, open areas) that represent the real fear but pose little if any actual danger themselves.

**phobic attitude** a behavior pattern apparently characterized by disruptions in the awareness of and attention to experience in the present. An example is engaging in a fantasy of the future to escape a painful present reality. [defined by German-born U.S. psychiatrist Frederick (Fritz) S. Perls (1893–1970)]

**phobic avoidance** the active evasion of feared objects or situations by individuals with phobias.

**phobic character** in psychoanalytic theory, an individual who tends to deal with anxiety by extreme or fearful avoidance. [first used in 1945 by Austrian psychoanalyst Otto Fenichel (1897–1946)]

**phocomelia** *n.* congenital absence of the proximal portion of a limb or limbs, the hands or feet being attached to the trunk by a small, irregularly shaped bone.

**Phoenix House** an organization devoted to the treatment and prevention of substance abuse in adolescents and adults. Phoenix House offers both residential and outpatient programs, as well as other services related to or in support of the treatment process. See also THERAPEUTIC COMMUNITY.

**phon** *n.* see LOUDNESS.

**phon-** *combining form* see PHONO-.

**phonasthenia** *n.* **1.** voice fatigue, which may be attributable to overuse, general weakness, or old age. **2.** see BREATHY VOICE.

**phonation** *n.* the production of VOICED sounds by means of vibrations of the vocal cords.

**phone** *n.* a single speech sound.

**phoneme** *n.* in linguistics, a speech sound that plays a meaningful role in a language and cannot be analyzed into smaller meaningful sounds, conventionally indicated by slash symbols: /b/. A speech sound is held to be meaningful in a given language if its contrast with other sounds is used to mark distinctions of meaning. In English, for example, /p/ and /b/ are phonemes because they distinguish between [pan] and [ban] and other such pairs (see MINIMAL PAIR). —**phonemic** *adj.*

**phoneme–grapheme correspondence** the relationship between PHONEMES and their graphic representation (see GRAPHEME) in a particular language. A high level of regularity in this correspondence is thought to facilitate early reading.

**phonemic awareness** the ability to recognize and distinguish between the different PHONEMES in spoken words. It is a subcategory of PHONOLOGICAL AWARENESS.

**phonemic disorder** a disturbance involving PHONEMES, the speech sounds that distinguish words from one another.

**phonemic restoration effect** a psycholinguistic phenomenon whereby a person listening to speech recordings in which PHONEMES have been replaced by white noise or have otherwise been made inaudible does not notice the interruption. It is assumed that the listener's perceptual mechanism must have restored the missing phonemes. This is considered strong evidence for an active process of speech perception.

**phonemics** *n.* the branch of linguistics concerned with the classification and analysis of the PHONEMES in a language. Whereas PHONETICS tries to characterize all possible sounds represented in human language, phonemics identifies which of the phonetic distinctions are considered meaningful within a given language. See EMIC–ETIC DISTINCTION.

**phonetics** *n.* the branch of linguistics that studies the physical properties of speech sounds and the physiological means by which these are produced and perceived (placing the tongue or lip in contact with the teeth, directing the airstream against the hard palate, etc.). See EMIC–ETIC DISTINCTION.

**phonetic symbolism** the hypothesis that there is a correspondence of some kind between the sounds of words and their REFERENTS, as opposed to an arbitrary relationship. Most schools of modern linguistics are based on the premise that words are essentially ARBITRARY SYMBOLS, the only exceptions being a small number of onomatopoeic coinages (see ONOMATOPOEIA). However, it is an observable fact that most languages contain clusters of words (mainly monosyllables) in which a similarity of sound seems to reflect a similarity of reference; an example in English would be the large cluster *track, trail, train, trapse, tramp, travel, trawl, tread, trek, trip, trot, truck, trudge*, and so on. Believers in phonetic symbolism would argue that, for English speakers (at least), the sound [tr] and the physical actions involved in articulating it must have a deep psychological correspondence with the ideas of travel and laborious movement. Others would dismiss such speculations entirely, arguing that these word clusters can be explained by shared etymology, simple association of ideas, and coincidence. Also called **sound symbolism**.

**phonics** *n.* **1.** a method of teaching reading, popularly known as **sounding out**, that concentrates on the sounds of the letters or letter combinations in a word rather than on the word as a unit. The speaker or reader thus tries to match GRAPHEMES and PHONEMES. Also called **phonics method**. Compare WHOLE-WORD METHOD. **2.** a former name for ACOUSTICS.

**phonism** *n.* a form of SYNESTHESIA in which a sensation of hearing is effected through another sense—that is, by something that is seen, smelled, tasted, or felt.

**phono-** (**phon-**) *combining form* voice, speech, or sound.

**phonogram** *n.* a graphic or symbolic representation of a phoneme, syllable, or word.

**phonological awareness** the ability to recognize and distinguish between the sounds used in spoken language, including syllables, rhymes, and PHONEMES. See also PHONEMIC AWARENESS.

**phonological buffer** see PHONOLOGICAL LOOP.

**phonological disorder** in *DSM–IV–TR*, a communication disorder characterized by failure to develop and consistently use speech sounds that are appropriate for the child's age. It most commonly involves misarticulation of the later

acquired speech sounds, such as [l], [r], [s], [z], [ch], [sh], or [th] (see LALLING; LISP), but it may also include substitution of sounds (e.g., [t] for [k]) or omission of sounds (e.g., final consonants). These problems are not due to, or are in excess of those normally associated with, hearing loss, structural deficits in the mechanism of speech production (e.g., cleft palate), or a neurological disorder. In *DSM-5*, phonological disorder is termed **speech sound disorder**. Formerly called **developmental articulation disorder**.

**phonological dysgraphia** an impaired ability or an inability to sound out words or write them phonetically.

**phonological dyslexia** a form of acquired DYSLEXIA characterized primarily by difficulties in reading pronounceable nonwords. Semantic errors are not seen in this type of dyslexia, a feature that distinguishes it from DEEP DYSLEXIA. Phonological dyslexia manifested as a form of DEVELOPMENTAL DYSLEXIA has also been described. See also SURFACE DYSLEXIA. [first described in 1979 by Marie-France Beauvois and Jacqueline Derouesné]

**phonological loop** in the model of WORKING MEMORY proposed in 1974 by British cognitive psychologists Alan D. Baddeley (1934– ) and Graham J. Hitch (1946– ), a component that holds and manipulates auditory information over short intervals of time. For example, if one tried to remember a telephone number by repeating it over and over in the few moments before dialing, this effort would take place in the phonological loop. It comprises a **phonological store** or **phonological buffer** (or **acoustic** or **articulatory store**) within which memory traces fade after 2 seconds unless an **articulatory control process** (or **articulatory rehearsal system**) refreshes them by subvocal REHEARSAL. The phonological store thus acts as an “inner ear” by remembering speech sounds in their temporal order, whereas the articulatory control process acts as an “inner voice” by repeating the series of words on a loop to prevent them from decay. Additionally, it has been suggested that the phonological loop is important to reading comprehension and may in fact function primarily as a language learning device, rather than a mechanism for the memorization of familiar words. Other components of the Baddeley and Hitch working memory model include the VISUOSPATIAL SKETCHPAD, the CENTRAL EXECUTIVE, and the more recently introduced EPISODIC BUFFER. Also called **articulatory loop**.

**phonological paraphasia** see LITERAL PARAPHASIA.

**phonological recoding** the use of reading skills to translate written symbols into sounds and words.

**phonological store** see PHONOLOGICAL LOOP.

**phonology** *n.* the branch of linguistics that studies the system of speech sounds in a language or in language generally. The term is less specific than either PHONEMICS or PHONETICS. —**phonological** *adj.*

**phonopathy** *n.* an obsolescent name for any voice disorder.

**phonopsia** *n.* see CHROMATIC AUDITION.

**phonosurgery** *n.* surgical intervention to maintain or improve the voice or the ease with which phonation occurs, such as the removal of polyps from the vocal cords or THYROPLASTY.

**phoria** *n.* the position of the two eyes when a target is viewed binocularly and appears as a single image. The term is most commonly used as part of compound words to de-

scribe changes in eye position that occur when images from the two eyes cannot be fused, such as ESOPHORIA and EXOPHORIA.

**phosphene** *n.* a sensation of a light flash (as in “seeing stars”) in the absence of actual light stimulation to the eye. It may occur with the eyes closed and can be caused by mechanical stimulation of the retina, by rubbing the eyes, or by direct stimulation of the visual cortex. Also called **visual phosphene**. See also PHOTOPSIA.

**phosphoinositide** *n.* any of a class of SECOND MESSENGERS that are common in postsynaptic cells. See INOSITOL PHOSPHATES.

**phosphorylation** *n.* the addition of one or more phosphate groups (PO<sub>4</sub>) to a molecule (e.g., a protein). See also KINASE.

**photic driving** the effect in which the electrical activity of cortical neurons, as measured via ELECTROENCEPHALOGRAPHY, is altered by rhythmically presented light stimuli, such that the frequency of the activity becomes synchronized with the flashing or pulsing of the photic stimulation. See also RHYTHMIC STIMULATION.

**photism** *n.* 1. a false perception or hallucination of light. See PHOTOPSIA. 2. a form of SYNESTHESIA in which light or color sensations occur in response to stimulation of other senses (e.g., hearing).

**photo-** (**phot-**) *combining form* 1. light (e.g., PHOTOTAXIS). 2. photography (e.g., PHOTOCOUNSELING).

**photoaging** *n.* the cumulative effect during a person's life of exposure of the skin to sunlight, which can manifest as wrinkling or skin damage caused by ultraviolet radiation.

**photobiology** *n.* the study of the effects of light on organisms, including the more specific study of the effects of color on mood, cognition, physiology, and behavior and the use of color in treating a variety of disorders (**chromotherapy**). —**photobiological** *adj.* —**photobiologist** *n.*

**photocoagulation** *n.* the use of radiant energy, usually in the form of a laser or xenon-arc beam, to condense protein material in a tissue. Photocoagulation is used in the treatment of detached retina after surgery, benign skin tumors, and degeneration of peripheral tissues.

**photocounseling** *n.* the use of photographs or other images (e.g., DVDs) depicting aspects of a client's life to obtain insight into his or her behavior and needs and also to increase the rapport between the client and the therapist.

**photogenic epilepsy** a form of REFLEX EPILEPSY in which seizures are precipitated by a particular kind of visual aberration, such as a flickering light.

**photographic memory** exceptionally detailed and highly accurate recollection of information or visual experiences. Photographic memory is widely but mistakenly considered synonymous with an EIDETIC IMAGE.

**photoma** *n.* a visual hallucination in which sparks or light flashes are seen in the absence of external stimuli. See also PHOSPHENE; PHOTOPSIA.

**photomania** *n.* 1. an abnormal craving for light, particularly sunlight. See also SEASONAL AFFECTIVE DISORDER. 2. the practice of sun worship.

**photometer** *n.* a device that measures the intensity of light, taking into account the sensitivity of the human vis-

ual system to light of different wavelengths. This measurement is different from that of the amount of energy produced by a light source.

**photometry** *n.* the measurement of the intensity of light.

**photon** *n.* 1. an individual quantum of electromagnetic radiation (e.g., visible light). 2. a former name for TROLAND.

**photoperiodism** *n.* the behavioral and physiological reactions of nonhuman animals and plants to changes in the length of days or in the intensity of light in the environment. Photoperiodism in animals is involved in the timing of seasonal migration behavior, reproductive cycles, changes in plumage or pelage, and hibernation. The shedding of leaves in autumn and winter dormancy are signs of photoperiodism in plants. Behavior affected by photoperiodism is usually in response to the direction of change in day length (i.e., increasing or decreasing) rather than absolute day length.

**photophobia** *n.* an extreme and often painful sensitivity to light. It may be associated with migraine headaches or with certain types of brain trauma. —**photophobic** *adj.*

**photopic** *adj.* relating to vision in conditions of bright illumination, especially daylight.

**photopic luminosity** the relative effectiveness of various wavelengths of light for visual acuity under light-adapted conditions.

**photopic-sensitivity curve** a graph of visual threshold as a function of wavelength under light-adapted conditions. The peak of the human photopic-sensitivity curve falls at approximately 555 nm, which means that less stimulus energy is needed for detection at this wavelength than at any other wavelength under daylight conditions. See PHOTOPIC VISION.

**photopic stimulation** visual stimulation under daylight conditions.

**photopic vision** the type of vision associated with light levels during daylight. Photopic vision is mediated by RETINAL CONES, whereas vision at twilight and at night is mediated by RETINAL RODS. Also called **daylight vision**. Compare SCOTOPIC VISION.

**photopigment** *n.* a substance in a RETINAL ROD or RETINAL CONE that interacts with light to initiate a chemical cascade resulting in the conversion of light energy into an electrical signal. All rods contain the photopigment RHODOPSIN, whereas cones have one of three different photopigments (IODOPSINS), each with a different wavelength sensitivity (see LONG-WAVELENGTH PIGMENT; MEDIUM-WAVELENGTH PIGMENT; SHORT-WAVELENGTH PIGMENT). Photopigment is located in disks of membrane in the outer segment of a rod or cone. Also called **visual pigment**.

**photopsia** *n.* visual sensations in the absence of external visual stimuli, which can be unstructured (see PHOSPHENE) or structured. Structured photopsia consists of regular achromatic or chromatic visual patterns (e.g., circles, squares, diamonds) and is caused by pathological activation of prestriate cortical neurons. See also VISUAL HALLUCINATION. Also called **photopsy**.

**photopsin** *n.* any of three different proteins found, in combination with 11-*cis* retinal, in RETINAL CONES. See IODOPSIN.

**photoreceptor** *n.* a visual receptor: a RETINAL ROD or a RETINAL CONE.

**photosensitivity** *n.* sensitivity to light, especially sunlight, as occurs in ALBINISM and PHOTOGENIC EPILEPSY. Conditions marked by increased sensitivity to the effects of sunlight on the skin include systemic LUPUS ERYTHEMATOSUS and XERODERMA PIGMENTOSUM. Photosensitivity may occur as an adverse reaction to certain drugs, such as the phenothiazines (e.g., chlorpromazine), carbamazepine, St. John's wort, thiazides, sulfonamides, hallucinogens, and tetracyclines. In such cases, it often takes the form of a rash or other skin reaction. Photosensitivity may also be an immune reaction in some individuals who manifest allergic symptoms after exposure to intense light. —**photosensitive** *adj.*

**phototaxis** *n.* movement toward or away from a light source. Positive phototaxis is movement toward light; negative phototaxis is movement away from light. Some insects display a relationship between muscular activity and light orientation. When the left eye of a fly or bee is shaded or blinded, the legs on the left side of the body work to keep the body turned toward the light that can be seen only with the right eye. See also TAXIS.

**phototherapy** *n.* exposure to ultraviolet or infrared light used for treating certain medical conditions (e.g., jaundice, psoriasis), depression, and other disorders. For example, in phototherapy for SEASONAL AFFECTIVE DISORDER, a specially designed lamp that delivers 5,000 to 10,000 lx of light is shone on the retina, and a signal is transmitted via the optic nerve to the pineal gland, which secretes MELATONIN in response to darkness. Inhibition of melatonin release by bright light relieves the symptoms of SAD. Also called **bright light therapy**.

**phototropism** *n.* an orienting response, especially of a plant, either toward (positive phototropism) or away from (negative phototropism) light. It is distinct from PHOTOTAXIS, which is active movement of an organism in response to light. See also TROPISM. —**phototropic** *adj.*

**PHR** abbreviation for POINT-HOUR RATIO.

**phrase** *n.* a constituent of a sentence that is larger than a word but smaller than a CLAUSE. Phrases can be classified as noun phrases, verb phrases, prepositional phrases, and so on, according to their function within the clause. —**phrasal** *adj.*

**phrase marker** see BRANCHING.

**phrase-structure grammar (PSG)** a type of GENERATIVE GRAMMAR in which a system of **phrase-structure rules** (or **rewrite rules**) is used to describe a sentence in terms of the grammatical structures that generate its form and define it as grammatical. In practice, such a description will also be a CONSTITUENT analysis of the sentence in question. The phrase-structure rules used in this type of analysis are usually set out in the form  $X \rightarrow Y + Z$ , in which the arrow is an instruction to reformulate ("rewrite")  $X$  in terms of its immediate constituents ( $Y + Z$ ). For example, the sentence *The dogs chase the cats* can be described by the following set of rules:

sentence (S)  $\rightarrow$  noun phrase (NP) + verb phrase (VP)  
 NP  $\rightarrow$  determiner (det) + noun (N)  
 VP  $\rightarrow$  verb (V) + NP  
 det  $\rightarrow$  *the*  
 N  $\rightarrow$  *cats, dogs*  
 V  $\rightarrow$  *chase*

The same set of rules could also be shown pictorially as a

tree diagram or phrase marker (see BRANCHING). In the late 1950s, formal phrase-structure analysis of this kind was developed by Noam CHOMSKY, who also pointed out its limitations as a description of how language works. Chomsky's TRANSFORMATIONAL GENERATIVE GRAMMAR added an important new dimension by proposing that sentences have a DEEP STRUCTURE as well as the linear SURFACE STRUCTURE described in phrase-structure grammar and that the relationship between the two levels can be described through a system of transformational rules.

**phratry** *n.* a social unit with common kinship bonds, typically composed of multiple CLANS claiming UNILATERAL DESCENT. See DESCENT GROUP.

**phrenic nerve** a nerve that originates in the CERVICAL PLEXUS of the neck and sends sensory and motor branches to the heart, diaphragm, and other parts of the chest and abdomen.

**phreno- (phren-)** *combining form* mind or brain.

**phrenology** *n.* a theory of personality formulated in the 18th and 19th centuries by German physician Franz Josef Gall (1757–1828) and Austrian philosopher and anatomist Johann Kaspar Spurzheim (1776–1832). It stated that specific abilities or personality traits are represented by specific areas of the brain: The size of these brain areas determines the degree of the corresponding skill or trait. Proponents of the theory argued that the size of such locations could be indicated by bumps and hollows on the skull surface, based on the observation that the contours of the brain follow the skull contours. Although wrong in most respects, the theory suggested the idea of LOCALIZATION OF FUNCTION. Also called **craniology**. See also PHYSIOGNOMY. —**phrenological** *adj.* —**phrenologist** *n.*

**phthalate** *n.* a chemical compound that is used to soften plastics and that may be found in medications, foods, toys, cosmetics, paints, inks, lubricants, and many other products. Exposure to phthalates has been associated with premature births, reduced sex and thyroid hormones, and decreased sperm quality. Due to health concerns, the use of certain phthalates has been banned from toys in the United States. See also ENDOCRINE DISRUPTOR.

**phthinoid** *adj.* denoting a variety of the asthenic constitutional body type in KRETSCHEMER TYPOLOGY in which the physique is underdeveloped and usually characterized by a flat, narrow chest.

**phthisic type** a body type characterized as slender and flat-chested, as from a wasting disease such as tuberculosis (which was formerly called **phthisis**). See CARUS TYPOLOGY.

**phylogenetic principle** the now disproven theory that ONTOGENY recapitulates PHYLOGENY in the development of an organism: In humans, this supposes that human life, across development from embryo to adult, repeats the stages of organic and social evolution.

**phylogeny** *n.* 1. the evolutionary origin and development of a particular group of organisms. Also called **phylogenesis**. Compare ONTOGENY. 2. a diagram that shows genetic linkages between ancestors and descendants. Also called **phylogenetic tree**. —**phylogenetic** *adj.*

**phylum** *n.* (*pl.* **phyla**) in BIOLOGICAL TAXONOMY, a main subdivision of a KINGDOM, containing a group of similar, related CLASSES.

**psychiatrics (psychiatry)** *n.* see PHYSICAL MEDICINE AND REHABILITATION.

**physical abilities** personal characteristics such as strength, speed, and agility that are associated with one's physique or bodily attributes.

**physical abuse** deliberately aggressive or violent behavior by one person toward another that results in bodily injury. Physical abuse may involve such actions as punching, kicking, biting, choking, burning, shaking, and beating, which may at times be severe enough to result in permanent damage (e.g., TRAUMATIC BRAIN INJURY) or death. It is most frequently observed in relationships of trust, particularly between parents and children or between intimate partners (e.g., in a marriage); indeed, violence against women and children in these types of relationships is recognized as a major public health problem, although few effective interventions to reduce its occurrence have yet been developed. Individuals who experience physical abuse often feel helpless and isolated and are prone to the subsequent development of numerous pathological conditions, including depression, eating disorders, posttraumatic stress disorder, anxiety disorders, and substance use problems. There is significant controversy over whether certain common forms of physical discipline (e.g., spanking) that are neither malicious nor meant to inflict harm could be construed as overly harsh and thus considered to be physical abuse. See also BATTERED-CHILD SYNDROME; BATTERED-WOMAN SYNDROME; DOMESTIC VIOLENCE; INTIMATE PARTNER VIOLENCE.

**physical activity** any bodily movement produced by contraction of skeletal muscle that increases energy expenditure above the basal level.

**physical age** see ANATOMICAL AGE.

**physical anthropology** see ANTHROPOLOGY.

**physical dependence** the state of an individual who has repeatedly taken a drug and experiences unpleasant physiological symptoms (see SUBSTANCE WITHDRAWAL) if he or she discontinues its use. Also called **physiological dependence**. Compare PSYCHOLOGICAL DEPENDENCE.

**physical determinism** the type of DETERMINISM presumed to operate among physical objects in the natural world. In psychology, physical determinism is the assumption that psychological events and behaviors have physical causes and can be described in terms of models and theories borrowed from the physical sciences. See HARD DETERMINISM; PSYCHOLOGICAL DETERMINISM. See also STATISTICAL DETERMINISM.

**physical disorder** a synonym for ORGANIC DISORDER. See also SOMATIC DISORDER.

**physical examination** an assessment of the body and its specific functions, generally by a physician or other health care professional, using inspection, palpation, percussion, and auscultation. It also frequently includes laboratory tests and other forms of screening for various physiological abnormalities, malfunctions, and diseases.

**physical extension device** a piece of equipment or mechanism that extends the reach of an individual with a disability. See HEADSTICK; MOUTHSTICK.

**physicalism** *n.* 1. the doctrine that reality is composed of matter and that mind is therefore reducible to matter. See IDENTITY THEORY; MATERIALISM; MIND–BODY PROBLEM. 2. the view that all meaningful propositions can be stated in the language of the physical sciences and in operational definitions. See LOGICAL POSITIVISM; POSITIVISM. —**physicist** *adj.*



**physical map** a type of chromosome map that depicts the actual physical location of genes and genetic markers on the chromosome, with distances measured in base pairs, kilobases, or similar units. Various techniques are used in constructing physical maps, including positional cloning and DNA sequencing. The HUMAN GENOME PROJECT has provided a complete physical map of all human chromosomes. See also GENE MAPPING.

**physical medicine and rehabilitation** the branch of medicine that specializes in the diagnosis and treatment of physical impairments and disability and that emphasizes the use of therapeutic exercise, massage, pain management, and medical devices such as prostheses, braces, or other daily living aids to improve patient functioning. Also called **physiatrics**; **physiatry**; **rehabilitation medicine**.

**physical modality** a therapeutic intervention that involves the use of a physical agent, such as heat or ice, to treat bodily injury or pain.

**physical symbol system hypothesis** a proposition asserting that a necessary and sufficient condition for a computational system to exhibit general intelligent action is that it be a physical symbol system. "Necessary" means that any physical system that exhibits general intelligence will be an instance of a physical symbol system. "Sufficient" means that any physical symbol system can be organized further to exhibit general intelligent action. This hypothesis has been a driving factor for much research in ARTIFICIAL INTELLIGENCE and COGNITIVE SCIENCE. [proposed in 1976 by U.S. cognitive and computer scientist Allen Newell (1927–1992) and Herbert A. SIMON]

**physical therapy (PT)** 1. the treatment of pain, injury, or disease using physical or mechanical methods, such as exercise, heat, water, massage, or electric current (diathermy). The treatment is administered by a trained **physical therapist**. Also called **physiotherapy**. 2. a branch of medicine and health care that identifies, corrects, alleviates, and prevents temporary, prolonged, or permanent movement dysfunction or physical disability.

**physician assistant (PA)** a licensed professional who provides health care services under the direction of a supervising physician.

**physician-assisted suicide** see ASSISTED DEATH.

**physician–hospital organization (PHO)** an organization formed, owned, and governed by one or more hospitals and physician groups to obtain payer contracts and to further mutual interests.

**physiogenic** *adj.* pertaining to a disorder that is physiological in origin.

**physiognomic perception** the tendency to see expressive properties in objects, such that, for example, dark objects may be perceived as gloomy or bright ones may be perceived as happy. Initially described by Heinz WERNER in children, this perceptual tendency has since been investigated by others in adults.

**physiognomy** *n.* 1. the form of a person's physical features, especially the face. 2. the attempt to read personality from facial features and expression, assuming, for example, that a person with a receding chin is weak or one with a high forehead is bright. The idea dates back to ARISTOTLE and was later developed into a pseudoscientific system by Johann LAVATER and subsequently by Italian criminologist and psychiatrist Cesare Lombroso (1835–1909). Also

called **physiognomics**. See also CHARACTEROLOGY; CRIMINAL ANTHROPOLOGY; PHRENOLOGY.

**physiological age** a measurement of the level of development, health, or deterioration of an individual in terms of functional norms for various body systems.

**physiological antagonism** see ANTAGONIST.

**physiological arousal** aspects of AROUSAL shown by physiological responses, such as increases in blood pressure and rate of respiration and decreased activity of the gastrointestinal system. Such primary arousal responses are largely governed by the SYMPATHETIC NERVOUS SYSTEM, but responses of the PARASYMPATHETIC NERVOUS SYSTEM may compensate or even overcompensate for the sympathetic activity. Physiological arousal includes but is not limited to SEXUAL AROUSAL. See also AUTONOMIC NERVOUS SYSTEM.

**physiological assessment** evaluation of the function of the body, a tissue, or an organ, including physical and chemical factors and processes.

**physiological correlate** an association between a physiological measure and a behavioral measure. The existence of a physiological correlate may suggest a causal relation, but it does not establish a cause.

**physiological cycle** a series of regularly recurring changes in body activities, such as the SLEEP–WAKE CYCLE. See also BIOLOGICAL RHYTHM.

**physiological dependence** see PHYSICAL DEPENDENCE.

**physiological factors** factors pertaining to the functions of a living organism and its parts as well as to the chemical and physical processes involved in this functioning.

**physiological measure** any of a set of instruments that convey precise information about an individual's bodily functions, such as heart rate, skin conductance, skin temperature, cortisol level, palmar sweat, and eye tracking. Studies using these tools typically obtain measurements before and after the introduction of a stimulus condition as a way to document an individual's response to that stimulus.

**physiological motive** a motive resulting from a basic PHYSIOLOGICAL NEED, such as the need for food. See also DEFICIENCY MOTIVE.

**physiological need** any of the requirements for survival, such as food, water, oxygen, and sleep. Physiological needs make up the lowest level of MASLOW'S MOTIVATIONAL HIERARCHY. Also called **basic need**; **fundamental need**. Compare PSYCHOLOGICAL NEED. See also PRIMARY NEED.

**physiological nystagmus** the normal small, rapid movement of the eyes that permits sustained viewing of a scene. Compare VESTIBULAR NYSTAGMUS.

**physiological paradigm** the concept that mental disorders are caused by abnormalities in neurological structures and processes. This perspective, which underlies the field and practice of psychiatry, holds that mental disorders can be treated with drugs, surgery, or other techniques ordinarily used to correct malfunctioning of the body.

**physiological psychology** a term used interchangeably with BIOLOGICAL PSYCHOLOGY or PSYCHOPHYSIOLOGY.

**physiological response specificity** the principle that an individual's physiological responses to a range of

different stimuli will be of the same type. For example, one individual may tend to respond to many different stimuli with increases in heart rate, whereas another individual may respond to the same stimuli with breathing changes. [proposed by U.S. psychophysicologist John I. Lacey (1915–2004)]

**physiological saline** a mixture of water and salt (sodium chloride) in which the concentration of salt is 0.9% w/v, approximately equal in OSMOLARITY to mammalian extracellular fluid. Also called **normal saline**.

**physiological zero** the temperature at which an object in contact with the skin feels neither warm nor cold. Physiological zero is about 32 °C (90 °F) for an object in contact with the hands or feet.

**physiologic nonepileptic seizure** see NONEPILEPTIC SEIZURE.

**physiology** *n.* 1. the science of the functions of organisms, including the chemical and physical processes involved and the activities of the cells, tissues, and organs, as opposed to static anatomical or structural factors. 2. the processes and functions characteristic of or identifiable in a particular organism. —**physiological** *adj.* —**physiologist** *n.*

**physiopathology** *n.* the study of PATHOPHYSIOLOGY.

**physiotherapy** *n.* see PHYSICAL THERAPY. —**physiotherapist** *n.*

**physique type** the basic physical structure, build, and body type of an individual, particularly as related to his or her CONSTITUTIONAL TYPE.

**physostigmine** *n.* a CHOLINERGIC DRUG—an alkaloid derived from the dried seed of an African vine—used in the treatment of glaucoma and to cause the pupil of the eye to contract. It is also employed as a cholinesterase inhibitor to reverse the toxic effects on the central nervous system of overdoses of ANTICHOLINERGIC DRUGS. U.S. trade names: **Antilirium**; **Isopto Eserine**.

**phytoestrogen** *n.* see ESTROGEN.

**PI** 1. abbreviation for prescribing information. See LABELING. 2. abbreviation for PROACTIVE INTERFERENCE. 3. abbreviation for progressive interval. See PROGRESSIVE-INTERVAL SCHEDULE.

**pia-arachnoid** *n.* the inner two coverings of the brain and spinal cord—the PIA MATER and ARACHNOID MATER—considered as a single structure. See MENINGES.

**Piagetian task** any of a variety of tasks developed by Jean PIAGET to assess the cognitive abilities of infants, children, or adolescents. Examples include, in infancy, OBJECT PERMANENCE tasks and DEFERRED IMITATION; in childhood, CONSERVATION, tests of perceptual perspective taking (e.g., the THREE-MOUNTAINS TEST), and CLASS INCLUSION; and in adolescence, the PENDULUM PROBLEM.

**Piagetian theory** the theory proposed by Jean PIAGET that a child's cognitive development occurs in four major stages. In the SENSORIMOTOR STAGE (roughly 0–2 years of age), the child develops from a newborn capable only of basic reflexes (e.g., sucking, eye movements) to an infant with increasingly complex repetitive behavior (CIRCULAR REACTION) that eventually becomes goal directed; between 8 and 18 months of age, the child gradually develops the ability to recognize OBJECT PERMANENCE, and at around 18 months, the child begins to engage in problem solving and

other forms of MENTAL COMBINATION. During the PREOPERATIONAL STAGE (roughly 2–7 years), the child is both egocentric, showing little awareness of the perspective of others, and single-minded (see CENTRATION); language and rudimentary number-system abilities develop as the child becomes able to understand symbols and to represent experience symbolically through speech, movement, or other means (see SYMBOLIC FUNCTION). The CONCRETE OPERATIONAL STAGE (roughly 7–12 years) is characterized by the development of more logically and conceptually based thinking and by a move away from egocentrism toward a decentered understanding of others' perceptions and of multiple aspects of a problem or situation (see DECENTRATION); children in this stage become capable of such mental operations as REVERSIBILITY, CATEGORIZATION, and CONSERVATION. Finally, in the FORMAL OPERATIONAL STAGE (roughly 12 years and beyond), abstract logical reasoning (i.e., HYPOTHETICO-DEDUCTIVE REASONING) and moral reasoning develop.

According to this theory, each stage builds on the preceding one. Piaget held that although the age of onset for each stage might vary because of cultural and historical factors, the order of the stages (DÉCALAGE) is the same for all cultures. He did not believe it was feasible to hurry children through the unfolding of these stages. Passage through them is facilitated by a balance of two processes: **assimilation**, in which new information is incorporated into an already existing cognitive structure (SCHEMA or SCHEME); and **accommodation**, in which already existing structures are changed to accommodate new information. Piaget also proposed a stage theory of moral development (see AUTONOMOUS STAGE; HETERONOMOUS STAGE; PREMORAL STAGE).

**pia mater** a delicate membrane that covers the surface of the brain and spinal cord; it is the innermost layer of the three MENINGES. The cranial portion of the pia mater is richly supplied with blood vessels and closely follows the contours of the cerebral cortex, extending into the fissures and sulci.

**p.i. basis** abbreviation for per-inquiry basis. See COUPON-RETURN TECHNIQUE.

**piblokto** *n.* a CULTURE-BOUND SYNDROME observed primarily in female Inuit and other arctic populations. Individuals experience a sudden dissociative period of extreme excitement in which they often tear off clothes, run naked through the snow, scream, throw things, and perform other wild behaviors. This typically ends with convulsive seizures, followed by an acute coma and amnesia for the event. Also called **arctic hysteria**; **pibloktoq**.

**pica** *n.* a rare eating disorder marked by a persistent craving for unnatural, nonnutritive substances, such as plaster, paint, hair, starch, or dirt. In DSM-IV-TR, it is classified with the FEEDING AND EATING DISORDERS OF INFANCY OR EARLY CHILDHOOD; in DSM-5, it falls within a broader category of feeding and eating disorders that can affect individuals at any age. Onset of the disorder does, however, most commonly occur in children, and it can have serious consequences, depending on the substance ingested. For example, lead pica, often found in children living in older housing with lead paint, can result in irreversible mental impairment. Studies on rats and monkeys have also demonstrated that lead pica can be induced by calcium deficiency. Animals with normal nutrition learn that lead ingestion is aversive, but calcium-deficient animals do not learn aversions to lead.

**Pick's disease** a type of FRONTOTEMPORAL DEMENTIA marked by progressive degeneration of the frontal and temporal areas of the brain and by the presence of particles called **Pick bodies** in the cytoplasm of the neurons. The disease is characterized by personality changes and deterioration of social skills and complex thinking; symptoms include problems with new situations and abstractions, difficulty in concentrating, loss of memory, lack of spontaneity, gradual emotional dullness, loss of moral judgment, and disturbances of language. [described in 1892 by Arnold Pick (1851–1924), Czech psychiatrist and neuroanatomist]

**Pickwickian syndrome** a syndrome in people with MORBID OBESITY that is associated with SLEEP APNEA, cyanosis, congestive heart failure, and muscle twitching and is thought to result from the physical pressure of extreme weight on the respiratory system. The name of the syndrome is derived from the character of Joe the Fat Boy, who constantly falls asleep in Charles Dickens's *Pickwick Papers* (1836–1837).

**picrotoxin** *n.* a CNS STIMULANT derived from the berries of a southeast Asian shrub, *Anamirta cocculus*. Originally used as a fish poison, picrotoxin was introduced in the 1930s as a therapy for barbiturate overdose. It is a convulsant agent and acts as a GABA ANTAGONIST by binding to a specific site on the GABA<sub>A</sub> receptor complex, blocking the effects of GABA agonists (e.g., the benzodiazepines). Picrotoxin has no modern clinical applications but may be used to induce seizures in nonhuman animals for research purposes.

**pictophilia** *n.* sexual interest in and arousal by viewing erotic pictures or films, alone or with a partner.

**pictorial imagery** see VISUAL IMAGERY.

**pictorial realism** a design principle holding that images on a visual display should match the MENTAL MODEL of the viewer. For example, in machine design, a fluid-level indicator that communicates changing levels by moving a fluid-level image up and down has pictorial realism; the viewer knows exactly what the image is communicating. In contrast, a fluid-level indicator that moves left to right is not designed on this basis and is likely to be less effective.

**picture-anomalies test** a type of nonverbal test in which the task is to detect absurdities in cartoon pictures. It is used to assess visual-perception deficits caused by temporal lobe damage.

**picture-arrangement test** a subtest of the WECHSLER ADULT INTELLIGENCE SCALE, in which the participant is required to arrange in proper order a series of sketches that tell a brief story.

**picture-completion test** a type of test consisting of drawings of familiar objects with features missing. The task is to recognize and specify the missing parts. See also INCOMPLETE-PICTURES TEST.

**picture-interpretation test** a test in which the participant is asked to interpret a visual image (e.g., drawing, photograph, painting). This type of test may aid in the assessment of intelligence or personality traits.

**picture superiority effect** the tendency for a picture or drawing to be remembered better than the name of the pictured object. For example, people are more likely to remember "dog" if they see a drawing of a dog than if they see the word *dog*.

**picture-world test** a PROJECTIVE TECHNIQUE for children in which the participant composes a story about realistic scenes, adding objects or figures as he or she wishes. The child is instructed to picture either a world that actually exists or one that he or she would like to exist.

**pidgin** *n.* an improvised CONTACT LANGUAGE incorporating elements of two or more languages, often devised for purposes of basic commerce, such as trading. Pidgins are characterized by simple rules and limited vocabulary. Compare CREOLE.

**piecewise regression** a variant on ordinary LEAST SQUARES REGRESSION in which a REGRESSION LINE consisting of several different lines is fitted to the data. The several pieces have different slopes and meet at nodal points to form a continuous line. This approach is very useful for identifying abrupt changes or discontinuities in a process. For example, piecewise regression might be appropriate when a researcher is studying a group of participants before treatment, during treatment, and after treatment. Also called **segmented regression**.

**piecework** *n.* work for which employees are paid per unit of productivity. In a differential piece-rate system, the rate of compensation for each unit produced increases once the employee has surpassed the level of productivity that work studies determine to be the standard. See SCIENTIFIC MANAGEMENT.

**pie chart** a graphic display in which a circle is cut into wedges, with the area of each wedge being proportional to the percentage of cases in the category represented by that wedge. For example, a researcher might use a pie chart to present the results of a survey on the sources of psychology-related literature used by the general public, with each wedge representing the percentage of respondents citing a particular source, such as an advice column, the Internet, a self-help book, a popular magazine, and academic literature. A pie chart generally works best when there are not many categories (with thin wedges) being shown. A downside of the graphic is that it is not very efficient because it uses significant space to show the frequencies of a single variable.

**Pierre Robin sequence** a congenital condition present at birth that is characterized by micrognathia (abnormally small jaw) and a tongue that falls backward into the pharynx (glossoptosis), interfering with breathing and feeding. The condition may occur alone or with a variety of other symptoms, most commonly cleft palate, hearing loss, and language delays. Also called **Pierre Robin malformation**; **Pierre Robin syndrome**. [initially reported in 1923 by **Pierre Robin** (1867–1950), French pediatrician]

**pigeon breast** see PECTUS CARINATUM.

**pigment bleaching** the change in the photopigment RHODOPSIN that occurs when it absorbs photons. The color of the pigment changes from purple (**visual purple**) to a transparent light yellow (**VISUAL YELLOW**). See also VISUAL CYCLE.

**pigment epithelium** the single layer of pigmented cells that abuts the tips of the photoreceptors in the retina. The pigment in the cells reduces light scatter by absorbing photons that elude the PHOTOPIGMENTS in the photoreceptors. The pigment epithelium is also critical for the health of the photoreceptors because it phagocytoses (engulfs) discarded disks of membrane that are continually shed by the

photoreceptors. Also called **retinal pigment epithelium (RPE)**.

**pigment regeneration** the reconstitution of functional rhodopsin following PIGMENT BLEACHING after visual stimulation. See also VISUAL CYCLE.

**Pike's Peak model** a competencies-based approach to training professionals in the delivery of psychological services to older adults. The model provides nonmandatory guidelines that allow individuals from the doctoral to the postlicensure level of training to obtain professional development in this domain. [delineated during the 2006 National Conference on Training in Professional Geropsychology in Colorado Springs, Colorado]

**pilocarpine** *n.* an alkaloid derived from several tropical American plants but mainly from *Pilocarpus jaborandi*. Pilocarpine is a powerful parasympathomimetic agent, affecting postganglionic cholinergic receptors (see CHOLINERGIC DRUG). It is used in the treatment of glaucoma and to contract the pupil of the eye. U.S. trade names (among others): **Isopto Carpine**; **Pilocar**; **Pilostat**.

**pilocytic astrocytoma** see GLIOMA.

**piloerection** *n.* a temporary raising of the hairs covering the surface of the skin caused by contraction of the piloerector muscles, which are attached to the individual FOLLICLES from which each hair arises. Piloerection is involuntary, being directed by the SYMPATHETIC NERVOUS SYSTEM, and elicited by cold, fear, or a startling stimulus. In mammals with a thick, visible covering of hair (e.g., cats), piloerection serves a protective function: The resulting "fluffed up" appearance makes the animal seem larger and may deter attack by others. In humans, whose skin has only a sparse covering of hair, piloerection creates a temporary roughness as the muscles pucker the surrounding skin, giving rise to such colloquial names for the effect as **goose bumps**, **goose flesh**, and **goose pimples**. Also called **pilomotor response** (or **effect**).

**pilot selection** the assessment of a candidate to determine whether he or she possesses the aptitudes, dexterity, and psychomotor skills needed to become an aircraft pilot.

**pilot study** a small, preliminary study designed to evaluate procedures and measurements in preparation for a subsequent, more detailed research project. Although pilot studies are conducted to reveal information about the viability of a proposed project and to implement necessary modifications, they may also provide useful initial data on the topic of study and suggest avenues or offer implications for future research.

**Piltz's reflex** an automatic and involuntary increase in the size of the pupil when attending to an object or event. [Jan **Piltz** (1870–1931), Polish neurologist]

**pimozide** *n.* a conventional ANTIPSYCHOTIC of the diphenylbutylpiperidine class. Like other conventional antipsychotics, it blocks postsynaptic dopamine D2 receptors. In the United States, it is officially approved by the U.S. Food and Drug Administration only for the management of vocal and motor tics associated with Tourette's disorder, although it is widely used as an antipsychotic drug in Europe and South America. Pimozide has been associated with potentially lethal disturbances of heart rhythm, and it should not be used in patients with histories of arrhythmias or in doses exceeding 10 mg/day. Because pimozide has no apparent special advantages over similar antipsychotics that are less damaging to the heart (e.g., haloperidol), it should

be used to treat Tourette's disorder only if other medications have failed to produce the desired response. U.S. trade name: **Orap**.

**pincer grip** the manner of grasping an object between the thumb and forefinger. See also POWER GRIP; PRECISION GRIP.

**pineal gland** a small, cone-shaped gland attached by a stalk to the posterior wall of the THIRD VENTRICLE of the brain; it is part of the EPITHALAMUS. In amphibians and reptiles, the gland appears to function as a part of the visual system. In mammals, it secretes the hormone MELATONIN and is an important component of the circadian system regulating BIOLOGICAL RHYTHMS. Because it is an unpaired organ located in the middle of the brain, René DESCARTES believed it was the seat of the RATIONAL SOUL and the connection between mind and body. Also called **pineal body**.

**Pinel's system** a classification of mental disorders and symptoms outlined in the 18th century. The four major categories were melancholias, manias with delirium, manias without delirium, and dementia or mental deterioration. [Philippe **Pinel** (1745–1826), French psychiatrist]

**pink-collar worker** an employee who does what is traditionally considered women's work, such as being a teacher, secretary, nurse, day care worker, florist, or maid. Pink-collar jobs are often low in status, pay, and opportunities for advancement and are seen as echoing domestic responsibilities, thus reinforcing a sexual division of labor. Compare BLUE-COLLAR WORKER; WHITE-COLLAR WORKER.

**pink noise** see NOISE.

**pinna** *n.* (*pl.* **pinnae**) the funnel-shaped part of the external ear that projects beyond the head. Consisting of cartilage, it collects and focuses sounds toward the EXTERNAL AUDITORY MEATUS (auditory canal). Also called **auricle**.

**piperidinedione** *n.* any of a class of chemically related drugs formerly used for daytime sedation or the management of insomnia but no longer in common clinical use. Their mechanism of action and toxicity are similar to the BARBITURATES. The prototype of the class is GLUTETHIMIDE.

**Piper's law** the principle that for a uniformly stimulated retinal area peripheral to the fovea, the threshold for LUMINANCE is inversely proportional to the square root of the area stimulated. Compare RICCO'S LAW. [Hans Edmund **Piper** (1877–1915), German physiologist]

**piriform area** see PYRIFORM AREA.

**pitch** *n.* the subjective attribute that permits sounds to be ordered on a musical scale. The primary theories concerning the basis for pitch perception are the PLACE THEORY and the PERIODICITY THEORY. The MEL has been proposed as a quantitative measure of the extent of pitch perception.

**pitch discrimination** see AUDITORY DISCRIMINATION.

**pithiatism** *n.* a name (from Greek *pithanotes*, "persuasiveness") proposed in 1918 by French neurologist Joseph E. Babinski (1857–1932) as a substitute for HYSTERIA. It was based on the theory that some hysterical symptoms are produced by suggestion and can therefore be eliminated by suggestion.

**Pitres' rule** a generalization stating that when a multilingual person recovers from APHASIA caused by a stroke or cerebral injury, the language recovered first is usually the one most used by the person prior to the onset of the apha-

sia. Other languages are reestablished in a slower and often less complete manner. Also called **Pitres' law**. Compare RIBOT'S LAW. [proposed in 1895 by Jean Albert Pitres (1848–1927), French neurologist]

**pituitarism** *n.* disordered functioning of the pituitary gland, which may be overactive (hyperpituitarism) or underactive (hypopituitarism).

**pituitary adenoma** see ADENOMA.

**pituitary cachexia** see HYPOPHYSEAL CACHEXIA.

**pituitary gland** a gland (pea-sized in humans) that lies at the base of the brain and is connected by a stalk (the infundibulum) to the HYPOTHALAMUS. The pituitary gland is divided into an anterior and a posterior lobe, which differ in function. The anterior lobe (**adenohypophysis**) produces and secretes tropic hormones (i.e., thyroid-stimulating hormone, follicle-stimulating hormone, corticotropin, and luteinizing hormone), growth hormone, prolactin, and melanocyte-stimulating hormone in response to RELEASING HORMONES from the hypothalamus. The posterior lobe (**neurohypophysis**) secretes two hormones, vasopressin and oxytocin, which are synthesized in the hypothalamus and transported down axons in the infundibulum to the neurohypophysis in response to direct neural stimulation. The pituitary's role particularly in secreting tropic hormones, which regulate the production of other hormones, has resulted in its designation as the "master gland of the endocrine system." Also called **hypophysis**; **hypophysis cerebri**.

**pituitectomy** *n.* see HYPOPHYSECTOMY.

**pituri** *n.* an Australian shrub, *Duboisia hopwoodii*, whose leaves have traditionally been used for their stimulant, analgesic, and hallucinogenic effects by members of Aboriginal tribes. The primary active ingredient is NICOTINE. Although some indigenous peoples still use pituri, it was most popular during the 19th and early 20th centuries. The leaves were cured, powdered, and then rolled into a quid to be chewed or smoked.

**pity** *n.* a feeling of sorrow and compassion for people who are unhappy, suffering, or otherwise unfortunate or in distress.

**pivotal variable** a quantity that is a function of a statistic (e.g., sample mean, sample size) and a parameter (e.g., population mean, variance) and that is used in INFERENCE TESTS based on a NORMAL DISTRIBUTION. The Z SCORE, T SCORE, and F RATIO are all examples of pivotal variables.

**pivot grammar** a type of simple grammar displayed in the early stages of language development (especially the TWO-WORD STAGE). Pivot grammar is characterized by two-word utterances in which one word (the **pivot word**) is typically a FUNCTION WORD, such as a determiner or preposition, and the other (the **open word**) is a CONTENT WORD, such as a noun or verb. A small child has relatively few pivot words in his or her vocabulary but uses them often and always in the same position relative to the open word. Open words are used less frequently, but the child learns more of them and can use them anywhere in a phrase. *More juice, light off, and all gone* are typical examples of pivot grammar: *More, off, and all* are pivot words; *juice, light, and gone* are open words.

**PK** abbreviation for PSYCHOKINESIS.

**PKU** abbreviation for PHENYLKETONURIA.

**place attachment** feelings of connection or affiliation

with a geographic location that provides security and comfort and contributes to identity. Individually and collectively, people become attached to certain places, such as their homes or their neighborhoods. See also TERRITORIALITY.

**placebo** *n.* (*pl.* **placebos**) **1.** a pharmacologically inert substance, such as a sugar pill, that is often administered as a control in testing new drugs. Placebos used in double-BLIND trials may be DUMMIES or ACTIVE PLACEBOS. Formerly, placebos were occasionally used as diagnostic or psychotherapeutic agents, for example, in relieving pain or inducing sleep by suggestion, but the ethical implications of deceiving patients in such fashion makes this practice problematic. **2.** any medical or psychological intervention or treatment that is believed to be "inert," thus making it valuable as a control condition against which to compare the intervention or treatment of interest. See PLACEBO EFFECT.

**placebo control group** a group of participants in a study who receive an inert substance (placebo) instead of the active drug under investigation, thus functioning as a CONTROL GROUP against which to make comparisons regarding the effects of the active drug. See also PLACEBO EFFECT.

**placebo controlled trial** a clinical research design that incorporates a placebo control group. Compare ACTIVE CONTROL TRIAL.

**placebo effect** a clinically significant response to a therapeutically inert substance or nonspecific treatment (placebo), deriving from the recipient's expectations or beliefs regarding the intervention. It is now recognized that placebo effects accompany the administration of any drug (active or inert) and contribute to the therapeutic effectiveness of a specific treatment. For example, patients given a placebo to relieve headaches may report statistically significant reductions in headaches in studies that compare them with patients who receive no treatment at all. This term is also used more generally in nonclinical studies to indicate any effect arising from participants' expectations regarding the study.

**placebo group** see PLACEBO CONTROL GROUP.

**place cell** a neuron in the HIPPOCAMPUS that fires selectively when an animal is in a particular spatial location or moving toward that location. Place cells were first discovered in 1971.

**place conditioning** see CONDITIONED PLACE PREFERENCE.

**place learning** **1.** the learning of locations or physical positions of goals (e.g., where food can be found). Compare RESPONSE LEARNING. [defined by Edward C. TOLMAN] **2.** in conditioning, learning an association between a place and an unconditioned stimulus, such as food or poison. See CONDITIONED PLACE PREFERENCE.

**placement counseling** **1.** services designed to advise and assist individuals to find suitable or optimal employment. Placement counseling may include coaching or training for job interviews, procedures for filling out applications, and assistance with other activities relevant to obtaining a job. These services may be offered as part of the VOCATIONAL REHABILITATION of people with disabilities, or they may be provided to anyone in the general public who is searching for a job (e.g., recent college graduates, the long-term unemployed). **2.** in education, a service that pro-

vides guidance to students in deciding upon an appropriate educational program, class, or level of instruction. **3.** in foster care, services provided to help children and their adoptive parents adjust to adoptive placement.

**placement test** a test used by educational institutions to place students in classes appropriate to their abilities, achievements, and interests.

**placenta** *n.* the specialized organ produced by the mammalian embryo that attaches to the wall of the uterus to permit removal of waste products and to provide nutrients, energy, and gas exchange for the fetus via the maternal circulation. —**placental** *adj.*

**place theory** the theory that (a) sounds of different frequencies stimulate different places along the BASILAR MEMBRANE and (b) pitch is coded by the place of maximal stimulation. The first proposition is strongly supported by experimental evidence and stems from the fact that the mammalian auditory system shows TONOTOPIC ORGANIZATION. The second hypothesis remains controversial. See HELMHOLTZ THEORY. Compare PERIODICITY THEORY.

**Placidyl** *n.* a trade name for ETHCHLORVYNOL.

**placing** *n.* a reflex movement in which a baby lifts his or her foot onto a surface, which occurs during the first 3 months of life.

**plain English law** **1.** in some states in the United States, a law requiring attorneys to use less arcane, more comprehensible language in drafting documents. **2.** a law written in a way that strives for simplicity of expression. Plain English laws reduce reliance on legal jargon, enabling them to be more easily understood by the general public.

**plan** *n.* in cognitive psychology, a MENTAL REPRESENTATION of an intended action, such as an utterance or a complex movement, that is presumed to guide the individual in carrying it out. See PREPARATION.

**PLAN** acronym for PROGRAM FOR LEARNING IN ACCORDANCE WITH NEEDS.

**Planck's principle** the notion that new scientific theories do not gain acceptance by a systematic process of validation that convinces opponents of their truth. Instead, as opponents of a new theory grow old and die, they are replaced by a new generation of scientists, who were exposed to the theory early in their careers and have come to accept it. This notion is a direct challenge to both VERIFICATION and FALSIFICATIONISM. [Max **Planck** (1858–1947), German physicist]

**plan-continuation bias** the tendency of people to continue with an original course of action that is no longer viable. An example would be an airline pilot who unexpectedly encounters bad weather at the scheduled destination but decides to land anyway rather than divert to another location. Plan-continuation bias appears to be particularly strong toward the end of the activity and has been theorized to result from the interaction of such factors as COGNITIVE LOAD, TASK DEMANDS, and social influences. See also ENTRAPMENT.

**plane symmetry** see SYMMETRY.

**planned behavior** behavior that is under the organism's direct control, as opposed to REFLEXIVE BEHAVIOR. See THEORY OF PLANNED BEHAVIOR.

**planned comparison** see A PRIORI COMPARISON.

**planned group** see FORMAL GROUP.

**planned obsolescence theory** see GENETIC PROGRAMMING THEORY.

**Planned Parenthood Federation of America (PPFA)** an organization that promotes comprehensive reproductive and complementary health care services; advocates public policy that guarantees access to such services and the privacy and rights of individuals using them; and supports research and technology in reproductive health care, as well as education on human sexuality. The organization, which was founded as the American Birth Control League (ABCL) by U.S. birth control pioneer Margaret Sanger (1883–1966) in 1921, adopted its current name in 1942.

**planning fallacy** the tendency to underestimate the amount of time needed to complete a future task, due in part to the reliance on overly optimistic performance scenarios. [identified by Amos TVERSKY and Daniel KAHNEMAN]

**plantar reflex** the involuntary flexing of the toes of a healthy child when the sole of the foot is stroked. The plantar reflex appears around age 2 and replaces the earlier BABINSKI REFLEX.

**planum temporale** a region of the superior temporal cortex of the brain, adjacent to the primary AUDITORY CORTEX, that includes part of WERNICKE'S AREA. In most people, it is larger in the left cerebral hemisphere than in the right hemisphere.

**plaque** *n.* a small patch of abnormal tissue on or within a bodily structure, formed as the result of an accumulation of substances or as the result of localized damage. Examples of the former type include the AMYLOID PLAQUES of Alzheimer's disease, arising from clumps of beta-amyloid protein, and the atheromatous plaques of atherosclerosis, consisting of lipid deposits on the lining of arterial walls. Examples of the latter type include the demyelination plaques on the protective nerve sheaths of individuals with multiple sclerosis.

**-plasia** *suffix* development or growth (e.g., HYPERPLASIA).

**plasticity** *n.* flexibility and adaptability. Plasticity of the nervous or hormonal systems makes it possible to learn and register new experiences. Early experiences can also modify and shape gene expression to induce long-lasting changes in neurons or endocrine organs. See also FUNCTIONAL PLASTICITY; NEURAL PLASTICITY. Compare RIGIDITY.

**plastic surgery** a branch of surgery that specializes in the restoration, reconstruction, and repair of damaged or diseased tissue to improve the form or function of a body structure or area. Plastic surgery is commonly used in reconstruction of the female breast (e.g., after surgical removal for cancer), facial features (e.g., the nose, a cleft lip or palate), and genital features (e.g., the vagina or penis in sex-reversal surgery). See also COSMETIC SURGERY; POSTRECONSTRUCTIVE SURGERY; RECONSTRUCTIVE SURGERY.

**plastic tonus** a state of voluntary muscles such that a limb can be passively moved into positions that are retained, sometimes for hours. It is characteristic of CATATONIA.

**plateau** *n.* a period in learning when the LEARNING CURVE flattens because the rate of increase has stopped temporarily, often because of fatigue, boredom, loss of motivation, or a change in the level of skill required.

**plateau phase** see SEXUAL-RESPONSE CYCLE.

**Plateau's spiral** a stimulus used to create a vivid MOTION AFTEREFFECT, consisting of a black and white spiral rotated around its central point. Depending on the direction of rotation, the spiral will appear to expand or contract when steadily viewed while it is rotating. However, when the spiral is stopped, it will appear to move in the opposite direction, producing a perception of expansion or contraction. Moreover, the illusory expansion or contraction will apply to any other stationary object viewed immediately after stopping the spiral. [Joseph Antoine Ferdinand Plateau (1801–1883), Belgian physicist]

**Platonic idealism** a general philosophical position deriving both directly and indirectly from the writings of Greek philosopher PLATO, which holds that the phenomena of our world are to be truly known by contemplating them in their ideal forms or abstract essences. Such knowledge is to be achieved by the rational intellect or NOUS, rather than the senses or the understanding. In *The Republic*, Plato developed a philosophical system around the central notion that the things of this world are shadows or reflections of their ideal forms existing in a transcendent realm outside time and space (see ANALOGY OF THE CAVE). This realm is the “real” world because the forms that comprise it are perfect and eternal, not being subject to change, decay, or limitation like the things of our world. Platonic idealism is essentially a misnomer, as Plato's doctrine of ideas is actually a form of REALISM and not of IDEALISM. This doctrine, the THEORY OF FORMS, is partly an attempt to solve the logical and other problems involved in relating particulars to UNIVERSALS (e.g., relating blue things to the term *blue* or good things to the concept *goodness*); however, it also had a metaphysical or religious dimension, which was later emphasized and extended by NEOPLATONISM.

**Platonic love** a type of love in which there is no overt sexual behavior or desire. The term derives from a misunderstanding of the teachings of Greek philosopher PLATO, in which sexual desire is not absent but rather leads to a love for spiritual things.

**platycephaly** *n.* a condition in which the crown of the head is abnormally flat. —**platycephalic** *adj.*

**platykurtic** *adj.* describing a distribution of scores that is flatter than a NORMAL DISTRIBUTION, having more scores at the extremes and fewer in the center. See also MESOKURTIC; LEPTOKURTIC.

**play** *n.* activities that appear to be freely sought and pursued solely for the sake of individual or group enjoyment. Play is a cultural universal and typically regarded as an important mechanism in children's cognitive, social, and emotional development. Research on the topic abounds: Various types of play have been described—with LOCOMOTOR PLAY, OBJECT PLAY, and SOCIAL PLAY generally considered to be the three basic forms—and numerous theories about the specific functions of play have been proposed. Advocates of the **practice theory of play**, for example, propose that play prepares children for activities or roles they will encounter as adults, whereas others suggest that it serves a more immediate function, such as exercise, establishing social relations among peers, or—according to the SURPLUS ENERGY THEORY—using up excess energy. Other theories include those of Sigmund FREUD, who claimed that play is a means for children to deal with anxiety-producing events; Jean PIAGET, who believed that play

promotes cognitive competence by helping children incorporate new information into existing cognitive structures; Erik ERIKSON, who viewed play sequences as models by which children relive aspects of the past, represent aspects of the present, and anticipate aspects of the future; and Lev VYGOTSKY, who conceived of play as facilitating SYMBOLIC PROCESSES by providing children with opportunities to establish meaning.

Although the preponderance of research on play focuses on the activities of children, the play behavior of nonhuman animals is also actively studied. Often including components of courtship, aggression, predation, and sexual behavior in contexts where these do not seem appropriate, animal play appears to serve several important developmental functions. These include fostering the acquisition of social skills and the formation of social relationships, enhancing confidence (e.g., by teaching a young animal the flexibility to respond to unexpected events such as being knocked off balance), and strengthening sensorimotor systems.

**playacting** *n.* dramatic play in which children, adolescents, or adults (including group-therapy participants) take different roles. In the process, the participants test out relationships, rehearse different ways of dealing with situations, identify with significant figures, and play out any of a broad range of affective states and behaviors within the safe realm of make-believe. See also PSYCHODRAMA.

**playfulness** *n.* the tendency to see the light or bright side of life, to joke with others, and not to take matters too seriously. Playfulness is considered to be a foundation of humor. —**playful** *adj.*

**playground design** the design of recreational areas for children, which can influence their play behavior. For example, more complex levels of play are seen in adventure playgrounds than in traditional or contemporary playgrounds.

**play group psychotherapy** a form of ANALYTIC GROUP PSYCHOTHERAPY for children 3 to 5 years old (i.e., those in preschool and early elementary school). The therapist provides a variety of play materials (e.g., clay, toys, blocks, figurines) that foster both interaction among group members and the nonverbal expression of impulses, feelings, and thoughts by individuals. During the process, the therapist may request factual information, offer encouragement, or clarify observations. The goal is to enhance the child's sense of mastery and self-control through appropriate communication and socialization. [introduced in 1943 by Russian-born U.S. psychotherapist Samuel Richard Slavson (1890–1981)]

**playing possum** see DEATH FEIGNING.

**play therapy** the use of play activities and materials (e.g., clay, water, blocks, dolls, puppets, finger paint) in CHILD PSYCHOTHERAPY. Play-therapy techniques are based on the theory that such activities mirror the child's emotional life and fantasies, enabling the child to “play out” feelings and problems and to test out new approaches and understand relationships in action rather than words. This form of psychotherapy, which focuses on a child's internal conflicts in addition to his or her daily life and current relationships, may be directive or nondirective. See DIRECTIVE PLAY THERAPY; NONDIRECTIVE PLAY THERAPY. See also PROJECTIVE PLAY.

**pleasantness** *n.* a hedonic state, typically deemed highly desirable, that is experienced when an event is congruent

with one's goals or is associated with pleasure. See also DIMENSIONAL THEORY OF EMOTION. —**pleasant** *adj.*

**pleasure** *n.* the emotion or sensation induced by the enjoyment or anticipation of what is felt or viewed as good or desirable.

**pleasure center** any of various areas of the brain (including areas of the hypothalamus and limbic system) that, upon intracranial self-stimulation (see INTRACRANIAL STIMULATION), have been implicated in producing pleasure. The existence of pure pleasure centers has not been definitively established, particularly because the self-stimulation response rate varies according to such factors as the duration and strength of the electrical stimulation. Also called **reward center**. [proposed by James OLDS]

**pleasure principle** the view that human beings are governed by the desire for gratification, or pleasure, and for the discharge of tension that builds up as pain or "unpleasure" when gratification is lacking. In the classical psychoanalytic theory of Sigmund FREUD, the pleasure principle is the psychic force that motivates people to seek immediate gratification of instinctual, or libidinal, impulses, such as sex, hunger, thirst, and elimination. It dominates the ID and operates most strongly during childhood. Later, in adulthood, it is opposed by the REALITY PRINCIPLE of the EGO. Also called **pleasure–pain principle**.

**-plegia** *suffix* paralysis (e.g., QUADRIPLEGIA).

**pleniloquence** *n.* a compulsion to talk incessantly. —**pleniloquent** *adj.*

**pleonasm** *n.* a form of verbal redundancy in which an excess of words is used to express an idea, as in *a great big giant*.

**pleonexia** *n.* **1.** an abnormal greediness or desire for the acquisition of objects. **2.** an abnormal intake of oxygen.

**plethysmography** *n.* the process of recording and measuring volume or volume changes in organs or body tissues, such as the blood supply flowing through an organ. The instrument used in this process is called a **plethysmograph**. Examples include the **penile plethysmograph**, which records changes in the size of the penis and thus measures blood flow and erection, and the **vaginal plethysmograph**, which records changes in the amount of blood in the walls of the vagina and thus measures sexual arousal.

**plexiform layer** one of the two synaptic layers in the retina. See INNER PLEXIFORM LAYER; OUTER PLEXIFORM LAYER.

**plexiform molecular layer** see CORTICAL LAYERS.

**plexus** *n.* a network of similar structures (e.g., nerves, blood vessels) that are functionally or anatomically interconnected, such as the BRACHIAL PLEXUS, CERVICAL PLEXUS, or CELIAC PLEXUS.

**PLISSIT** *n.* acronym for a model that is used in counseling clients about sexual problems. The model offers successive levels of communication or intervention: (a) Permission, in which the client is told it is acceptable to talk openly about a given sexual problem; (b) Limited Information, in which the client is given information limited to that directly relevant to his or her concern; (c) Specific Suggestions, in which actions to treat the problem are specified; and (d) Intensive Therapy, which may be required if the client has a complex problem (usually involving refer-

ral to another therapist). [developed in 1976 by U.S. psychologist Jack S. Annon (1929–2005)]

**plosive** **1.** *adj.* denoting a speech sound in which the airstream is partially or totally obstructed and suddenly released. A plosive sound may be VOICED (e.g., [b], [d], [g]) or UNVOICED (e.g., [p], [t], [k]). **2.** *n.* a plosive speech sound. Also called **obstruent**; **stop**.

**Plummer's disease** see THYROTOXICOSIS. [Henry Stanley Plummer (1874–1936), U.S. surgeon]

**pluralism** *n.* **1.** the idea that any entity has many aspects and that it may have a variety of causes and meanings. **2.** in philosophy, the belief that ultimate reality is composed of more than one substance or fundamental kind of entity. Compare DUALISM; MONISM. **3.** the existence in a society of people having different religions, ethnic origins, and cultural backgrounds. —**pluralist** *adj.*

**pluralistic ignorance** the state of affairs in which virtually every member of a group privately disagrees with what are considered to be the prevailing attitudes and beliefs of the group as a whole. It has been suggested that apparently sudden changes in social mores (e.g., with regard to sexual behavior) can be explained by the gradual recognition by many individuals that others in the group think the same as themselves. [proposed in the 1920s by Floyd H. ALLPORT]

**plural marriage** POLYGAMY, especially in the form associated with the Mormon community. See also GROUP MARRIAGE.

**plus maze** a cross-shaped apparatus to assess learning and memory in rodents and other nonhuman animals. It has four arms radiating at right angles to one another from a central point. The animal is required to use visual cues to perform a particular task within the maze, such as identifying and entering a specific arm to obtain a food reward. See also ELEVATED PLUS MAZE.

**plutomania** *n.* an inordinate striving for money and possessions.

**PM** abbreviation for PRIMARY MEMORY.

**PMS** abbreviation for PREMENSTRUAL SYNDROME.

**PMT** abbreviation for PARENT MANAGEMENT TRAINING.

**PNC** abbreviation for PREFERRED NOISE CRITERION.

**PNES** abbreviation for PSYCHOGENIC NONEPILEPTIC SEIZURE.

**pneumo-** *combining form* **1.** air or gas (e.g., PNEUMOEN-CEPHALOGRAPHY). **2.** the lungs (e.g., PNEUMOGRAPH).

**pneumoencephalography** *n.* a diagnostic technique used from 1918 until the mid-1980s to examine the cerebral ventricles and subarachnoid space of the brain by injecting air into the cerebrospinal fluid. Because of the difference in opacity between the air and brain tissues, the air appears as a dark shadow on the resulting radiographic image (X-ray), which is known as a **pneumoencephalogram**. The development of COMPUTED TOMOGRAPHY and MAGNETIC RESONANCE IMAGING has eliminated the need for this test.

**pneumogastric nerve** see VAGUS NERVE.

**pneumograph** *n.* an instrument that records the movements or volume change of the lungs. The record is produced either by electric monitoring of the rate and extent of respiratory movements or by X-ray imaging of the lungs



after they have been injected with a gas to improve the visual contrast between tissue areas. Also called **pneumatograph**; **stethograph**.

**PNS** abbreviation for PERIPHERAL NERVOUS SYSTEM.

**POC** abbreviation for PERFORMANCE-OPERATING CHARACTERISTIC.

**POE** abbreviation for POSTOCCUPANCY EVALUATION.

**poetry therapy** a form of BIBLIOTHERAPY that uses the reading or writing of poetry to facilitate emotional expression in an individual and foster healing and personal growth.

**Poetzl phenomenon** see PÖTZL PHENOMENON.

**Poggendorf illusion** a visual illusion in which the two ends of a straight diagonal line seem to be offset from one another when the line appears to pass behind a figure with parallel vertical borders, such as a bar. [Johann Christian Poggendorf (1796–1877), German physicist]

**POI** abbreviation for PERSONAL ORIENTATION INVENTORY.

**poikilotherm** *n.* see ECTOTHERM. —**poikilothermic** *adj.* —**poikilothermy** *n.*

**point biserial correlation coefficient** (symbol:  $r_{pbis}$ ;  $r_{pb}$ ) a numerical index reflecting the degree of relationship between two random variables, one CONTINUOUS and one dichotomous (binary). An example is the association between the propensity to experience an emotion (measured using a scale) and gender (male or female). Also called **point biserial**; **point biserial *r***. Compare RANK BISERIAL CORRELATION COEFFICIENT.

**point estimate** a single estimated numerical value, determined from a sample, of a given population PARAMETER. Point estimates can often be tested for STATISTICAL SIGNIFICANCE if their STANDARD ERRORS are also known. Compare INTERVAL ESTIMATE.

**point-hour ratio (PHR)** the average numerical grade earned by a student, determined by dividing earned GRADE POINTS by the total number of class hours attended in a semester or quarter. Also called **grade-point average (GPA)**.

**pointing** *n.* a test in which the participant, with the eyes open, extends a forefinger and touches the forefingers of the examiner. Knowing the location of the examiner's fingers, the participant should then be able to touch them with eyes closed. Failure to do so is called **past-pointing**.

**point-light display** a display used in studies of BIOLOGICAL MOTION perception and consisting of a dozen or so small lights attached to various joints and other parts of the body of an individual, with the body itself not visible. The movement of just the small lights (or a computer reproduction thereof) produces a compelling impression of the individual in motion. However, without movement, the lights are perceived as random and not as the individual. [devised in the 1970s by Swedish psychologist Gunnar Johansson (1911–1998)]

**point localization** the ability to locate a point on the skin that is stimulated. The **point-localization test** is a somatosensory test in which a skin area, usually on the hand, is touched twice with an intervening period of 1 second. The participant is required to determine whether the points touched were in the same place. Also called **tactual localization**.

**point method** a method of evaluating jobs for the purpose of setting wage or salary levels in which a number of COMPENSABLE JOB FACTORS are identified, each factor is divided into degrees or levels, and points are assigned to each level; jobs can then be rated according to their total point score. The technique, which is essentially a development of the FACTOR-COMPARISON METHOD, is now the most widely used form of JOB EVALUATION. Also called **point factor method**. Compare CLASSIFICATION METHOD; HAY METHOD; JOB-COMPONENT METHOD; RANKING METHOD.

**point mutation** see MUTATION.

**point of subjective equality (PSE)** the value of a comparison stimulus that, for a given observer, is equally likely to be judged as higher or lower than that of a standard stimulus.

**point prevalence** see PREVALENCE.

**point scale** any scale for measuring some construct or attribute in which participants' responses to a series of multiple-choice questions are given numerical values (points). The final score is the total points earned. See also LIKERT SCALE; SEMANTIC DIFFERENTIAL.

**Poisson distribution** a DISCRETE DISTRIBUTION that generates the probability of occurrence of rare events that are randomly distributed in time or space. It is a type of THEORETICAL DISTRIBUTION. Count variables, such as the number of aggressive acts observed on a playground or the number of times a person attempts to stop smoking, take this form. When a variable is distributed in this way, a researcher needs to consider specialized statistical models. [Siméon D. Poisson (1781–1840), French mathematician]

**Poisson regression** an analytic model that has as its dependent variable a count variable and any of a number of predictor variables; in other words, it is used when the outcome variable has a POISSON DISTRIBUTION. For example, a researcher may hypothesize that dyadic adjustment, number of years as a couple, and personality characteristics predict the number of times that one member of a couple interrupts the other during a problem-solving task. [Siméon D. Poisson]

**polar body** see OOGENESIS.

**polar continuum** a series of values or elements whose end points are opposites, such as hot–cold.

**polarization** *n.* **1.** a difference in electric potential between two surfaces or two sides of one surface because of chemical activity. Polarization occurs normally in living cells, such as neurons and muscle cells, which maintain a positive charge on one side of the plasma membrane and a negative charge on the other. See POLARIZED MEMBRANE. **2.** a condition in which light waves travel in parallel paths along one plane.

**polarized membrane** a membrane with a positive electrical charge on one surface and a negative charge on the other surface. All living cells maintain a potential difference across their plasma membrane—the MEMBRANE POTENTIAL. In the resting condition, the outside of the membrane is positive in relation to the inside. See RESTING POTENTIAL.

**polarized thinking** see DICHOTOMOUS THINKING.

**police-assisted suicide** see SUICIDE BY COP.

**police psychology** a branch of psychology that provides specialized assistance to law enforcement. Typical du-

ties of a **police psychologist** may involve the screening and selection of recruits, FITNESS FOR DUTY EVALUATIONS, and counseling.

**policy analysis** a collection of techniques for synthesizing information (a) to specify alternative policy and program choices in cost–benefit terms, (b) to assess organizational goals in terms of input and outcome, and (c) to guide decision making. Policy analysis is a useful approach for examining the implications of different potential scenarios. For example, an organization considering a flexible time policy for its employees might choose to analyze the costs and benefits of the policy before implementing it.

**policy research** empirical studies conducted to guide the formulation of corporate, organizational, or public policies. For example, a nonprofit organization might investigate how to help students from lower income urban areas gain access to higher education.

**polio** *n.* see POLIOMYELITIS.

**polioencephalitis** *n.* inflammation of the gray matter of the brain, due to an infectious disease.

**poliomyelitis** *n.* an inflammatory process due to viral infection. In minor cases, it is characterized by fever, headache, sore throat, and vomiting that typically disappear within 72 hours. In major cases, the inflammation affects the gray matter of the spinal cord and may lead to muscular weakness and paralysis, which can affect the muscles controlled by autonomic nerves, as well as skeletal muscles, so that breathing, swallowing, or similar functions are disrupted. Cognitive problems may arise as a secondary result of breathing difficulties. Also called **infantile paralysis**; **polio**.

**politeness** *n.* the process by which a speaker attempts to avoid harm to a listener's public image or private self-concept through the use of nonthreatening or face-saving forms of speech. Politeness involves steering clear of content or forms of language that might embarrass listeners, make them feel uncomfortable, or lessen their self-respect. It also involves actively using language that maintains or enhances the listener's dignity, prestige, and autonomy. For example, a speaker might preface the request for a favor by saying, "I'm sorry to bother you, and feel free to say no, but I wonder if you would . . ." Politeness is one aspect of FACEWORK.

**political correctness** advocacy of or conformity to the belief that anything, particularly language, that may be offensive to or discriminate against anyone on the basis of race, ethnicity, gender, sexuality, disability, or physical appearance should be avoided. The term is usually used disparagingly to connote dogmatism on the one hand and excessive sensitivity on the other.

**political genetics** any of various attempts to derive political theories or practices from the science of genetics. Most such attempts have been repugnant, ranging from the policies of selective breeding and population control advocated by SOCIAL DARWINISM to Nazi conceptions of a master race. See also BEYONDISM.

**political psychology** **1.** the study of political issues, processes, and dynamics, at both the individual and group levels, from the perspective of psychological principles. **2.** the application of psychological principles and knowledge to the formation of public policy, particularly as related to mental health and associated issues. See also PUBLIC SERVICE PSYCHOLOGY.

**political science** the study of governments, particularly at the national level. Incorporating aspects of economics, philosophy, psychology, and sociology, political science has several focal subareas, including policymaking, international relations, voting behavior, and public opinion.

**political socialization** the transmission of political norms through social agents, such as schools, parents, peers, or the mass media. See SOCIAL TRANSMISSION.

**political sociology** an interdisciplinary field that examines the social basis of and social influences on political institutions, political movements, political power, and public policy.

**pollution** *n.* the presence of toxins or contaminants in the environment. See AIR-POLLUTION ADAPTATION.

**poltergeist** *n.* an alleged paranormal phenomenon in which an unseen "presence" disturbs a household by noisy and destructive pranks, such as slamming doors, rapping on walls, upsetting furniture, and breaking crockery. Parapsychologists often approach such manifestations with the idea that they may be caused by conscious or nonconscious PSYCHOKINESIS rather than being INDEPENDENT PHENOMENA. [German, "noisy ghost"]

**poly-** *combining form* **1.** many or much (e.g., POLYGYNY). **2.** excessive (e.g., POLYDIPSIA).

**polyandry** *n.* **1.** among nonhuman animals, a MATING SYSTEM in which a female mates with more than one male but a male mates with only one female. The female mates with and forms a social relationship with multiple males during one reproductive cycle. COOPERATIVE-BREEDING tamarins are thought to exhibit **facultative polyandry**, in which a female mates with multiple males who share in care of young when a new social group is formed, but once the group is established and has many helpers, the same female will become monogamous with one of the males. **2.** marriage of a woman to more than one husband at the same time, which is an accepted custom in certain cultures. Compare MONOGAMY; POLYGAMY; POLYGYNANDRY; POLYGYNY. —**polyandrous** *adj.*

**polychoric correlation coefficient** an index showing the degree of association between two variables that are scored as ordered categories but assumed to be manifestations of underlying continuous RANDOM VARIABLES. It is an alternative to the PRODUCT-MOMENT CORRELATION COEFFICIENT that is applied to ordered POLYCHOTOMOUS VARIABLES. For example, a researcher might use a polychoric correlation coefficient to assess the relationship between teacher ratings of student interest in a topic (none, moderate, substantial) and student self-reports of interest.

**polychotomous variable** a variable having more than two possible categories, either ordered or unordered. For example, college matriculation could be described as a polychotomous variable: freshman, sophomore, junior, or senior. Also called **polytomous variable**. See also DICHOTOMOUS VARIABLE.

**polydipsia** *n.* extreme thirst, manifest as excessive drinking. It commonly results from diabetes and can be an important diagnostic sign of the condition, or—in the case of **psychogenic polydipsia**—it may be related to psychological factors (e.g., PSYCHOGENIC NOCTURNAL POLYDIPSIA). It may also be induced by conditioning procedures (**schedule-induced polydipsia**). Compare ADIPSIA.

**polydrug abuse** SUBSTANCE ABUSE involving more than one drug.

**polydrug dependence** dependence (physical, psychological, or both) on more than one drug of abuse. Also called **polysubstance dependence**. See SUBSTANCE DEPENDENCE.

**polyestrous** *adj.* see ESTROUS CYCLE.

**polyethism** *n.* the division of labor, especially among colonies of SOCIAL INSECTS, in which each individual has a specific job, such as care of larvae, foraging for food, defense of the colony, or nest construction. In some species, there is an age-biased polyethism such that individuals progress through several tasks as they become older.

**polygamy** *n.* marriage to more than one spouse at the same time, which is an accepted custom in certain cultures. See also BIGAMY; GROUP MARRIAGE; PLURAL MARRIAGE; POLYANDRY; POLYGyny. Compare MONOGAMY. —**polygamous** *adj.* —**polygamist** *n.*

**polygenic** *adj.* relating to two or more genes.

**polygenic inheritance** see MULTIFACTORIAL INHERITANCE.

**polygenic trait** an attribute that is determined by numerous genes rather than only one. An example is a person's height. Also called **polygenetic trait**. See MULTIFACTORIAL INHERITANCE.

**polyglot** *n.* see LINGUIST.

**polyglot reaction** recovery from APHASIA in which a multilingual person first regains use of a language other than his or her native language. See also PITRES' RULE; RIBOT'S LAW.

**polygraph** *n.* a device that measures and records several physiological indicators of stress, such as heart rate, blood pressure, and GALVANIC SKIN RESPONSE. The instrument has been widely used in the interrogation of criminal suspects and in employee screening to measure marked physiological reactions to questions about such issues as theft, sexual deviation, or untruthfulness. It has been colloquially referred to as a **lie detector**, although no one has ever documented a close relation between physiological patterns and deceptive behavior. The accuracy of polygraph examinations is controversial, and the results are not accepted as evidence in many U.S. courts of law. [invented in 1917 by U.S. experimental psychologist William Marston (1893–1947)]

**polygynandry** *n.* a MATING SYSTEM in which females mate with multiple males and males mate with multiple females. Compare MONOGAMY; POLYANDRY; POLYGyny.

**polygyny** *n.* **1.** among nonhuman animals, a MATING SYSTEM in which a male mates with more than one female but a female mates with only one male. See also HAREM; RESOURCE DEFENSE POLYGyny. **2.** marriage of a man to more than one wife at the same time, which is an accepted custom in certain cultures. Compare MONOGAMY; POLYANDRY; POLYGAMY; POLYGYNANDRY. —**polygynous** *adj.*

**polymerase chain reaction (PCR)** a method for reproducing a particular RNA or DNA sequence manyfold, allowing amplification for sequencing or manipulating the sequence. It is useful for examining gene expression in a variety of tissues and organisms.

**polymicrogyria** *n.* see LISSENCEPHALY.

**polymodal** *adj.* involving several sensory modalities.

**polymorphic fusiform layer** see CORTICAL LAYERS.

**polymorphic layer** see DENTATE GYRUS.

**polymorphism** *n.* **1.** in biology, the condition of having multiple behavioral or physical types within a species or population. In some fish species, there are two distinct sizes of males: Larger males defend territory and attract females to mate with them; much smaller males, often with the physical appearance of females, stay close to the large male and inseminate some of the eggs. Peppered moths in England exist as black morphs (forms) in polluted areas and white morphs in nonpolluted areas. **2.** in genetics, the presence in a population of two or more variants of a gene (i.e., ALLELES) at a given genetic locus. For example, the variety of human blood groups is due to polymorphism of particular genes governing the characteristics of red blood cells. See also SINGLE-NUCLEOTIDE POLYMORPHISM. —**polymorphic** *adj.*

**polymorphous perversity** in the classical psychoanalytic theory of Sigmund FREUD, the response of the human infant to many kinds of everyday activities posited to provide sexual excitation, such as touching, smelling, sucking, viewing, exhibiting, rocking, defecating, urinating, hurting, and being hurt.

**polyneuritis** *n.* inflammation of several nerves at the same time, usually involving peripheral nerves as a result of infection. Symptoms include intense pain, muscle atrophy, and paralysis.

**polyneuropathy** *n.* any disorder that affects many or all of the peripheral nerves. See PERIPHERAL NEUROPATHY.

**polynomial** *n.* a mathematical expression consisting of multiple terms, each of which is the product of a constant (*a*) and a variable (*x*) raised to a whole number exponent:  $a_0x^n + a_1x^{n-1} \dots + a_{n-1}x + a_n$ .

**polynomial contrast** a comparison of mean values for more than two different levels or time points of an INDEPENDENT VARIABLE to determine whether they follow a particular mathematical pattern, such as linear, quadratic, cubic, or quartic. For example, a researcher might have a specific prediction about how clients' average degree of motivation to attend therapy will differ over the course of treatment (e.g., will decrease, then increase, and then decrease again), and he or she could use a polynomial contrast to determine whether this is indeed the case. See also REPEATED CONTRAST.

**polynomial regression** a type of LINEAR REGRESSION analysis in which the relationship between an explanatory or INDEPENDENT VARIABLE and an outcome or DEPENDENT VARIABLE is modeled as a POLYNOMIAL. Polynomial regression is appropriate for expressing higher order NONLINEAR effects among variables (via quadratic or cubic functions such as  $y_i = \beta_0 + \beta_1x_i + \beta_2x_i^2 + \beta_3x_i^3 + \dots$ ) while retaining all other aspects of linear approaches.

**polyopia** *n.* the formation of multiple images of one object on the retina due to a refractive error of the eye, brain injury (see PALINOPSIA), fatigue, or PSYCHOGENIC DISORDER. See VISUAL ILLUSION.

**polyorchidism** *n.* the condition of having three or more testicles. —**polyorchid** *adj.*, *n.*

**polypeptide** *n.* a molecule consisting of numerous (usually more than 10–20) AMINO ACIDS linked by PEPTIDE bonds. The synthesis of polypeptides in living cells takes

place at RIBOSOMES according to the genetic instructions encoded in the cell's DNA. Polypeptides are assembled by the cell into PROTEINS.

**polyphagia** *n.* an abnormal compulsion to eat excessive quantities of food.

**polypharmacy** *n.* the simultaneous use of a variety of drugs of the same or different classes with the intent of producing a more robust therapeutic response. Polypharmacy for mental disorders may, for example, involve the administration of two or more antidepressants in the hope that agents with different mechanisms of action will produce greater clinical improvement than that seen with any one drug alone. Polypharmacy is often criticized because of the lack of well-controlled studies supporting its use and the greater likelihood of adverse drug interactions when two or more drugs are used simultaneously. However, for those individuals unsuccessfully treated with several trials of monotherapy, or for whom monotherapy achieves suboptimal results, polypharmacy may be therapeutically indicated and appropriately managed.

**polyphasic activity** see TYPE A PERSONALITY.

**polyphasic sleep** a pattern in which sleep occurs in relatively short naps throughout a 24-hour period. A human infant may begin life with a polyphasic sleep rhythm that consists of half a dozen sleep periods. The rhythm becomes monophasic, with one long, daily sleep period, by about school age. **Biphasic sleep** patterns, which include one daytime nap period in addition to the long, typically nocturnal, period of sleep, are seen in a variety of cultures (e.g., the siesta) and in older adults. Compare MONOPHASIC SLEEP. See also SEGMENTED SLEEP; SLEEP-WAKE CYCLE.

**polysemy** *n.* the condition in which a word has more than one meaning, as in *dear* meaning "loved" or "expensive." Psycholinguistic experiments to probe the structure of the MENTAL LEXICON frequently make use of polysemy. See also AMBIGUITY; HOMONYM; PUN. —**polysemic** *adj.*

**polysensory unit** a neuron in the central nervous system or a sensory receptor that normally responds to more than one type of stimulus, such as cutaneous sensory receptors that mediate prick-pain impulses and also produce sensations of itching.

**polysomnography** *n.* the recording of various physiological processes (e.g., eye movements, brain waves, heart rate, respiration) throughout the night for the diagnosis of sleep-related disorders. —**polysomnograph** *n.*

**polysubstance dependence** see POLYDRUG DEPENDENCE.

**polysurgical addiction** a compulsive drive to undergo one surgical procedure after another even when organic pathology cannot be found. The condition may be a manifestation of FACTITIOUS DISORDER with predominantly physical signs and symptoms, SOMATIZATION DISORDER, BODY DYSMORPHIC DISORDER, or HYPOCHONDRIASIS.

**polysynaptic arc** a NEURAL ARC involving several SYNAPSES, such as when one or more sensory neurons are connected to one or more motor neurons via one or several interneurons. Also called **multisynaptic arc**. Compare MONOSYNAPTIC ARC.

**polysynaptic reflex** any reflex whose pathway involves more than a single SYNAPSE.

**polytomous variable** see POLYCHOTOMOUS VARIABLE.

**POMC** abbreviation for PROOPIOMELANOCORTIN.

**POMR** abbreviation for problem-oriented medical record. See PROBLEM-ORIENTED RECORD.

**POMS** acronym for PROFILE OF MOOD STATES.

**pons** *n.* a part of the brainstem lying between the MIDBRAIN and the MEDULLA OBLONGATA, appearing as a swelling on the ventral surface of the brainstem. It consists of bundles of transverse, ascending, and descending nerve fibers and nuclei, including FACIAL NERVE nuclei. It serves primarily as a bridge, or transmission structure, between different areas of the nervous system. It also works with the CEREBELLUM in controlling equilibrium and with the CEREBRAL CORTEX in smoothing and coordinating voluntary movements. With the cerebellum, it forms the region called the **metencephalon**. —**pontine** *adj.*

**pontine–geniculo–occipital spikes** see PGO SPIKES.

**pontine nucleus** any of several nuclei in the basal PONS. They receive fibers from the cerebral cortex and send fibers to the cerebellum via the middle CEREBELLAR PEDUNCLES.

**pontine sleep** sleep characterized by the presence of PGO SPIKES.

**pontocerebellar pathway** a neural pathway in the brain consisting of nerve fibers that run from the PONTINE NUCLEI to the cerebellum. The latter uses this information to coordinate and refine muscular activity initiated by the cerebral cortex.

**Ponzo illusion** a visual illusion in which the upper of two parallel horizontal lines of equal length appears to be longer than the bottom of the two lines when they are flanked by oblique lines that are closer together at the top than they are at the bottom. Also called **railway lines illusion**. [Mario Ponzo (1882–1960), Italian psychologist]

**pooled estimate** a single estimated value for a population PARAMETER (e.g., a mean) obtained by averaging several independent estimates of that parameter.

**pooled interdependence** a task condition in which the task is split among a number of individuals, units, or groups, each of which performs independently with no flow of work between them and little if any contact or coordination required. The output of each individual, unit, or group is eventually pooled and contributes to the overall goals of the organization as a whole. For example, each member of a particular organization's sales department works independently throughout the day to sell a particular product, and at the end of the day, the number of sales across all members is combined to yield a sales figure for the organization. Pooled interdependence means that the results achieved by each individual or group will depend very little on the accomplishments of the other individuals or groups.

**pooling** *n.* a procedure in which several independent estimated values of a population characteristic are averaged, with or without WEIGHTS, to obtain a single value. For example, the **pooled variance** is a single value for a variable's DISPERSION produced by combining several independent estimates of that dispersion. Consider a researcher who uses MULTIPLE IMPUTATION to fill in missing data when examining correlations between children's educational performance and maternal depression. He or she could calculate the value of the VARIANCE using the data set that exists at each stage of the imputation procedure and then average

each of those individual variances to obtain a single overall value.

**poor premorbid schizophrenia** see PROCESS SCHIZOPHRENIA.

**pop-out** *n.* in visual search tasks, a target that is different from the DISTRACTORS. One or more basic features will mark the pop-out as distinct from the other stimuli, hence allowing the target to be easily detected and identified regardless of the number of distractors.

**popular child** see SOCIOMETRIC STATUS.

**popular psychology** **1.** psychological knowledge as understood by members of the general public, which may be oversimplified, misinterpreted, and out of date. See also COMMONSENSE PSYCHOLOGY; FOLK PSYCHOLOGY. **2.** psychological information intended specifically for use by the general public, such as self-help books and television and radio advice programs.

**population** *n.* **1.** the total number of individuals (humans or other organisms) in a given geographical area. **2.** in statistics, a theoretically defined, complete group of objects (people, nonhuman animals, institutions) from which a SAMPLE is drawn to obtain empirical observations and to which results can be generalized. Also called **universe**.

**population correlation coefficient** (symbol:  $\rho$ ) an index expressing the degree of association between two continuously measured variables for a complete POPULATION of interest. For example, a researcher could obtain income and education information for all families in a town and calculate a population correlation coefficient for the entire town. In contrast, the SAMPLE CORRELATION COEFFICIENT indexes the association for a specific subset of those cases (e.g., every fourth family from a list of all those in the town).

**population density** the number of people or other organisms per unit of space.

**population distribution** the arrangement of scores or responses on a variable for a complete POPULATION of interest. For example, a researcher could graph the income distribution of all families in a town; in contrast, the SAMPLE DISTRIBUTION would show the incomes of only a specific subset of families.

**population mean** (symbol:  $\mu$ ) the average (MEAN) value on a variable for a complete POPULATION of interest. In many research settings, this value is estimated using the SAMPLE MEAN, but in situations when information is known for all the units of interest, it can be calculated directly. For example, the mean household income for an entire town may be determined by averaging the responses from a survey returned by all of the households in the town.

**population psychology** a subfield of psychology that studies the relationships between the characteristics and dynamics of human populations and the attitudes and behavior of individuals and groups. Representing an interface between psychology and DEMOGRAPHY, population psychology is particularly concerned with family planning and fertility regulation (i.e., reproductive behavior), high population density, and public policy development. Additional research topics include family formation and structure, migration, urbanization, mortality, and population education. Population psychology also encompasses the conceptualization of specific theoretical frameworks and methodological approaches for the study of population.

**population research** the study of the numbers, and changes in the numbers, of people and other organisms, focusing on the reasons for growth and decline, the migration patterns and spatial distribution of the organisms, and related issues. Also called **demographic research**. See also DEMOGRAPHY.

**population standard deviation** (symbol:  $\sigma$ ) a value indicating the DISPERSION of scores in a complete POPULATION of interest, that is, how narrowly or broadly the scores deviate from the MEAN. In many research settings, the population standard deviation is estimated from the sample STANDARD DEVIATION, but when information about the full set of units is known, it can be calculated directly. See also POPULATION VARIANCE.

**population stereotype** in ergonomics, generalizations about the perceptual, cognitive, or physical characteristics of a group of users, such as a cultural group, that are relevant to the design of systems or products for that group. For example, in the United States, users have a right bias (a tendency to move right, select doors on the right, etc.) and see the color red as carrying connotations of "stop," "danger," or "turn off." See CULTURAL ERGONOMICS.

**population validity** the degree to which study results from a sample can be generalized to a larger target group of interest (the POPULATION). For example, consider an educational researcher wishing to characterize the academic motivation of students. If he or she conducts a study of only urban students, then the investigator would need to demonstrate that the findings apply beyond the sample used in the study to the broader set of all students as a whole. Population validity is a type of EXTERNAL VALIDITY.

**population variance** (symbol:  $\sigma^2$ ) the square of the POPULATION STANDARD DEVIATION. It is a measure reflecting the spread (DISPERSION) of scores in a complete POPULATION of interest (e.g., the test scores of all students at a school).

**population vector** the mechanism used in the MOTOR CORTEX to encode the direction of an intended movement. The activity in each neuron increases when the intended movement is close to its preferred direction. The direction of the intended movement is derived from the activity across the population of neurons.

**POR** abbreviation for PROBLEM-ORIENTED RECORD.

**porencephaly** *n.* see CEREBRAL DYSPLASIA.

**poriomania** *n.* an irresistible impulse to run away or wander off, either consciously or in a state of amnesia. The condition may occur in some types of epilepsy and dementia. Also called **poriomanic fugue**. See also FUGUE; NOMADISM.

**pornographomania** *n.* **1.** a morbid impulse to write obscene letters. **2.** sexual arousal associated with writing obscenities.

**pornography** *n.* writings or images (e.g., illustrations, films) with blunt, often exploitative sexual content designed solely to arouse a sexual response and to satisfy the sexual urges of the beholder. Although legal interpretations of pornography vary, they tend to focus on it as a violation of community standards, with no redeeming artistic value. See also EROTICA. —**pornographic** *adj.* [from Greek *pornographos*, literally: "writing about prostitutes"]

**pornolagnia** *n.* an obscure term for attraction to prostitutes as sexual partners, in preference to partners who choose to have sex out of mutual interest.

**porphyria** *n.* a metabolic disorder involving the excretion of excessive or abnormal **porphyrins** (breakdown products of hemoglobin) in the urine. The acute intermittent form is characterized by abdominal pain, nausea, weakness or paralysis of the extremities, and psychiatric symptoms, such as irritability, depression, agitation, and delirium.

**PORT** acronym for SCHIZOPHRENIA PATIENT OUTCOMES RESEARCH TEAM.

**portal-systemic encephalopathy** see HEPATIC ENCEPHALOPATHY.

**Porter–Lawler model of motivation** a model of work motivation that integrates the VALENCE–INSTRUMENTALITY–EXPECTANCY THEORY with other theoretical perspectives, including EXISTENCE, RELATEDNESS, AND GROWTH THEORY, EQUITY THEORY, and theories of INTRINSIC MOTIVATION. [Lyman W. **Porter** (1930– ) and Edward E. **Lawler III** (1938– ), U.S. management theorists]

**Porter's law** the principle that the CRITICAL FLICKER FREQUENCY increases with the logarithm of the brightness of the stimulus, independent of the stimulus wavelength. Also called **Ferry–Porter law**. [Thomas Cunningham **Porter** (1860–1933), British scientist; Edwin Sidney **Ferry** (1868–1956), U.S. physicist]

**Porteus Maze Test** one of the original paper-and-pencil intelligence tests, devised in 1913 to assess the ability to plan ahead and apply reasoning to the solution of a problem. In its various forms, the Porteus Maze Test consists of a complex set of straight pathways that turn abruptly at right angles and run into numerous blind alleys. Only one pathway leads directly through the maze. [Stanley D. **Porteus** (1883–1972), Australian-born U.S. psychologist]

**Portman Clinic** a major British clinic set up in 1933 in Portman Square, London, by three psychoanalysts to assess, diagnose, and research delinquency. This led to the study and treatment of all mental and behavioral abnormalities and disorders. The clinic joined the TAVISTOCK CLINIC in the Tavistock and Portman National Health Service Trust in 1994. The trust provides a range of clinical mental health services as well as professional education and training.

**portmanteau neologism** a new word formed by combining parts of existing words, such as *stagflation*, from *stagnation* and *inflation*. See BLENDING; NEOLOGISM.

**port-wine stain** a permanent birthmark consisting of a bluish red discoloration. A diffuse port-wine stain on the face may be a symptom of STURGE–WEBER SYNDROME.

**positional alcohol nystagmus (PAN)** a form of horizontal NYSTAGMUS that persists following a horizontal change in head position (e.g., with the individual supine, head turned right or left) and is produced by alcohol intoxication.

**positional cloning** a technique to locate a gene that causes a disease, utilized when little is known about the biochemical basis of the disease.

**Position Analysis Questionnaire (PAQ)** a standardized, structured JOB ANALYSIS questionnaire that analyzes the type and level of work behaviors required by a job rather than the tasks or technologies involved. It consists of 194 items organized in six sections: information input; mental processes involved; relationships with others; job context (physical and social); work output; and other characteristics. A statistical analysis of data from the PAQ can

be used in JOB EVALUATION for the purpose of setting pay rates (see JOB-COMPONENT METHOD) or in estimating the predictive validity of PERSONNEL TESTS (see JOB-COMPONENT VALIDITY). [developed in the 1970s by U.S. industrial and organizational psychologists Ernest J. McCormick (1911–1990), Paul R. Jeanneret (1940– ), and Robert C. Mecham]

**position effect 1.** the difference a gene's position on a chromosome makes to that gene's expression. **2.** in parapsychology experiments using ZENER CARDS or similar targets, an effect in which the position of the target in a temporal series or a spatial array appears to influence the accuracy of the participant's "calls" or guesses. See also DECLINE EFFECT; DIFFERENTIAL EFFECT; FOCUSING EFFECT; PREFERENTIAL EFFECT; SHEEP–GOAT EFFECT.

**position power** a capacity to influence others based on their acceptance that the influencer occupies a formal position in the organization or group that gives him or her the right to make decisions and to demand compliance. In other words, the power is associated with the position itself and is not dependent on the person in that position. See LEGITIMATE POWER.

**positive acceleration** a situation in which the successive gains as a result of learning or practice increase across trials. See LEARNING CURVE. Compare NEGATIVE ACCELERATION.

**positive addiction** a concept that some activities in which a person feels a need or urge to participate, such as meditation or exercising, are positive even though they may possibly become a form of addiction. Positive addictions are considered healthy therapeutic alternatives relative to negative addictions, such as drug abuse, alcohol dependence, or cigarette smoking. [developed by U.S. psychiatrist William Glasser (1925–2013)]

**positive affect** the internal feeling state (AFFECT) that occurs when a goal has been attained, a source of threat has been avoided, or the individual is satisfied with the present state of affairs. The tendency to experience such states is called **positive affectivity**.

**Positive Affect Scale** see POSITIVE AND NEGATIVE AFFECT SCHEDULE.

**positive afterimage** see AFTERIMAGE.

**positive afterpotential** a small, positive membrane potential (hypopolarization) shown by a neuron or muscle cell during recovery from an ACTION POTENTIAL. The nerve or muscle is more excitable during the positive afterpotential. See also AFTERPOTENTIAL.

**Positive and Negative Affect Schedule (PANAS)** the most commonly used self-report instrument to assess one's internal feeling state during a time period specified by a researcher (e.g., "during the past few weeks"; "during the past few days"). It comprises two 10-item subscales: The **Positive Affect (PA) Scale** reflects the level of pleasant engagement, or the extent to which a person feels enthusiastic, excited, active, and determined. The **Negative Affect (NA) Scale** reflects a general dimension of unpleasant engagement and subjective distress underlying a broad range of aversive affects, including fear, nervousness, guilt, and shame. Also called **Positive and Negative Affect Scales**. [developed in the 1980s by U.S. psychologists David Watson and Lee Anna Clark and Dutch-born U.S. psychologist Auke Tellegen (1930– )]

**positive attitude** in psychotherapy and counseling, the

client's feelings of acceptance and approval of the therapist or counselor, of the therapeutic or counseling process, of another person, or of himself or herself. Compare NEGATIVE ATTITUDE.

**positive contingency** see CONTINGENCY.

**positive contrast** see BEHAVIORAL CONTRAST.

**positive correlation** a relationship between two variables in which both rise and fall together. For example, one would expect to find a positive correlation between study hours and test performance. Also called **direct correlation**. Compare NEGATIVE CORRELATION.

**positive discrimination** see REVERSE DISCRIMINATION.

**positive discriminative stimulus** (symbol: S+) a stimulus associated with a contingency of POSITIVE REINFORCEMENT.

**positive emotion** an emotional reaction designed to express a POSITIVE AFFECT, such as happiness when one attains a goal, relief when a danger has been avoided, or contentment when one is satisfied with the present state of affairs. Compare NEGATIVE EMOTION.

**positive eugenics** see EUGENICS.

**positive exercise addiction** an inordinate attraction to habitual physical exercise that brings about an enhanced sense of physical and psychological well-being. Compare NEGATIVE EXERCISE ADDICTION.

**positive family history** a family history with disease characteristics sufficient enough to consider that the family has a genetic syndrome or inherited disorder. A family history of colon cancer, for example, is evaluated according to the AMSTERDAM CRITERIA to determine whether the family has hereditary nonpolyposis colorectal cancer (HNPCC).

**positive feedback** **1.** an arrangement whereby some of the output of a system, whether mechanical or biological, is fed back to increase the effect of input signals. Positive feedback is rare in biological systems. See FEEDBACK SYSTEM. **2.** acceptance, approval, affirmation, or praise received by a person in response to his or her performance. Compare NEGATIVE FEEDBACK.

**positive hallucination** a false perceptual experience characterized by perception of something that is not there. In general, positive hallucinations are exaggerations of normal perception. Although they are a hallmark of psychotic disturbances, such as schizophrenia, these perceptual experiences can also be generated by hypnosis. Compare NEGATIVE HALLUCINATION.

**positive hit rate** **1.** the number of instances in which the choice of a particular alternative proved correct divided by the total number of instances in which that alternative was chosen. **2.** in PERSONNEL SELECTION, the proportion of people hired who actually succeed on the job.

**positive illusion** a belief about oneself that is pleasant or positive and that is held regardless of its truth. The most common positive illusions involve exaggerating one's good traits (see BENEFACTANCE), overestimating one's degree of control over personally important events (see ILLUSION OF CONTROL), and sustaining unrealistic optimism (see REPRESSIVE COPING STYLE).

**positive incentive** an object or condition that constitutes a desired goal and may result in GOAL-DIRECTED BEHAVIOR. Compare NEGATIVE INCENTIVE.

**positive motivation** the impulse to engage in behaviors that result in desired outcomes, such as wanting to work hard in order to obtain praise or promotion from an employer.

**positive-negative asymmetry** the tendency of people to give disproportionate weight and consideration to negative information and events in decision making and perception. For example, voters are more inclined to reject a candidate on the basis of the negative information they receive about that person than they are inclined to accept a candidate on the basis of the positive information they receive. The effect can be cognitive, influencing thinking and judgment, or affective, influencing emotions. In either case, negative information requires more processing and the recipient typically demands more justification and input than he or she would from positive information. See also BAD IS STRONGER THAN GOOD. [first described in 1971 by Belgian psychologist Guido Peeters]

**positive practice** see OVERCORRECTION.

**positive psychology** a field of psychological theory and research that focuses on the psychological states (e.g., contentment, joy), individual traits or CHARACTER STRENGTHS (e.g., intimacy, integrity, altruism, wisdom), and social institutions that enhance SUBJECTIVE WELL-BEING and make life most worth living. A manual, *Character Strengths and Virtues: A Handbook and Classification*, serves this perspective in a manner parallel to the *Diagnostic and Statistical Manual of Mental Disorders* for the categorization of mental illness. [term coined by Abraham MASLOW and adapted by U.S. psychologist Martin E. P. Seligman (1942– )]

**positive punishment** punishment that results because some stimulus or circumstance is presented as a consequence of a response. For example, if a response results in presentation of a loud noise and the response becomes less likely as a result of this experience, then positive punishment has occurred. Compare NEGATIVE PUNISHMENT.

**positive regard** feelings of warmth, caring, acceptance, and importance expressed by someone toward another. Positive regard is considered necessary for psychological health and the development of a consistent sense of self-worth and is also a cornerstone of certain therapeutic approaches, particularly that of Carl ROGERS. See also CONDITIONAL POSITIVE REGARD; UNCONDITIONAL POSITIVE REGARD.

**positive reinforcement** **1.** an increase in the probability of occurrence of some activity because that activity results in the presentation of a stimulus or of some circumstance. **2.** the procedure of presenting a positive reinforcer after a response. Compare NEGATIVE REINFORCEMENT.

**positive relationship** see DIRECT RELATIONSHIP.

**positive reward theory** see REWARD THEORY.

**positive schizophrenia** a form of schizophrenia in which POSITIVE SYMPTOMS predominate, as evidenced in bizarre behavior, illogical speech or writing, or expression of hallucinations and delusions. Although more dramatically evident than NEGATIVE SCHIZOPHRENIA, the positive aspect is usually less challenging to treat. [defined in 1982 by U.S. psychiatrists Nancy C. Andreasen and Scott A. Olsen]

**positive self-talk** see SELF-TALK.

**positive skew** see SKEWNESS.

**positive stereotype** a STEREOTYPE that purports to describe the admirable, desirable, or beneficial qualities and

characteristics of the members of a particular group or social category. Although stereotypes about other groups are often negative, generalizations about one's own groups tend to be positive. Compare **NEGATIVE STEREOTYPE**.

**positive symptom** a symptom of schizophrenia that represents an excess or distortion of normal function, as distinct from a deficiency in or lack of normal function (compare **NEGATIVE SYMPTOM**). Positive symptoms include delusions or hallucinations, disorganized behavior, and manifest conceptual disorganization. They are more dramatic and less distinctive of schizophrenia than are negative symptoms: Eugen BLEULER regarded them as **SECONDARY SYMPTOMS**. See **POSITIVE SCHIZOPHRENIA**.

**positive transfer** **1.** the improvement or enhancement of present learning by previous learning. For instance, learning to drive a car could facilitate learning to drive a truck. See also **TRANSFER OF TRAINING**. Compare **NEGATIVE TRANSFER**. **2.** see **LANGUAGE TRANSFER**.

**positive transference** in psychoanalysis, a patient's transfer onto the analyst or therapist of those feelings of attachment, love, idealization, or other positive emotions that the patient originally experienced toward parents or other significant individuals during childhood. Compare **NEGATIVE TRANSFERENCE**.

**positive tropism** the orientation of an organism toward a source of stimulation. An example is the turning of a flower to face the sun. See **TROPISM**.

**positivism** *n.* a family of philosophical positions holding that all meaningful propositions must be reducible to sensory experience and observation and thus that all genuine knowledge is to be built on strict adherence to empirical methods of verification. Positivism first became an explicit position in the work of French thinkers Auguste COMTE and Claude Henri de Rouvroy, Comte de Saint-Simon (1760–1825), although it is implicit to varying degrees in most earlier forms of **EMPIRICISM**. Its effect is to establish science as the model for all forms of valid inquiry and to dismiss the truth claims of religion, metaphysics, and speculative philosophy. Positivism, particularly **LOGICAL POSITIVISM**, was extremely influential in the early development of psychology and helped to form its commitment to empirical methods. It continues to be a major force in contemporary psychology. See also **MACHIAN POSITIVISM**. —**positivist** *adj.*

**positivist criminology** an approach that seeks to explain criminal behavior not as an exercise of free will or choice (as is the case in classical **CRIMINOLOGY**) but rather as a consequence of various internal factors (e.g., biological, psychological) and external factors (e.g., cultural, social) that affect human behavior. See also **CRIMINAL ANTHROPOLOGY**.

**positivity effect** an increasing tendency for older adults, compared to younger people, to attend to, recall, and process positive information to a greater degree than they do negative information. [first proposed in the 1990s by U.S. psychologist Laura L. Carstensen]

**positron emission tomography (PET)** an imaging technique using radiolabeled tracers, such as 2-deoxyglucose labeled with fluorine-18, that emit positively charged particles (**positrons**) as they are metabolized. Used to evaluate cerebral metabolism and blood flow as well as the binding and transport of neurotransmitter systems in the brain, PET enables documentation of functional changes

that occur during the performance of mental activities. It is also used to detect damage or disease (e.g., cancer) in other organs of the body.

**possession** *n.* see **DEMONIC POSSESSION**.

**possession trance** see **DISSOCIATIVE TRANCE DISORDER**.

**possessiveness** *n.* **1.** in general, excessive striving to claim possession or ownership. **2.** an abnormal tendency to control or dominate others, generally involving the restriction of their social relationships. In its most extreme form, this pattern of behavior is often associated with abusive relationships.

**possible self** a mental representation of what one could become. Possible selves are cognitive manifestations of enduring goals, aspirations, fears, and threats that provide plans and strategies for the future. They may be positive, providing an image of something to strive for, or negative, providing an image of something to be avoided. An individual is free to create any variety of selves, yet the pool of possible selves derives from the categories made salient by the individual's particular sociocultural and historical context and from the models, images, and symbols provided by the media and by the individual's immediate social experiences. [proposed in 1985 by U.S. social psychologist Hazel Rose Markus]

**postcaptivity health problems** health problems that develop after a period of captivity, especially in **PRISONERS OF WAR**, and that may include injuries, posttraumatic stress reactions, affective reactions, or a combination of these. Many former captives may show **POSTTRAUMATIC STRESS DISORDER** in the years following release, sometimes with a delayed onset.

**postcentral area** a sensory region of the **PARIETAL LOBE** of the brain, posterior to the **CENTRAL SULCUS**, that has neurons involved in the perception of touch, proprioception, kinesthesia, and taste.

**postcentral gyrus** a ridge in the **PARIETAL LOBE** of the brain, just behind the **CENTRAL SULCUS**, that is the site of the **PRIMARY SOMATOSENSORY AREA**.

**postchiasmatic visual deficit** a visual impairment caused by damage to visual processing areas posterior to (i.e., beyond) the **OPTIC CHIASM**, such as the **OPTIC RADIATIONS** or **STRIATE CORTEX**. Postchiasmatic injury or disease affects vision in both eyes (see **HOMONYMOUS HEMIANOPIA**). Also called **retrochiasmatic visual deficit**.

**postcognition** *n.* see **RETROCOGNITION**. —**postcognitive** *adj.*

**postcolonialism** *n.* the multidisciplinary (e.g., historical, linguistic, political, philosophical) study or analysis of the experience and the local and global effects of colonization. Whereas historical **colonialism** emphasized the differences between the colonizers and the colonized, usually marginalizing the latter, postcolonialism represents an attempt to bring the two cultures together, such as when indigenous writers of previously colonized lands explain aspects and values of their traditional cultural identity in the language of the colonizers.

**postcompetition anxiety** the apprehension created after a competition as a result of not meeting goals during its course, the perceived reaction of others to the performance or outcome, or the perceived expectations of others and oneself because of the performance or outcome.

**postconcussion syndrome** persistent and pervasive



changes in cognitive abilities and emotional functioning that occur as a result of diffuse trauma to the brain during concussion. An individual with this syndrome may appear to be within normal limits neurologically but experience persistent depression, fatigue, impulse-control problems, and difficulties with concentration and memory. Postconcussion syndrome is frequently seen in individuals who have been repeatedly beaten on the head and face, such as children or women who have been abused (see BATTERED-CHILD SYNDROME; BATTERED-WOMAN SYNDROME).

**postconventional level** in KOHLBERG'S THEORY OF MORAL DEVELOPMENT, the third and highest level of moral reasoning, characterized by an individual's commitment to moral principles sustained independently of any identification with family, group, or country. This level is divided into two stages: the earlier **social contract orientation** (Stage 5 in Kohlberg's overall theory), in which moral behavior is that which demonstrates an understanding of social mutuality, balancing general individual rights with public welfare and democratically agreed upon societal rights; and the later **ethical principle orientation** (Stage 6), in which moral behavior is based upon self-chosen, abstract ethical standards. Also called **postconventional morality**. See also CONVENTIONAL LEVEL; PRECONVENTIONAL LEVEL.

**postcopulatory behavior** among nonhuman animals, activity that immediately follows COPULATION. Male rats, for example, are inactive but produce an ultrasonic vocalization after ejaculation. In many species, males remain alert and guard their mate to prevent other males from attempting to copulate with her. In some species, females can eject or remove sperm or keep it, engaging in postcopulatory MATE SELECTION.

**postcreolization continuum** see DECREOLIZATION.

**postdictive validity** see RETROSPECTIVE VALIDITY.

**postemployment services** **1.** in VOCATIONAL REHABILITATION, follow-up assistance or programs designed to help recently employed individuals with disabilities adjust to their new job situation. Examples include counseling, financial support, and continuing medical treatment and care. **2.** services provided to help individuals who are economically disadvantaged (e.g., those receiving public assistance in the form of welfare) develop various work-related skills essential to sustained long-term employment and enhance their potential for wage increases and career advancement. Services may provide access to and assistance with child care and transportation; on-the-job training; continuing education classes; and mentoring programs designed to help newly hired individuals adjust to the workplace.

**postencephalitic amnesia** a memory disorder that occurs in some patients who have recovered from viral ENCEPHALITIS. The symptoms include a gross defect of recent memory and partial amnesia for events preceding the encephalitis; intelligence, however, is unimpaired.

**postencephalitis syndrome** a pathological condition that occurs following or as a result of ENCEPHALITIS. An example is postencephalitic PARKINSONISM, which developed in patients who recovered from the 1915 to 1926 epidemic of ENCEPHALITIS LETHARGICA. The onset of symptoms in some cases was not observed until 10 years after recovery from the disease.

**posterior** *adj.* in back of or toward the back. In reference

to two-legged upright animals, this term sometimes is used interchangeably with DORSAL to mean toward the back surface of the body. Compare ANTERIOR.

**posterior cerebral artery** an artery of the brain that arises from the terminal bifurcation of the BASILAR ARTERY and passes above the OCULOMOTOR NERVE to curve around the midbrain above the level of the TENTORIUM CEREBELLI. Its branches supply blood to the region of the THIRD VENTRICLE, including the thalamus and choroid plexus, the occipital lobe and the inferior surface of the temporal lobe, and the lingual, fusiform, and inferior temporal gyri.

**posterior chamber** see EYE.

**posterior cingulate cortex (PCC)** the back, more flattened part of the CINGULATE CORTEX, a structure in the forebrain that forms a collar around the CORPUS CALLOSUM. Like the ANTERIOR CINGULATE CORTEX, the PCC also is divided into two sections, referred to as the **dorsal posterior cingulate cortex (dPCC)** and the **ventral posterior cingulate cortex (vPCC)**, respectively. Although its precise characteristics and mechanisms are not yet fully understood, the PCC has been shown to play a role in numerous processes, including EPISODIC MEMORY, SPATIAL ATTENTION, PREATTENTIVE PROCESSING, sensory processing (VISUAL PROCESSING, AUDITORY PROCESSING, etc.), SENSORY INTEGRATION, motor intention, emotional responses, and self-reflection and other self-referential processing. Additionally, it is a key component of the LIMBIC SYSTEM and forms part of the recently identified DEFAULT-MODE NETWORK, a set of specific brain regions whose activity predominates in the resting state and is inhibited during cognitively demanding and externally cued perceptual tasks. Structural and functional alterations of the PCC appear to underlie several disorders, including Alzheimer's disease, autism, depression, dyslexia, and schizophrenia. For example, several studies have revealed atrophy and decreased metabolic activity (hypometabolism)—particularly of the enzyme CYTOCHROME OXIDASE—within the PCC of individuals who display MILD COGNITIVE IMPAIRMENT and subsequently develop Alzheimer's disease, as well as reduced connectivity between the PCC, hippocampus, and other brain regions.

**posterior commissure** see COMMISSURE.

**posterior communicating artery** an artery that arises from the INTERNAL CAROTID ARTERY and passes just ventral to the optic tract to merge with the POSTERIOR CEREBRAL ARTERY, thus completing the CIRCLE OF WILLIS at the base of the brain. Branches of the posterior communicating artery supply the optic tract and part of the optic chiasm, the genu of the corpus callosum, the posterior hypothalamus, parts of the internal capsule, the third ventricle, and anterior and ventral nuclei of the thalamus.

**posterior cortex** the OCCIPITAL CORTEX of mammals, including the STRIATE CORTEX (Brodmann area 17) and PRE-STRATE CORTEX (area 18).

**posterior cranial fossa** see FOSSA.

**posterior distribution** in BAYESIAN approaches, an estimated arrangement of values for a population characteristic of interest that is obtained by combining empirical data with prior expectations based on existing knowledge or opinion (the PRIOR DISTRIBUTION).

**posterior horn** **1.** the backmost division of each LATERAL VENTRICLE in the brain. **2.** see DORSAL HORN.

**posterior nucleus** see LATERAL POSTERIOR NUCLEUS.

**posterior pituitary** the posterior lobe of the PITUITARY GLAND. Also called **neurohypophysis**.

**posterior probability** the probability that a certain event will occur given that other related events have been observed. For example, assume that Basket A contains 10 white cards and 20 red cards, while Basket B contains 20 white cards and 10 red cards. If one selects a card from a basket at random, without noting the color, the probability that it will be from Basket A is .5, since the only possibilities are A or B. If, however, the color of the card is noted, then one must take this additional information into account in determining the probability that the card came from Basket A. For example, the probability that a white card will be pulled from Basket A would be revised downward from .5 according to BAYES THEOREM: Since there are fewer white cards in A, a white card is more likely to be drawn from B instead. See also PRIOR PROBABILITY.

**posterior rhizotomy** see RHIZOTOMY.

**posterior root** see DORSAL ROOT.

**postfigurative culture** a society or culture in which the young learn chiefly from their parents, grandparents, and other adults. Compare COFIGURATIVE CULTURE; PREFIGURATIVE CULTURE. [coined by U.S. anthropologist Margaret Mead (1901–1978)]

**postformal thought** the complex ways in which adults structure their thinking based on the complicated nature of adult life. It is an extension of Jean PIAGET's concept of formal operations (see FORMAL OPERATIONAL STAGE), which are developed in adolescence, to adult cognition and includes an understanding of the relative, nonabsolute nature of knowledge; an acceptance of contradiction as a basic aspect of reality; the ability to synthesize contradictory thoughts, feelings, and experiences into more coherent, all-encompassing wholes; and the ability to resolve both ill- and well-defined problems.

**postganglionic autonomic neuron** any neuron of the SYMPATHETIC NERVOUS SYSTEM whose cell body lies in a ganglion of the SYMPATHETIC CHAIN. Such neurons innervate certain target organs, such as the kidneys, ovaries, and salivary glands. Compare PREGANGLIONIC AUTONOMIC NEURON.

**postherpetic neuralgia** see HERPETIC NEURALGIA.

**post hoc comparison** any examination in which two or more quantities are compared after data have been collected and without prior plans to carry out the particular comparison. For example, after obtaining a significant F RATIO for a data set, a researcher may perform post hoc comparisons to follow up on and help explain the initial findings. Different statistical tests are required for post hoc comparisons than for A PRIORI COMPARISONS. Also called a **posteriori comparison** (or **contrast**); **post hoc contrast**; **unplanned comparison** (or **contrast**).

**post hoc test** a statistical procedure conducted on the basis of the findings obtained from previous analyses. Most commonly, the phrase refers to comparisons of the mean values obtained on a variable by different study groups, with these comparisons made only after an overall ANALYSIS OF VARIANCE has revealed a significant F RATIO, indicating that there is some effect or difference across the groups that should be examined further. Also called **follow-up test**. See POST HOC COMPARISON.

**posthypnotic amnesia** an individual's inability to re-

member what transpired during a period of hypnosis. Typically, this is induced by instruction of the hypnotist.

**posthypnotic suggestion** a suggestion made to a person during hypnosis that he or she acts out after the hypnotic trance. The suggested act may be carried out in response to a prearranged cue, and the person may not know why he or she is performing the action.

**postictal** *adj.* following a sudden attack, especially a seizure or a stroke. During the **postictal period** of a seizure, the individual may be confused, disoriented, and unable to form new memories. The length of the postictal period may vary from less than a second to many hours and depends on the type of seizure.

**postlingually deafened** becoming deaf after the acquisition of language.

**postmodernism** *n.* **1.** a number of related philosophical tendencies that developed in reaction to classical MODERNISM during the late 20th century. Most postmodern positions reject traditional metaphysics for its pursuit of a reality independent of the world of lived experience, traditional epistemology for its pursuit of certain knowledge and objectivity, and traditional ethical theories because of their reliance on metaphysics and epistemology. More specifically, they see the ideal of objective truth that has been a guiding principle in the sciences and most other disciplines since the 17th century as basically flawed: There can be no such truth, only a plurality of "narratives" and "perspectives." Postmodernism emphasizes the construction of knowledge and truth through discourse and lived experience, the similar construction of the self, and RELATIVISM in all questions of value. It is therefore a form of radical skepticism. See also POSTSTRUCTURALISM. **2.** in the arts, a general movement away from the tenets and practices of modernism that became apparent in the late 20th century. Postmodern culture is often held to be characterized by a free merging of genres and styles, a spirit of irony and pastiche, and a recognition of the importance of pop culture and the mass media. —**postmodern** *adj.*

**postmortem examination** see AUTOPSY.

**postnatal period** see POSTPARTUM PERIOD.

**postoccupancy evaluation (POE)** the measurement of user responses to a building or facility following its construction. POEs are a valuable source of information for designers, providing feedback on the validity of assumptions about how the built environment fulfills users' needs and affects their behaviors. POEs can also inform ARCHITECTURAL PROGRAMMING.

**postpartum blues** see BABY BLUES.

**postpartum depression** a MAJOR DEPRESSIVE EPISODE or, less commonly, MINOR DEPRESSIVE DISORDER that affects some women within 4 weeks to 6 months after childbirth. Compare BABY BLUES.

**postpartum period** the period of about 6 weeks following childbirth during which the mother's reproductive system gradually returns to its prepregnant state. Also called **postnatal period**; **puerperium**.

**postpartum psychosis** delusions, hallucinations, or other symptoms of impaired REALITY TESTING that occur in some women shortly after childbirth, often associated with POSTPARTUM DEPRESSION.

**postpositivism** *n.* **1.** the general position of U.S. psychology since the mid-20th century, when it ceased to be

dominated by LOGICAL POSITIVISM, HYPOTHETICO-DEDUCTIVE METHODS, and OPERATIONALISM. Postpositivistic psychology is a broader and more human endeavor, influenced by such philosophers of science as Thomas Kuhn (1922–1996) and by such developments as SOCIAL CONSTRUCTIONISM and the Continental tradition of PHENOMENOLOGY and EXISTENTIALISM. **2.** more generally, any approach to science and the PHILOSOPHY OF SCIENCE that has moved away from a position of strict POSITIVISM. —**postpositivist** *adj.*, *n.* —**post-positivistic** *adj.*

**postreconstructive surgery** surgery performed after RECONSTRUCTIVE SURGERY. It is often required to achieve optimum functioning and may involve the transfer of muscle or tendon fibers between body areas or the redirection of nerve fibers. See also COSMETIC SURGERY; PLASTIC SURGERY.

**postreinforcement pause** in operant conditioning, the period of time that elapses from the end of REINFORCEMENT until the occurrence of the next response from the class that is being reinforced.

**postrotational nystagmus** the involuntary, rapid eye movements (see NYSTAGMUS) that occur when rapid rotation of the body ceases.

**postschizophrenic depression** a depressive episode that may follow an ACUTE SCHIZOPHRENIC EPISODE. Postschizophrenic depression is viewed variously as a routine event in recovery from schizophrenic decompensation, as a mood disturbance that existed previously and was masked by the schizophrenic episode, or as a side effect to drug treatment for schizophrenia.

**poststructuralism** *n.* a broad intellectual movement that developed from French STRUCTURALISM in the late 1960s and 1970s. It is represented by the work of Jacques Derrida (1930–2004) in philosophy and criticism, Jacques Lacan (1901–1981) in philosophy and psychoanalysis, Michel FOUCAULT (1926–1984) in the history of ideas, and Hélène Cixous (1937– ) and Julia Kristeva (1941– ) in feminist theory, among others. Although these thinkers are diverse, they share a starting point in the structuralist account of language given by Swiss linguist Ferdinand de Saussure (1857–1913), which holds that linguistic SIGNS acquire meaning only through structural relationships with other signs in the same language system. Poststructuralism endorses the arbitrariness of the sign, but from this basis it proceeds to question the whole idea of fixed and determinate meaning. In the DECONSTRUCTION of Derrida, structures and systems of meaning are found to be unstable, contradictory, and endlessly self-subverting. This skepticism extends to the idea of personal identity itself: according to Derrida, the self is merely another “text” to be deconstructed.

In psychology, poststructuralism is mainly significant because of its influence on the radical psychoanalytical theories of the 1960s and 1970s. Lacan, who trained and practiced as a psychiatrist and psychoanalyst, rejected the idea of a stable autonomous EGO and reinterpreted the Freudian UNCONSCIOUS in terms of Saussure’s structural linguistics. His unconventional ideas and methods led to his exclusion from the International Society of Psychoanalysts in 1963. Both Kristeva (another practicing psychoanalyst) and Cixous were deeply influenced by Lacan’s ideas of sexuality, consciousness, and language, which are given a radical feminist twist in their writings. The best known work of Foucault, who worked in a psychiatric hospital as a young man, is his *Folie et déraison: Histoire de la folie à l’âge classique* (1961; translated in 1965 as *Madness and Civiliza-*

*tion: A History of Insanity in the Age of Reason*), which gives a tendentious history of Western attitudes to insanity, arguing that the categories of *madness* and *reason* are themselves oppressive. —**poststructuralist** *adj.*

**postsynaptic** *adj.* **1.** of or relating to the region of a neuron within a SYNAPSE that receives and responds to a neurotransmitter. **2.** of or relating to a neuron that receives a signal via a synapse. Compare PRESYNAPTIC.

**postsynaptic potential (PSP)** the electric potential at a dendrite or other surface of a neuron after an impulse has reached it across a SYNAPSE. Postsynaptic potentials may be either EXCITATORY POSTSYNAPTIC POTENTIALS or INHIBITORY POSTSYNAPTIC POTENTIALS.

**postsynaptic receptor** any receptor that is located on the cell membrane or in the interior of a postsynaptic neuron. Interaction with an effector substance (e.g., a neurotransmitter), released either by the presynaptic neuron or from another site, initiates a chain of biochemical events contributing, for example, to excitation or inhibition of the postsynaptic neuron.

**posttest** **1.** *n.* an assessment carried out after the application of some intervention, treatment, or other condition to measure any changes that have occurred. Posttests often are used in research contexts, in conjunction with PRETESTS, to isolate the effects of a variable of interest. For example, in a study examining whether a new therapy helps to alleviate depression, participants might receive the therapy and then complete a short symptom inventory, the results of which would be compared to those from an inventory taken prior to the treatment. **2.** *vb.* to administer a posttest.

**posttest counseling** a type of GENETIC COUNSELING that occurs following disclosure of genetic test results. Posttest counseling focuses on the individual’s understanding of the meaning of the test results and of the options for SCREENING. Considerable attention is given to the psychological status of the individual and to assessing whether he or she needs further medical or psychological services. Compare PRETEST COUNSELING.

**posttest-only control-group design** a research design in which an EXPERIMENTAL GROUP and a CONTROL GROUP are compared on a POSTTEST measure only. It is assumed that participants’ results on any PRETEST administered before the introduction of the experimental manipulation would be essentially equivalent across the groups due to the RANDOM ASSIGNMENT of individuals to conditions. A posttest-only control-group design is distinct from a **posttest-only design**, in which all groups receive some treatment and there is no neutral comparison.

**posttetanic potentiation (PTP)** the increase in POSTSYNAPTIC POTENTIAL elicited in target neurons by a single action potential subsequent to the induction of a tetanus (a rapid series of action potentials) in the presynaptic neuron. It is a well-known example of NEURAL PLASTICITY.

**posttraumatic amnesia (PTA)** a disturbance of memory following a physical injury (e.g., a concussion) or a psychologically upsetting experience (e.g., combat, sexual abuse). The traumatic event itself, or events following the trauma, may be forgotten. The period of forgetting may be continuous, or the person may experience vague, incomplete recollections of the traumatic event.

**posttraumatic disorders** emotional or other disturbances whose symptoms appear after an individual has en-

dured a traumatic experience. Common posttraumatic disorders include POSTTRAUMATIC STRESS DISORDER, ACUTE STRESS DISORDER, the DISSOCIATIVE DISORDERS, and some types of PHOBIAS and ANXIETY DISORDERS, as well as DEPRESSIVE DISORDER and SITUATIONAL PSYCHOSIS.

**posttraumatic epilepsy** epileptic seizures that occur as a complication of traumatic brain injury. The seizures may occur either soon after the injury or, in some cases, months or years later.

**posttraumatic personality disorder** a personality disorder occasionally observed after a severe head injury. Some individuals become indifferent and withdrawn, but most are irritable, impulsive, petulant, extremely selfish, and irresponsible. Older individuals and those with frontal-lobe damage may show impaired memory with CONFABULATION.

**posttraumatic stress disorder (PTSD)** in *DSM-IV-TR*, a disorder that may result when an individual lives through or witnesses an event in which he or she believes that there is a threat to life or physical integrity and safety and experiences fear, terror, or helplessness. The symptoms are characterized by (a) reexperiencing the trauma in painful recollections, flashbacks, or recurrent dreams or nightmares; (b) avoidance of activities or places that recall the traumatic event, as well as diminished responsiveness (emotional anesthesia or numbing), with disinterest in significant activities and with feelings of detachment and estrangement from others; and (c) chronic physiological arousal, leading to such symptoms as an exaggerated startle response, disturbed sleep, difficulty in concentrating or remembering, and guilt about surviving the trauma when others did not (see SURVIVOR GUILT). Subtypes are CHRONIC POSTTRAUMATIC STRESS DISORDER and DELAYED POSTTRAUMATIC STRESS DISORDER. When the symptoms do not last longer than 4 weeks, a diagnosis of ACUTE STRESS DISORDER is given instead. Changes in PTSD criteria from *DSM-IV-TR* to *DSM-5* include the following: Exposure to the traumatic event may be secondhand if the event happens to a loved one or if there is repeated exposure to aversive details (e.g., as with first responders performing their work in the case of a disaster); the subjective criterion requiring that the person feel fear, terror, or helplessness has been eliminated; symptom clusters have been recategorized, with additional symptoms; and separate criteria have been developed for children age 6 years or younger.

**posttreatment follow-up** a periodic check on the progress of people who have received some form of psychotherapeutic or medical treatment. In research studies, posttreatment follow-up is used to see if the effects of treatment are maintained or if relapse occurs. If the effects of treatment are maintained, it is inferred that the treatment has lasting rather than temporary effects.

**postulate** *n.* see AXIOM.

**postural aftereffect** a change in posture that arises as an aftereffect of prior stimulation. For example, when viewing a moving scene, a person typically leans in the direction of the motion. When viewing ends, body posture returns to a vertical position and then, briefly, leans in the opposite direction.

**postural arm drift** the drift of the arms from their original position when an individual is required to hold them outstretched and in a static position, with the eyes closed. The drift, if it occurs, is usually toward the midline and

may be an indication of a parietal lesion. Also called **parietal drift**.

**postural control** the ability to control the position of one's body. The first landmark in the development of postural control occurs at about 3 weeks of age, when a prone infant is first able to lift the head and raise the chin. Within a few weeks, further steps in postural control are achieved, such as holding the head erect and turning it and sitting with and then without support.

**postural hypotension** see ORTHOSTATIC HYPOTENSION.

**postural mirroring** the mimicking of another individual's stance, gestures, or other nonverbal behaviors, whether fully or partially. For example, if one person crosses his or her arms during a conversation and the other person subsequently does the same, then postural mirroring has occurred. The phenomenon tends to be non-conscious and may even induce affective similarities in participants (e.g., a person mirroring the posture of someone who is anxious may then feel anxious, too). Also called **postural echo**. See MIRROR NEURON.

**postural reflex** any of a variety of automatic movements that serve to maintain body posture. See also STANCE REFLEX.

**postural set** a body position, characterized by increased muscle tone, that is adopted in preparation for a response, such as a baseball batter's stance before a pitch.

**postural tremor** see ACTION TREMOR.

**posture** *n.* **1.** the position or bearing of the body. Types of posture include **erect** (upright), **recumbent** (reclining), **prone** (lying face down), and **supine** (lying face up). Movement typically involves coordinated changes in posture (e.g., to maintain balance or distribute forces). **2.** a rationalized mental position or attitude. —**postural** *adj.*

**posturing** *n.* the assumption of a bizarre or inappropriate body position or attitude for an extended period of time. It is commonly observed in CATATONIA.

**postvention** *n.* support services offered to the bereaved survivors (e.g., family, friends, classmates, coworkers) of those who have died by suicide or as a result of trauma. [defined by Edwin S. SHNEIDMAN]

**postventral nucleus** see VENTROPOSTERIOR NUCLEUS.

**postvoluntary attention** attention that has been captured by an absorbing and meaningful activity and that can be sustained enjoyably and productively for long periods of time. Such attention differs from INVOLUNTARY ATTENTION in not being passive and from VOLUNTARY ATTENTION in not being experienced as effortful. See also EFFORTLESS ATTENTION; FLOW.

**pot** *n.* slang for marijuana. See CANNABIS.

**potassium channel** see ION CHANNEL.

**potency** *n.* **1.** the ability of a male to perform sexual intercourse, that is, to maintain an erection and achieve ejaculation. Compare IMPOTENCE. **2.** in pharmacology, see DOSE-RESPONSE RELATIONSHIP. —**potent** *adj.*

**potential** *n.* **1.** the capacity to develop or come into existence. **2.** electric potential, measured in volts: a property of an electric field equal to the energy needed to bring one unit of electric charge from infinity to a given point. The potential difference between two points is the driving force that causes a current to flow. Because messages in the ner-

vous system are conveyed by electrochemical potentials, many kinds of potential are of importance in neuroscience and biological psychology, including the ACTION POTENTIAL, AFTERPOTENTIAL, GRADED POTENTIAL, LOCAL POTENTIAL, MEMBRANE POTENTIAL, POSTSYNAPTIC POTENTIAL, and RESTING POTENTIAL. **3.** in philosophy, see ACTUAL.

**potential-stress score** see LIFE-CHANGE UNIT.

**potentiation** *n.* a form of DRUG INTERACTION in which the addition of a second drug intensifies certain properties of the first drug administered. It often refers to the ability of a nontoxic drug to render more severe the effects of a toxic drug than when the toxic agent is administered singly.

**potlatch** *n.* a ceremony among some Native Americans of the northwestern United States that involves a feast and the giving of gifts for the redistribution and reciprocity of wealth. The status of families is established not by what they have but by what they share.

**Pötzl phenomenon (Poetzl phenomenon)** the claim that words or images that are presented subliminally may appear in imagery or dreams a short time later. It is cited as an example of SUBLIMINAL PERCEPTION. [Otto Pötzl (1877–1962), Austrian neurologist and psychiatrist]

**Pötzl's syndrome** a form of pure ALEXIA associated with visual field defects and disturbances of the color sense. The syndrome is believed to be the result of a lesion in the medullary layer of the LINGUAL GYRUS of the dominant hemisphere of the brain, with damage to the CORPUS CALLOSUM. [Otto Pötzl]

**poverty of content of speech** speech that is adequate in quantity but too vague, repetitious, and lacking in content to be qualitatively adequate. It is frequently observed in schizophrenia and is distinct from POVERTY OF SPEECH, in which the quantity of speech is diminished.

**poverty of ideas** a thought disturbance, often associated with schizophrenia, dementia, and severe depression, in which there is reduced spontaneity and productivity of thought as evidenced by speech that is vague or full of simple or meaningless repetitions or stereotyped phrases. The term is sometimes used interchangeably with INTELLECTUAL IMPOVERISHMENT.

**poverty of speech** excessively brief speech with few elaborations that occurs in schizophrenia or occasionally in a major depressive episode. It is distinct from POVERTY OF CONTENT OF SPEECH, in which the quality of speech is diminished.

**POW** abbreviation for PRISONER OF WAR.

**power** *n.* **1.** the capacity to influence others, even when they try to resist this influence. Social power derives from a number of sources: control over rewards (REWARD POWER) and punishments or other force (COERCIVE POWER); a right to require and demand obedience (LEGITIMATE POWER); others' identification with, attraction to, or respect for the powerholder (REFERENT POWER); others' belief that the powerholder possesses superior skills and abilities (EXPERT POWER); and the powerholder's access to and use of informational resources (INFORMATIONAL POWER). **2.** a measure of how effective a statistical procedure is at identifying real differences between populations: It is the probability that use of the procedure will lead to the NULL HYPOTHESIS of no effect being rejected when the ALTERNATIVE HYPOTHESIS is true. For example, if a given statistical test has a power of .70, then there is a 70% probability that its use will result in the null hypothesis correctly being rejected as false, with

a corresponding 30% chance that its use will lead to a TYPE II ERROR. Power ranges from 0 to 1, with values of .80 or above generally considered acceptable. **3.** a mathematical notation that indicates the number of times a quantity is multiplied by itself.

**power analysis** the process of determining the number of cases or observations that a study would need to achieve a desired level of POWER with a certain EFFECT SIZE and a certain SIGNIFICANCE LEVEL. This information is particularly important because it enables a researcher to plan what resources will be needed to enroll or select the desired number of individuals.

**power base** the interpersonal origin of one individual's capacity to influence other individuals. For example, REWARD POWER is based on the influencer's control over valued resources, and LEGITIMATE POWER is based on a licit right to require and demand compliance. [proposed in 1959 by U.S. social psychologists John R. P. French Jr. (1922–2006) and Bertram Raven (1926– )]

**power-coercive strategy** in social psychology, the uses of economic, social, and political power to effect societal change, usually through nonviolent measures (e.g., organized boycotts, strikes, sit-ins, demonstrations, registration drives, lobbying). See also EMPIRICAL-RATIONAL STRATEGY; NORMATIVE-REEDUCATIVE STRATEGY.

**power distance** the degree to which a culture accepts an unequal distribution of power in organizations, institutions, or society at large. Individuals in high power distance cultures are more accepting of large power differentials than are those in low power distance cultures. [introduced by Dutch cultural psychologist Geert Hofstede (1928– )]

**power elite** the concept of a small number of powerful individuals, especially corporate, political, religious, or military leaders, who hold the highest positions of authority in their respective institutions and share a common outlook and values. This elite not only controls vast economic resources but also is thought to shape the agendas of government, business, education, and the media through its actions and attitudes. Most sociologists reject the idea of a single power elite, arguing that developed societies have a complex of overlapping elites, which often have competing values and interests. However, it is in the interests of the various groups of elites to consolidate power by building consensus among themselves. [coined by U.S. sociologist C. Wright Mills (1916–1962)]

**power function** **1.** a relationship in which the values for one variable vary according to the values of another variable raised to a power. In mathematics, it is expressed by the equation  $y = ax^b$ , where  $x$  and  $y$  are the variables and  $a$  and  $b$  are numerical constants. Power functions have been used to characterize the scales relating perceived and physical intensity, for example, as well as to characterize the relationship between response speed and practice. **2.** a formula relating different factors, such as sample size, EFFECT SIZE, and SIGNIFICANCE LEVEL, to the likelihood that use of a particular statistical procedure will lead to rejection of the NULL HYPOTHESIS when it is in fact false (see POWER). For example, a researcher may plan to use a specific statistical test to detect a medium-sized effect, evaluate the effect at the .001 significance level, and reach a desired statistical power level of .80. Using a power function, the researcher could determine the sample size needed under those conditions. Power functions may be presented in tabular form or shown graphically as **power curves**.

**power grip** the manner of grasping an object between the pads of the fingers and the palm (e.g., when using a hammer). See also **PINCH GRIP**; **PRECISION GRIP**.

**power law 1.** see **STEVENS LAW**. **2.** a generalization demonstrated by a **LEARNING CURVE** in which each increment in the performance variable (e.g., learning, memory) corresponds with a logarithmic increase in the practice variable. For instance, if the successive units of practice are 1 trial, 10 trials, and 100 trials, the resulting learning curve is a straight line.

**powerlessness** *n.* a state in which individuals either lack or believe that they lack control or influence over factors or events that affect their health (mental or physical), personal lives, or the society in which they live.

**power of the situation** a basic premise of social psychology that assumes people's thoughts, actions, and emotions are influenced substantially by the social setting. For example, the responses of participants in the **BEHAVIORAL STUDY OF OBEDIENCE** are attributed to the power of the social situation created by researcher Stanley **MILGRAM** rather than to the dispositional characteristics of the participants. See also **STANFORD PRISON STUDY**.

**power play** an aggressive technique or strategy used to achieve an end, often through the coercion of others.

**power spectral density** see **SPECTRUM LEVEL**.

**power spectrum** see **SOUND SPECTRUM**.

**power test** a type of test intended to calculate the participant's level of mastery of a particular topic under conditions of little or no time pressure. The test is designed so that items become progressively more difficult. Compare **SPEED TEST**.

**power transformation** a class of **TRANSFORMATIONS** used to make the distribution of values on a variable more closely resemble that of a **NORMAL DISTRIBUTION** and have more stable **VARIANCE**. In this approach, the obtained values are raised to some exponential quantity (e.g., squared), which preserves their original order. The **BOX-COX TRANSFORMATION** is an example of a power transformation.

**P-O-X triads** see **BALANCE THEORY**.

**PPA 1.** abbreviation for parahippocampal place area. See **PARAHIPPOCAMPAL GYRUS**. **2.** abbreviation for **PREFERRED PROVIDER ARRANGEMENT**.

**PPACA** abbreviation for **PATIENT PROTECTION AND AFFORDABLE CARE ACT**.

**PPFA** abbreviation for **PLANNED PARENTHOOD FEDERATION OF AMERICA**.

**PPO** preferred provider organization: a formally organized entity created by contractual arrangements among hospitals, physicians, employers, insurance companies, or third-party administrators to provide health care services to subscribers at a negotiated, often discounted price.

**P-P plot** abbreviation for probability-probability plot. See **PROBABILITY PLOT**.

**PPVT** abbreviation for **PEABODY PICTURE VOCABULARY TEST**.

**PQ4R** *n.* a set of study methods developed on the basis of research in cognitive psychology. The set represents six steps required for acquiring information: *preview, question, read, reflect, recite, and review.*

**PR** abbreviation for progressive ratio. See **PROGRESSIVE-RATIO SCHEDULE**.

**practical intelligence** the ability to apply one's intelligence in practical, everyday situations. In the **TRIARCHIC THEORY OF INTELLIGENCE**, it is the aspect of intelligence that requires adaptation to, shaping of, and selection of new environments. Compare **ANALYTICAL INTELLIGENCE**; **CREATIVE INTELLIGENCE**.

**practical intelligence task** a task requiring the display of practical know-how, such as consulting a map to find a location or using arithmetic to compute the prices of tickets to an athletic event. Such tasks also may require tacit knowledge that typically is not explicitly taught and that often is not even verbalized—that is, knowledge about adapting to, shaping, or selecting an environment. Compare **ACADEMIC INTELLIGENCE TASK**.

**practical significance** the extent to which a study result has meaningful applications in real-world settings. An experimental result may lack **STATISTICAL SIGNIFICANCE** or show a small **EFFECT SIZE** and yet potentially be important nonetheless. For example, consider a study showing that the consumption of baby aspirin helps prevent heart attacks. Even if the effect is small, the finding may be of practical significance if it saves lives over time. Also called **substantive significance**. See also **CLINICAL SIGNIFICANCE**; **PSYCHOLOGICAL SIGNIFICANCE**.

**practice** *n.* repetition of an act, behavior, or series of activities, often to improve performance or acquire a skill. For example, members of sports teams may engage in a pre-planned series of activities organized for such purposes as learning a pattern of play or increasing physical fitness. See also **DISTRIBUTED PRACTICE**; **MASSED PRACTICE**.

**practice effect** any change or improvement that results from practice or repetition of task items or activities. The practice effect is of particular concern in experimentation involving **WITHIN-SUBJECTS DESIGNS**, as participants' performance on the variable of interest may improve simply from repeating the activity rather than from any study manipulation imposed by the researcher.

**practice guidelines** criteria and strategies designed to assist health and mental health care providers in the recognition and treatment of specific disorders and diseases, as well as to outline ethical practice. Such guidelines are often based on the latest and best available scientific research or the considered judgment of expert committees representing specific professions or subdisciplines. See also **CLINICAL PRACTICE GUIDELINES**.

**practice theory of play** see **PLAY**.

**practice trial** the first of a series of opportunities to respond to a test or an experimental setting, which is given to participants to acquaint them with the procedures used and is therefore not scored. The use of practice trials is believed to ensure that the initial measurements of the study proper will provide more accurate assessments of participants' performance.

**practicum** *n.* supervised clinical experience offered as part of a course of study for the purpose of on-site, in-person professional training. In clinical psychology, graduate students generally complete a practicum prior to entering a full-time supervised internship program. Practicums may occur in inpatient, correctional, or residential settings or in outpatient settings such as private practices, mental health centers, and social service agencies. See also **FIELD WORK**.

**Prader–Willi syndrome (PWS)** a congenital spectrum disorder marked by short stature, hypotonia (flaccid muscles), hypogonadism (underdeveloped sex organs), obesity, insensitivity to pain, short hands and feet, mild to moderate intellectual impairment, and learning disabilities. Most cases (about 70%) occur when a segment of the paternal chromosome 15 is deleted in each cell. Another 25% of cases have two copies of the maternal chromosome 15 instead of one copy from each parent. Affected individuals have an excessive appetite and are constantly eating. When diabetes mellitus is associated with the condition, it is called **Royer's syndrome**. Also called **Prader–Labhart–Willi syndrome**; **Prader–Labhart–Willi–Fanconi syndrome**. [reported in 1956 by Andrea **Prader** (1919–2001) and Heinrich **Willi** (1900–1971), with Alexis **Labhart** (1916–1994), Swiss pediatricians]

**pragmatic aphasia** a group of disorders caused by damage to the right hemisphere of the brain that particularly affect an individual's ability to communicate appropriately in specific contexts or situations.

**pragmatic language** language that is used appropriately in a specific context or situation.

**pragmatic reasoning schema theory** a model of **CONDITIONAL REASONING** stating that people use generalized sets of context-specific, goal-dependent rules to make inferences about situations or problems. Each set of rules is abstracted from past experience and defined in terms of a specific type of pragmatic reasoning schema. For example, the **obligation schema** is a set of inference rules for situations in which the occurrence of a condition necessitates an action (e.g., if a miner gets lung cancer, then the company must pay compensation), whereas the **permission schema** applies to situations in which a precondition must be satisfied before a desired action is taken (e.g., if a customer is drinking an alcoholic beverage, then he or she must be over 21 years of age). According to the theory, the inference being tested is mapped onto different pragmatic schemata depending on the characteristics of the situation; the applicable schema then becomes the basis for reasoning, such that different schemata encourage different conclusions and different patterns of behavior. See also **WASON SELECTION TASK**. [introduced in 1985 by Hong Kong-born U.S. cognitive psychologist Patricia W. Cheng (1952– ) and Canadian-born U.S. cognitive psychologist Keith J. Holyoak (1950– )]

**pragmatics** *n.* in linguistics, the analysis of language in terms of its functional communicative properties (rather than its formal and structural properties, as in **PHONOLOGY**, **SEMANTICS**, and **GRAMMAR**) and in terms of the intentions and perspectives of its users. See also **FORM–FUNCTION DISTINCTION**; **FUNCTIONAL GRAMMAR**.

**pragmatism** *n.* a philosophical position holding that the truth value of a proposition or a theory is to be found in its practical consequences: If, for example, the hypothesis of God makes people virtuous and happy, then it may be considered true. Although some forms of pragmatism emphasize only the material consequences of an idea, more sophisticated positions, including that of William JAMES, recognize conceptual and moral consequences. Arguably, all forms of pragmatism tend toward **RELATIVISM**, because they can provide no absolute grounds—only empirical grounds—for determining truth, and no basis for judging whether the consequences in question are to be considered good or bad. See also **INSTRUMENTALISM**. [coined by Charles S. PEIRCE]—**pragmatist** *adj.*, *n.*

**Prägnanz** *n.* one of the **GESTALT PRINCIPLES OF ORGANIZATION**. It states that people tend to perceive forms as the simplest and most meaningful, stable, and complete structures that conditions permit. Also called **law** (or **principle**) of **Prägnanz**. [German: “terseness”]

**prana** *n.* see **CHI**.

**prandial drinking** intake of fluids that is stimulated by eating.

**praxiology** *n.* **1.** the study of human conduct, or the science of efficient action (from Greek *praxis*, “to do”). **2.** psychology as the study of human actions and overt behavior, to the exclusion of consciousness and metaphysical concepts. [employed by Knight DUNLAP]

**praxis** *n.* **1.** a medical name for **MOTOR PLANNING**. Inadequate praxis is **APRAXIA**. **2.** practice, as opposed to theory. **ARISTOTLE** contrasted *praxis*, or practical activity, with theoretical or rational activity. The term is sometimes used to denote knowledge derived from and expressed chiefly in practical or productive activity, as opposed to theoretical or conceptual knowledge.

**prayer** *n.* communication (voiced or contemplative) with a deity or other such entity, generally for the purposes of praise, thanksgiving, supplication, or self-examination or to seek forgiveness, guidance, or serenity. The behavior has been studied periodically at least since William JAMES (see **PSYCHOLOGY OF RELIGION**), with varied results. For instance, researchers and practitioners have noted, on the one hand, that prayer can be used as a defense or escape from the exploration of painful issues and as a form of magical thinking and, on the other hand, that it can be both cognitively meaningful and therapeutically beneficial in some conditions for those with specific religious beliefs or **SPIRITUALITY**. Much work has been done, since the late 1970s, by a growing body of researchers to integrate religious values and practices with psychotherapy. In appropriate circumstances, prayer may be explicitly used by some therapists as a component of intervention and treatment. The therapist and client may pray individually or together for such goals as personal or interpersonal healing, forgiveness, and the ability to examine problems freely and with discernment.

**PRE** abbreviation for **PARTIAL REINFORCEMENT EFFECT**.

**preadolescence** *n.* the period of childhood preceding adolescence, comprising approximately the 2 years preceding the onset of puberty. Also called **prepubertal stage**; **prepuberty**; **prepubescence**. —**preadolescent** *adj.*, *n.*

**preaffference** *n.* a central brain process in which the **SOMATOSENSORY AREA** is primed to expect the particular sensory inputs (sights, sounds, etc.) that are predicted as the consequence of an intended motor action. It is the means by which, for example, a person turning his or her head understands immediately that the motion perceived is in the body and not in the external world. Preaffference has also been proposed as a neural basis for what is experienced subjectively as **ATTENTION** or **EXPECTANCY**. Compare **REAFFERENCE**. See also **BRAIN COMPARATOR**; **COROLLARY DISCHARGE**; **REAFFERENCE PRINCIPLE**. [described by U.S. neuroscientist Walter J. Freeman III (1927– )]

**preattentive processing** cognitive processing of a stimulus that occurs nonconsciously before attention has focused on this particular stimulus from among the array of those present in a given environment. Preattentive processing is thought to identify basic stimulus features in parallel, with high capacity. Also called **preattentive**

**analysis; preperceptual processing.** See also PARALLEL PROCESSING.

**preaversive stimulus** in conditioning, a stimulus that precedes the presentation of an AVERSIVE STIMULUS. See CONDITIONED SUPPRESSION.

**precategorical acoustic storage (PAS)** a SENSORY MEMORY that momentarily retains auditory information before it is interpreted and comprehended: a theoretical explanation of the phenomenon of ECHOIC MEMORY. PAS is regarded as a parallel store to the visual system's ICONIC MEMORY. [proposed in 1969 by U.S. psychologist Robert George Crowder (1939–2000) and British psychologist John Morton (1933– )]

**precausal thinking** the tendency of a young child (under the age of 8) to perceive natural phenomena, such as rain, wind, and clouds, in terms of intentions and willful acts, that is, in anthropomorphic rather than mechanical terms. See also ANIMISM. [first described by Jean PIAGET]

**precedence effect 1.** a phenomenon in which perception of the source of a sound precludes or interferes with attention to reflections of this sound from different locations. For example, if a sound is produced by a particular source and is then reflected off the walls, the listener only perceives the first source, provided that the sound from the second source arrives within a short period of time (less than 70 ms). **2.** the tendency for global features of a stimulus to dominate local features in performance tasks.

**precentral gyrus** a ridge in the FRONTAL LOBE of the brain, just in front of the CENTRAL SULCUS, that is crucial for motor control, being the site of the MOTOR AREA.

**prechiasmatic visual deficit** a visual impairment caused by damage to the part of the visual system anterior to (i.e., earlier in visual processing than) the OPTIC CHIASM. This can affect one eye (e.g., in cases of disease or injury to the eye or optic nerve) or both eyes (e.g., in cases involving the optic chiasm itself). See also HETERONYMOUS HEMIANOPIA; CHIASMAL SYNDROME.

**precipitating cause** the particular factor, sometimes a traumatic or stressful experience, that is the immediate cause of a mental or physical disorder. A single precipitating event may turn a latent condition into the manifest form of the disorder. Compare PREDISPOSING CAUSE.

**precision** *n.* a measure of accuracy. In statistics, an estimate with a small STANDARD ERROR is regarded as having a high degree of precision. —**precise** *adj.*

**precision grip** the manner of grasping an object between the opposed tactile pads of the thumb and fingertips (e.g., when using a pen). See also PINCH GRIP; POWER GRIP.

**precision of process** (symbol:  $h$ ) an index of proximity of a series of psychophysical measures to the mean. It is the reciprocal of the VARIANCE, that is,  $h = 1/\sigma^2$ .

**preclinical psychopharmacology** investigation that precedes the actual clinical application of a new psychotropic drug on an individual patient or patient population. It usually includes laboratory studies of the pharmacological mechanisms of the drug, extrapolation of research data into human-use terms, and evaluation of possible interactions with current drugs or in patients with various medical conditions.

**precocial** *adj.* describing nonhuman animals that show a high degree of behavior development at birth or hatching. For example, young geese can follow their mother and for-

age for food a day after hatching, whereas other birds must be provisioned for several weeks before they leave the nest. In mammals, ungulates (e.g., cattle, sheep) are much more behaviorally advanced at birth than primates. Compare ALTRICIAL.

**precocious puberty** abnormally early sexual maturity, usually before the age of 8 years in a girl and 9 years in a boy. True precocious puberty is marked by mature gonads capable of ovulation or spermatogenesis, adult levels of female or male sex hormones, and secondary sexual characteristics. **Pseudoprecocious puberty** is a condition usually caused by an endocrine tumor that results only in premature development of secondary sex characteristics. Also called **pubertas praecox**.

**precocity** *n.* very early, often premature, development of physical or mental functions and characteristics. —**precocious** *adj.*

**precognition** *n.* in parapsychology, the purported ability to see or experience future events through some form of EXTRASENSORY PERCEPTION. In a test of precognition, the participant would be asked to predict the outcome of a future set of trials involving ZENER CARDS or similar stimulus materials. Compare RETROCOGNITION. See also FORWARD DISPLACEMENT. —**precognitive** *adj.*

**precompetition anxiety** increased cognitive and physiological arousal before a competition. Precompetition anxiety may facilitate or inhibit performance, depending on the performer's perception of readiness or apprehension. See DEBILITATIVE ANXIETY; FACILITATIVE ANXIETY.

**precompetition imagery** the use of IMAGERY before a competition for the MENTAL REHEARSAL of performance segments or to assist in achieving an IDEAL PERFORMANCE STATE.

**preconception** *n.* a belief or expectation related to some ATTITUDE OBJECT that is held before substantial information about the object is gained.

**preconscious (Pcs) 1.** *adj.* denoting or relating to unattended mental contents that can be readily accessed and brought to awareness. **2.** *n.* in the classical psychoanalytic theory of Sigmund FREUD, the level of the psyche that contains thoughts, feelings, and impulses not presently in awareness but that can be more or less readily called into consciousness. Examples are the face of a friend, a verbal cliché, or the memory of a recent event. Compare CONSCIOUS; SUBCONSCIOUS; UNCONSCIOUS.

**preconscious thinking 1.** the pictorial, magical, fantasy thinking of children that precedes the development of logical thinking. [introduced in 1938 by Austrian psychoanalyst Otto Fenichel (1897–1946)] **2.** in psychoanalytic theory, thinking that takes place at the level of the PRECONSCIOUS. Preconscious thinking has sometimes been cited to explain apparently unconscious, intuitive thought processes, as well as certain kinds of creative leaps and insights.

**preconventional level** in KOHLBERG'S THEORY OF MORAL DEVELOPMENT, the first level of moral reasoning, characterized by the child's evaluation of actions in terms of material consequences. This level is divided into two stages: the earlier **punishment and obedience orientation** (Stage 1 in Kohlberg's overall theory), in which moral behavior is that which avoids punishment; and the later **naïve hedonism** (or **instrumental relativist orientation**; Stage 2), in which moral behavior is that which obtains re-



ward or serves one's needs. Also called **preconventional morality**. See also CONVENTIONAL LEVEL; POSTCONVENTIONAL LEVEL.

**precue** *n.* a piece of advance information available from the environment, both in real-life and experimental situations, giving partial details that can be used to constrain planning for an upcoming movement. Studies of how precues reduce the time necessary for MOTOR PLANNING once the full movement specification is made available have been an important tool in discerning the structure of motor plans.

**precuneus** *n.* an area on the medial (inner) surface of the PARIETAL LOBE of each cerebral hemisphere in the brain. Located between the PARIETO-OCCIPITAL SULCUS and the CINGULATE SULCUS, it is involved in a variety of cognitive functions. Immediately behind the precuneus is the wedge-shaped CUNEUS. —**precuneate** *adj.*

**precursor** *n.* in biochemistry, a compound from which another is formed by a chemical reaction. For example, TYROSINE is a precursor of the catecholamine neurotransmitters (e.g., norepinephrine, dopamine).

**predation** *n.* the act or practice in which one nonhuman animal (the predator) stalks, captures, and kills another animal (the prey) for food. Prey choice can be broad or highly specific, and some species store captured prey for future use or share it with young or other group members. Prey possess numerous defenses, however, some of which are restricted to a few populations (e.g., physical features such as the quills of porcupine) whereas others are seen in multiple populations (e.g., VIGILANCE, DEATH FEIGNING). Predation is an important mechanism of NATURAL SELECTION, as both predators and prey continuously adapt to more effectively attack and evade one another, respectively. —**predator** *n.* —**predatory** *adj.*

**predator** *n.* **1.** a nonhuman animal that naturally preys on others to obtain its food. **2.** a person or organization whose behavior is rapacious or exploitative. —**predatory** *adj.*

**predator pressure** the influence of predators on their prey, affecting both current numbers of prey and their survival for reproduction.

**predatory aggression** aggression directed toward the capture of prey. Predatory aggression is more properly considered a form of FORAGING than aggression per se.

**predatory paraphilia** sexual interest and arousal focused on an activity that involves an unwilling individual rather than a consenting partner. Examples include EXHIBITIONISM and FROTTEURISM.

**predecisional negative shift** that component of the READINESS POTENTIAL that precedes any conscious awareness of a wish to act. Investigations with electroencephalography suggest that it can be detected some 350 ms before the individual reports a decision to make a movement and some 550 ms before the movement occurs. The finding is controversial because it implies that behavior is instigated nonconsciously and hence that FREE WILL is illusory; the ECOLOGICAL VALIDITY of such experiments has also been questioned. [reported by U.S. physiologist Benjamin Libet (1916–2007)]

**predestination** *n.* in Christian theology, the belief or doctrine that God has foreordained salvation for certain chosen individuals, not for any merit of their own but

purely according to his grace. This doctrine was taught systematically by early Church father Augustine of Hippo (354–430) and revived by 16th-century reformers Martin Luther (1483–1546) and John Calvin (1509–1564). Calvin's system is sometimes described as one of **double predestination**, as it maintains that God also foreordained a portion of humankind to damnation, an idea that raises particular moral difficulties. Predestination is a form of theological DETERMINISM, as it effectively denies human FREE WILL and moral responsibility. The concept has always been the subject of intense debate and is now rejected by most mainstream Christian thinkers. See CALVINISM.

**predicate** *n.* **1.** in linguistics, the part of a sentence or clause that is not the SUBJECT but asserts a property, action, or condition of the subject. The predicate of a sentence may range from a single intransitive VERB (as in *She smiled*) to a long and complex construction. See also COMPLEMENT. **2.** in logic, a property or characteristic that is attributed to the subject of a proposition. In Aristotelian and Scholastic logic (see SCHOLASTICISM), a predicate is a second term that is stated to have a particular relation to the subject of a proposition, as, for example, *man* in *Edward is a man* or *mortal* in *Man is mortal*. —**predicative** *adj.*

**predicate analysis** the system of SYMBOLIC LOGIC that is concerned with the relationships between the elements within individual propositions, as well as with the relationships between propositions as wholes. Also called **predicate calculus**. Compare PROPOSITIONAL ANALYSIS.

**predicate thinking** a thought process in which objects are considered similar or even identical because they share a particular attribute. Jean PIAGET considered such thinking to be typical of the PREOPERATIONAL STAGE of early cognitive development. Psychoanalysis associates it with the PRIMARY PROCESS thinking that manifests itself in dreams and fantasies and dominates the ID.

**prediction** *n.* **1.** an attempt to foretell what will happen in a particular case, generally on the basis of past instances or accepted principles. A **theoretical prediction** gives the expected results of an experiment or controlled observation in accordance with the logic of a particular theory. In science, the use of prediction and observation to test hypotheses is a cornerstone of the empirical method (see FALSIFIABILITY; FALSIFICATIONISM; RISKY PREDICTION). By their very nature, the theories, constructs, and explanatory models current in psychology are not always open to direct validation or falsification in this way; however, in psychological assessment, personality tests and other psychometric instruments can often predict participants' behaviors or other characteristics with an impressive level of accuracy. See also PROBABILISM; PSEUDOSCIENCE. **2.** in parapsychology and the occult arts, see DIVINATION; PRECOGNITION. —**predict** *vb.* —**predictable** *adj.* —**predictive** *adj.*

**predictive discriminant analysis** a multivariate procedure that distinguishes between two or more categories of a future outcome on the basis of several current assessments of predictor or explanatory variables. More specifically, the technique combines variables measured at one point in time to produce the highest possible association with different levels or categories of an outcome measured at a subsequent point in time. For example, a researcher might measure daily levels of exercise, cholesterol, and average stress and use this information to predict which individuals will have a diagnosis of serious, mild, or

no heart disease 6 months later. Compare DESCRIPTIVE DISCRIMINANT ANALYSIS.

**predictive efficiency** **1.** the number or proportion of correct predictions that can be made from a particular test or model. **2.** the gain in utility (explanatory information) obtained by adding more predictor or independent variables to a REGRESSION EQUATION. For example, the accuracy of a student's predicted college grade-point average may be increased if one considers high school grade-point average in addition to Scholastic Assessment Test score.

**predictive research** empirical research concerned with forecasting future events or behavior: the assessment of variables at one point in time so as to predict a phenomenon assessed at a later point in time. For example, a researcher might collect high school data, such as grades, extracurricular activities, teacher evaluations, advanced courses taken, and standardized test scores, in order to predict such college success measures as grade-point average at graduation, awards received, and likelihood of pursuing further education. Compare EXPLANATORY RESEARCH.

**predictive testing** see PREDISPOSITION.

**predictive validity** evidence that a test score or other measurement correlates with a variable that can only be assessed at some point after the test has been administered or the measurement made. For example, the predictive validity of a test designed to predict the onset of a disease would be strong if high test scores were associated with individuals who later developed that disease. It is one of three types of CRITERION VALIDITY. Also called **predictive criterion-related validity**; **prospective validity**. See also CONCURRENT VALIDITY; RETROSPECTIVE VALIDITY.

**predictive value** **1.** the ability of a test or scale to correctly classify items into mutually exclusive categories or states. Predictive value often is determined using DECISION THEORY methods, such as RECEIVER-OPERATING CHARACTERISTIC CURVES. **2.** the percentage of times that the obtained value on a given test is the true value. Also called **predictive power**.

**predictor variable** a variable used to estimate, forecast, or project future events or circumstances. In personnel selection, for example, predictors such as qualifications, relevant work experience, and job-specific skills (e.g., computer proficiency, ability to speak a particular language) may be used to estimate an applicant's future job performance. In REGRESSION ANALYSIS and other models, predictor variables are investigated to assess the strength and direction of their association with an outcome, criterion, or DEPENDENT VARIABLE. When more than one variable is included in the analysis, the relative weights of each in determining the outcome are evaluated as well. This term sometimes is used interchangeably with INDEPENDENT VARIABLE. Also called **predictor**.

**predisposing cause** a factor that increases the probability that a mental or physical disorder or hereditary characteristic will develop but that is not the immediate cause of it. Compare PRECIPITATING CAUSE.

**predisposition** *n.* **1.** a susceptibility to developing a disorder or disease, the actual development of which may be initiated by the interaction of certain biological, psychological, or environmental factors. **2.** in genetics, any hereditary factor that, given the necessary conditions, will lead to the development of a certain trait or disease. **Predisposition testing** is genetic testing for mutations that are less than

100% penetrant (see PENETRANCE). Thus, a positive test result indicates that the individual has an increased predisposition to develop the disease but might not necessarily do so. If a mutation is fully penetrant, the testing is referred to as **predictive testing**, since all those who carry the mutated gene will develop the disease.

**PREE** abbreviation for partial reinforcement extinction effect. See PARTIAL REINFORCEMENT EFFECT.

**preclampsia** *n.* an increase in blood pressure in a pregnant woman, associated with edema or proteinuria (the presence of protein in the urine) or both. There may also be headaches, dizziness, and nervous irritability. Preclampsia may progress to the serious condition of ECLAMPSIA.

**preening** *n.* a form of GROOMING in which birds pick through their own feathers or those of another group member. —**preen** *vb.*

**preestablished harmony** a principle invoked by Gottfried Wilhelm LEIBNIZ to explain how MONADS behave in a coordinated and orderly fashion, even though each is independent and follows its own preestablished end. The same principle is held to explain the coordinated interaction between the physical and nonphysical realms (see MIND—BODY PROBLEM). According to Leibniz, God is the origin of the preestablished harmony.

**preexperimental design** a research design or study with no CONTROL GROUP and no random assignment of participants to experimental conditions. Examples include the ONE-SHOT CASE STUDY and the ONE-GROUP PRETEST—POSTTEST DESIGN. Although such a design is of minimal value in establishing causality, it may be used when it is not possible to identify an appropriate control and circumstances prohibit randomization.

**preference** *n.* **1.** in conditioning, the probability of occurrence of one of two or more concurrently available responses, usually expressed as either a RELATIVE FREQUENCY (compared to the frequency of all the measured responses) or a ratio. **2.** more generally, the act of choosing one alternative over others. —**preferential** *adj.*

**preference for consistency** a personality trait reflecting the extent to which a person desires to maintain consistency among elements in his or her cognitive system. See also COGNITIVE DISSONANCE; COGNITIVE DISSONANCE THEORY. [originally proposed by U.S. psychologists Robert B. Cialdini (1945– ), Melanie R. Trost, and Jason T. Newsom (1965– )]

**preference method** a research technique in which an organism is presented with several stimuli and is required to choose one. Examples of such methods are those in which a nonhuman animal chooses a certain food or a human states a preference for one of several paintings, activities, or vocations.

**preference test** any measure used in research to determine an individual's choice between two or more alternatives and what that choice might indicate behaviorally or affectively. An example might be a test in which an infant is required to choose between a toy with a smiling face and one with a frown in order to assess the child's affect; another would be a marketing study in which consumers are asked to select between competing products, such as two or more soft drinks.

**preferential effect** in parapsychology experiments, the finding that a participant's "calls," or guesses, are more accurate for one set of TARGETS in an experiment (e.g., die

faces with high values, ZENER CARDS with stars) than for another (e.g., die faces with low values, Zener cards with crosses) or even for one type of testing condition over another when the experiments ostensibly test the same PRETERNATURAL ability. See also DECLINE EFFECT; DIFFERENTIAL EFFECT; FOCUSING EFFECT; POSITION EFFECT; SHEEP–GOAT EFFECT.

**preferential looking technique** an experimental method for assessing the perceptual capabilities of nonverbal individuals (e.g., human infants, nonhuman animals). Infants will preferentially fixate a “more interesting” stimulus when it is presented at the same time with a “less interesting” stimulus, but only if the stimuli can be distinguished from one another. To minimize bias, on each trial the investigator is positioned so that he or she can observe the infant and make a judgment about which stimulus the infant fixates, but the stimuli themselves are visible only to the infant. To assess visual acuity, for example, on the first trial a coarse ACUITY GRATING is paired with a homogeneous gray stimulus of the same mean luminance. The infant preferentially looks at the grating. On successive trials, the SPATIAL FREQUENCY of the grating is increased (the bars are made narrower) and the position of the grating versus the homogeneous field is randomized. When the grating can no longer be discriminated by the infant, the likelihood that the grating will be chosen for fixation will drop to chance. [developed by Robert L. FANTZ]

**preferential matching** in an ESP FREE-RESPONSE TEST, the use of a judge to evaluate a participant’s “calls,” or guesses, regarding their similarity to possible TARGETS.

**preferred noise criterion (PNC)** a noise level set for steady ambient noise in enclosed spaces and used to determine or test for allowable background noise levels.

**preferred provider arrangement (PPA)** a contractual arrangement between a health care insurer and a health care provider or group of providers who agree to offer services at reduced or prenegotiated rates.

**preferred provider organization** see PPO.

**prefigurative culture** a society or culture in which people typically learn from those younger than themselves. Because of the extremely rapid rate of social and technological change in the modern world, it has been proposed that contemporary Western society may be moving toward a prefigurative culture in which the young possess a keener intuition of the present than do their elders. Compare COFIGURATIVE CULTURE; POSTFIGURATIVE CULTURE. [coined by U.S. anthropologist Margaret Mead (1901–1978)]

**prefix** *n.* in linguistics, a MORPHEME that is added to the beginning of a word to create a derived form, such as *un-* in *unlikely* or *ex-* in *ex-wife*. See AFFIXATION; INFIX; SUFFIX.

**preformism** *n.* the biological theory, now discredited, that development consists of the emerging into mature form of the traits and capacities that exist in prototypical form in the germ cell. An early example of preformism was the 16th- and 17th-century notion of the HOMUNCULUS, a minute but completely formed human body believed to exist in the spermatozoon. Preformism contrasts with the epigenetic principle of successive differentiation in complex and cumulative stages of development (see EPIGENESIS).

**prefrontal cortex** the most anterior (forward) part of the cerebral cortex of each frontal lobe in the brain. Divided into a dorsolateral region and an orbitofrontal region (see ORBITOFRONTAL CORTEX), the prefrontal cortex func-

tions in attention, planning, working memory, and the expression of emotions and appropriate social behaviors; its development in humans parallels improvement in cognitive control and behavioral inhibition as an individual grows into adulthood. By contrast, damage to the prefrontal cortex leads to emotional, motor, and cognitive impairments. Also called **frontal association area**.

**prefrontal lobe** the furthest forward area of each CEREBRAL HEMISPHERE of the brain, which is concerned with such functions as memory and learning, emotion, and social behavior. See also FRONTAL LOBE.

**prefrontal lobotomy** see LOBOTOMY.

**preganglionic autonomic neuron** any neuron of the SYMPATHETIC NERVOUS SYSTEM whose cell body is located in the central nervous system and that sends its axon to a ganglion in the SYMPATHETIC CHAIN. Here it may connect to a POSTGANGLIONIC AUTONOMIC NEURON, which can innervate such organs as the kidneys.

**pregenital organization** in the classical psychoanalytic theory of Sigmund FREUD, the organization of LIBIDO functions before the GENITAL STAGE of psychosexual development.

**pregenital phase** in the classical psychoanalytic theory of Sigmund FREUD, the period of psychosexual development that precedes the organization of the LIBIDO around the genital zone. This period encompasses the ANAL STAGE, the ORAL STAGE, and according to some theorists, the PHALLIC STAGE. Other theorists use the term synonymously with the PREOEDIPAL phase.

**pregnancy** *n.* the state of a woman who is carrying a developing embryo or fetus, which normally lasts about 266 days from conception until the birth of the baby (see PRENATAL PERIOD). Embryonic development normally occurs within the uterus, but occasionally it may be extrauterine (see ECTOPIC PREGNANCY). Also called **fetation**; **gravidity**. See also ADOLESCENT PREGNANCY; PSEUDOCYESIS.

**pregnancy brain** see BABY BRAIN.

**prehension** *n.* the act of grasping, clasping, or seizing an object or supporting the body, usually with an appendage adapted for that purpose. For example, the hands of human beings and other primates and the tails of certain New World monkeys are **prehensile**.

**prejudice** *n.* **1.** a negative attitude toward another person or group formed in advance of any experience with that person or group. Prejudices include an affective component (emotions that range from mild nervousness to hatred), a cognitive component (assumptions and beliefs about groups, including STEREOTYPES), and a behavioral component (negative behaviors, including DISCRIMINATION and violence). They tend to be resistant to change because they distort the prejudiced individual’s perception of information pertaining to the group. Prejudice based on racial grouping is RACISM; prejudice based on sex is SEXISM; prejudice based on chronological age is AGEISM; and prejudice based on disability is ABLEISM. **2.** any preconceived attitude or view, whether favorable or unfavorable.

**prekindergarten** *n.* see SCHOOL READINESS.

**prelingually deafened** being congenitally deaf or becoming deaf prior to the acquisition of language.

**prelinguistic** *adj.* denoting or relating to the period of an infant’s life before he or she has acquired the power of speech. The **prelinguistic period** includes the earliest infant

vocalizations as well as the babbling stage typical of the second half of the first year. **HOLOPHRASES** usually emerge around the time of the child's first birthday.

**preliterate** *adj.* denoting a child who has not yet acquired the ability to read and write. Also called **nonliterate**.

**preloading** *n.* an experimental procedure in which food, water, or some other nutritive substance is introduced into the stomach or another part of a nonhuman animal's digestive system prior to giving the animal access to food or water. The effect of preloading on the animal's eating or drinking behavior is then measured.

**prelogical thinking** in psychoanalytic theory, primitive thought processes that are characteristic of early childhood, when thought is under the control of the **PLEASURE PRINCIPLE** rather than the **REALITY PRINCIPLE**. Such thinking may also occur later in life, as in daydreaming, in which **WISH FULFILLMENT** is dominant, or in psychosis. See also **MAGICAL THINKING**; **PRIMARY PROCESS**.

**Premack's principle** the view that the opportunity to engage in behavior with a relatively high **BASELINE** probability will reinforce behavior of lower baseline probability. For example, a hungry rat may have a high probability of eating but a lower probability of pressing a lever. Making the opportunity to eat depend on pressing the lever will result in reinforcement of lever pressing. Also called **Premack's rule**. [David Premack (1925– ), U.S. psychologist]

**premarital counseling** educational and supportive guidance to individuals planning marriage. Provided by a member of the clergy trained in counseling, a therapist, or some other appropriately qualified person, premarital counseling may address such matters as the timing of marriage, spousal rights and responsibilities, birth-control methods, and sexual intimacy and may use assessment instruments to identify and thereby address potential conflicts in the marriage.

**premarital sex** sexual relations before marriage. See also **FORNICATION**.

**premature adrenarche** see **ADRENARCHÉ**.

**premature aging** accelerated aging caused by environmental factors (e.g., sun exposure, smoking) or by genetic syndromes or other disease. See **AGING DISORDER**.

**premature ejaculation** a sexual dysfunction in which ejaculation occurs with minimal sexual stimulation, before, on, or shortly after **PENETRATION** or simply earlier than desired. The diagnosis takes into account such factors as age, novelty of the sexual partner, and the frequency and duration of intercourse. The diagnosis does not apply if the disturbance is due to the direct effect of a substance (e.g., withdrawal from opioids). See also **SQUEEZE TECHNIQUE**.

**premature termination** see **TERMINATION**.

**prematurity** *n.* a state of underdevelopment, particularly in an infant born before it has completed the full gestational period of a normal pregnancy. Premature (preterm) infants have low birth weight and are at risk for such complications as **RESPIRATORY DISTRESS SYNDROME** and **JAUNDICE**. See also **PRENATAL STRESS**.

**premeditation** *n.* a deliberate resolve to commit a crime, especially a violent crime, as revealed by evidence of planning or other forethought. A premeditated crime is

often considered more serious than the same offense committed intentionally but without prior resolve. See **MALICE AFORETHOUGHT**. —**premeditated** *adj.*

**premenstrual dysphoric disorder** a **MOOD DISORDER** in women that begins in the week prior to the onset of menstruation and subsides within the first few days of menstruation. Women experience mood swings, including markedly depressed mood, anxiety, feelings of helplessness, and decreased interest in activities. In contrast to **PREMENSTRUAL SYNDROME**, the symptoms must be severe enough to impair functioning in social activities, work, and relationships. Only a small percentage of women with premenstrual syndrome meet criteria for this disorder. Also called **late luteal phase dysphoric disorder**.

**premenstrual syndrome (PMS)** a collection of psychological and physical symptoms experienced by women during the week prior to the onset of menstruation and subsiding within the first few days of menstruation. Symptoms can include mood swings, irritability, fatigue, headache, bloating, abdominal discomfort, and breast tenderness. In contrast to the more severe **PREMENSTRUAL DYSPHORIC DISORDER**, premenstrual syndrome has a less distinctive pattern of symptoms and does not involve major impairment in social and occupational functioning. Also called **premenstrual stress syndrome**; **premenstrual tension**.

**premise** *n.* a proposition forming part of a larger argument; a statement from which a further statement is to be deduced, especially as one of a series of such steps leading to a **CONCLUSION**.

**premonitory dream** a dream that appears to give advance notice or warning of some future event. See also **CLAIRVOYANT DREAM**.

**premoral stage 1**, in Jean **PIAGET**'s theory of moral development, the stage at which young children (under the age of 5) are unaware of rules as cooperative agreements; that is, they are unable to distinguish right from wrong. Compare **AUTONOMOUS STAGE**; **HETERONOMOUS STAGE**. **2**, the stage that precedes the **PRECONVENTIONAL LEVEL** in **KOHLBERG'S THEORY OF MORAL DEVELOPMENT** and corresponds to infancy (birth to roughly 18 months).

**premorbid** *adj.* characterizing an individual's condition before the onset of some disease or disorder. —**premorbid-ity** *n.*

**premorbid abilities** see **PREMORBID FUNCTIONING**.

**premorbid adjustment** a measure of the level of a person's functioning before the onset of an acute psychological disorder. The measure, as used in the **PHILLIPS RATING SCALE OF PREMORBID ADJUSTMENT IN SCHIZOPHRENIA**, has been found to be of value in predicting the course of schizophrenia.

**premorbid functioning** an individual's cognitive functioning prior to a neurological trauma or disease, as estimated to determine the degree of loss or impairment caused by the damage. This estimate is based on testing and assessments conducted after the damage has occurred; it may include consideration of such factors as educational level, occupational history, and individual and family reports. Also called **baseline functioning**; **premorbid abilities**.

**premorbid personality 1**, personality traits that existed before a physical injury or other traumatic event or before the development of a disease or disorder. **2**, person-

ality strengths and weaknesses that predispose an individual to mental health and well-being or to a particular mental disorder (e.g., depression, schizophrenia) or that affect the speed or likelihood of recovery from a disorder. Also called **primary personality**.

**premortem clarity** mental alertness, following a period of confusion or withdrawal, that sometimes occurs in a dying individual just prior to death. Premortem clarity may have consequential importance, such as the utterance of last words and the affirmation or modification of wills and testaments.

**premotor area** an area of the MOTOR CORTEX concerned with motor planning. In contrast to the SUPPLEMENTARY MOTOR AREA, input to the premotor area is primarily visual, and its activity is usually triggered by external events. Also called **Brodman's area 6**; **intermediate precentral area**; **premotor cortex**.

**premotor theory of attention** a theory proposing that attention is a consequence of the mechanisms that generate actions or motor responses. It is based on neurophysiological evidence that space is coded in several cortical circuits that have specific motor purposes. Those circuits that represent space for programming eye movements are considered to play the primary role in spatial attention. Preparing to move the eyes to a specific location increases the readiness to act in that region of space and facilitates the processing of stimuli located in that region.

**prenatal** *adj.* prior to birth; pertaining to that which exists or occurs between conception and birth.

**prenatal care** health care and educational services provided to or obtained by a woman during pregnancy. Such services are intended to prevent complications and decrease the risk of maternal or fetal mortality.

**prenatal counseling** counseling given to couples or to single women who are expecting a baby or planning a pregnancy. It sometimes also includes advice on terminating a pregnancy (see ABORTION). For those who are considering adoption, prenatal counseling includes advice on preparing for the child's arrival and future, dealing with friends and relatives, and coping with any impact on the biological mother and father.

**prenatal developmental anomaly** a congenital abnormality that originates in the course of development before birth. Examples include cleft palate and spina bifida.

**prenatal diagnosis** determination of a pathological condition or the presence of disease or genetic abnormalities in a fetus. See ALPHA-FETOPROTEIN; AMNIOCENTESIS; CHORIONIC VILLUS SAMPLING; ULTRASOUND.

**prenatal influence** any adverse influence on fetal development. Prenatal influences include radiation effects, maternal diseases (e.g., rubella, toxoplasmosis) and behavior (e.g., alcohol or drug use, excessive smoking), blood incompatibility, nutritional deficiency, and stress. See also FETAL PROGRAMMING.

**prenatal masculinization** the masculinizing effects of ANDROGENS on fetal sexual anatomy and on neural pathways in the fetal brain prior to birth.

**prenatal period** the developmental period between conception and birth, in humans commonly divided into the GERMINAL STAGE (approximately the first 2 weeks), the EMBRYONIC STAGE (the following 6 weeks), and the FETAL STAGE (from 2 months to birth).

**prenatal stress** stress in a pregnant woman, marked by elevation of stress hormones and other biological changes, with an increased likelihood of intrauterine infection. Preterm births and low birth weight are common effects of maternal stress during pregnancy. Preterm infants are susceptible to a range of complications, including chronic lung disease. Some recent studies suggest that a baby's temperament and neurobehavioral development can be influenced by the mother's stress level during pregnancy.

**preoccupation** *n.* a state of being self-absorbed and "lost in thought," which ranges from transient absent-mindedness to a symptom of mental disorder, as when an individual with schizophrenia withdraws from external reality and turns inward upon the self.

**preoccupied attachment** an adult attachment style that combines a negative INTERNAL WORKING MODEL OF ATTACHMENT of oneself, characterized by doubt in one's own competence and efficacy, and a positive internal working model of attachment of others, characterized by one's trust in the ability and dependability of others. Individuals with preoccupied attachment are presumed to seek others' help when distressed. Compare DISMISSIVE ATTACHMENT; FEARFUL ATTACHMENT; SECURE ATTACHMENT.

**preoedipal** *adj.* **1.** in classical psychoanalytic theory, pertaining to the first stages of psychosexual development, before the development of the OEDIPUS COMPLEX during the PHALLIC STAGE. During this phase, the mother is the exclusive love object of both sexes and the father is not yet considered either a rival or a love object. **2.** more generally, denoting organization or functions before the onset of the Oedipus complex. See also PREPHALLIC.

**preoperational stage** the second major period in the PIAGETIAN THEORY of cognitive development, occurring approximately between the ages of 2 and 7, when the child becomes able to record experience in a symbolic fashion and to represent an object, event, or feeling in speech, movement, drawing, and the like. The child's thought processes tend to be intuitive and prelogical. During the later 2 years of the preoperational stage, egocentrism diminishes noticeably with the emerging ability to adopt the point of view of others. Also called **symbolic stage**. See also CONCRETE OPERATIONAL STAGE; FORMAL OPERATIONAL STAGE; SENSORIMOTOR STAGE.

**preoptic area** a region of the HYPOTHALAMUS lying above and slightly anterior to the OPTIC CHIASM. Nuclei here are involved in temperature regulation and in the release of HYPOTHALAMIC HORMONES. See also MEDIAL PREOPTIC AREA.

**preorgasmic** *adj.* **1.** relating to the state immediately before orgasm. It is characterized by increased breathing, heart rate, and blood pressure; semispastic muscle contractions; and maximum increase in the size of the glans penis, testes, and upper vaginal walls. **2.** denoting the status of a person who has never experienced orgasm. See ORGASMIC DYSFUNCTION.

**preparadigmatic science** a science at a primitive stage of development, before it has achieved a PARADIGM and established a consensus about the true nature of the subject matter and how to approach it. Psychology has been considered a preparadigmatic science by many theorists, in contrast to physics and chemistry (regarded as NORMAL SCIENCES). See also IMMATURE SCIENCE; PARADIGM SHIFT; SCIENTIFIC REVOLUTION. [proposed by U.S. philosopher of science Thomas Kuhn (1922–1996)]

**preparation** *n.* in cognitive psychology, the process of increasing readiness for an activity, such as by planning or imagining a movement before executing it. See **PLAN**. —**prepare** *vb.*

**preparatory adjustment** the changes made by the brain and body that indicate readiness to perform a task and that contribute to improved performance. A period of about 500 ms is typically needed for optimal preparation. See also **MENTAL SET**; **PREAFFERENCE**.

**preparatory response** any response (except the final one) in a series of behaviors that leads to a goal or reinforcement. Preparatory responses themselves are not immediately goal directed.

**preparatory set** a special alertness or readiness to respond in a particular manner to an expected stimulus, action, or event. A preparatory set may be manifested physically, as when a tennis player prepares to receive a serve, or experienced mentally, as when a chess player anticipates an opponent's next move. See **MENTAL SET**; **PERCEPTUAL SET**; **SET**.

**preparedness** *n.* the biological predisposition to quickly learn associations between stimuli, responses, and reinforcers that can be explained by their fit with genetic traits that evolved to enhance the chances of a species' survival. For example, it has been suggested that humans readily learn certain phobias (e.g., fear of snakes) because of a predisposition to fear anything that could pose a threat to their survival. Preparedness (or **prepared learning**) also has been proposed as an explanation for why both human and nonhuman animals readily learn to associate certain foods with gastric illness and are more likely to avoid such foods in the future. In experiments to establish **CONDITIONED TASTE AVERSION**, for instance, rats readily learn to associate a distinctive taste with illness; it has been proposed that they have an inherent preparedness to make this association, whereas they do not easily learn to make an association between a tone or light stimulus and illness because such **contraprepared learning** is incompatible with their evolutionary history. Along the continuum of preparedness—with highly prepared, easily formed associations on one end and contraprepared, poorly formed associations on the other—unprepared associations are intermediate occurrences; these are associations formed through **unprepared learning** that occurs despite the lack of a biological predisposition to form them. See also **PRINCIPLE OF BELONGINGNESS**. [introduced by U.S. psychologist Martin E. P. Seligman (1942– )]

**preperceptual processing** see **PREATTENTIVE PROCESSING**.

**prephallic** *adj.* in the classical psychoanalytic theory of Sigmund Freud, the stages of psychosexual development preceding the **PHALLIC STAGE** (i.e., the **ORAL STAGE** and the **ANAL STAGE**). See also **PREGENITAL PHASE**; **PROOEDIPAL**.

**pre-post design** see **PRETEST-POSTTEST DESIGN**.

**prepotency** *n.* **1.** the quality or state of possessing greater power, influence, or force. **2.** the capacity for one parent to transmit more of his or her genetic characteristics to an offspring than the other parent. —**prepotent** *adj.*

**prepotent response** a response that takes priority over other potential responses (e.g., a pain response).

**prepotent stimulus** any stimulus that is dominant

over any other competing stimulus in that it is more likely to gain attention or elicit a response.

**prepsychotic panic** a stage in the development of schizophrenia in which self-image is disordered: Individuals feel guilty, unlovable, humiliated, or otherwise different but have not yet acquired symptoms of delusions and hallucinations. [defined by Italian-born U.S. psychiatrist Silvano Arieti (1914–1982)]

**prepsychotic personality** characteristics and behavior of a person, such as eccentricities, withdrawal, litigiousness, apathy, or hypersensitivity, that may be indicative of later development of a psychotic disorder.

**prepubertal stage** see **PREADOLESCENCE**.

**prepuberty** *n.* see **PREADOLESCENCE**.

**prepubescence** *n.* see **PREADOLESCENCE**.

**prepuce** *n.* a covering fold of skin, especially the skin covering the glans penis (see **FORESKIN**) in males and the clitoris (see **CLITORAL HOOD**) in females. Also called **preputium**. —**preputial** *adj.*

**prepulse inhibition** diminution of a reflex response by presenting a weak stimulus just before the strong stimulus that elicits the response. For example, a loud noise can elicit a startle reaction, but presentation of a tone before the noise will diminish the startle reaction.

**preputium** *n.* see **PREPUCE**.

**prepyriform area** the olfactory **PROJECTION AREA** at the base of the temporal lobe of the brain.

**presbycusis** *n.* the gradual diminution of hearing acuity associated with aging. See also **VASCULAR SCLEROSIS**.

**presbyopia** *n.* a normal, age-related change in vision due to decreased lens elasticity and accommodative ability, resulting in reduced ability to focus vision on near tasks (e.g., reading). Usually beginning in middle age, presbyopia is correctable with reading glasses or glasses with bifocal or trifocal lenses.

**preschool program** an educational curriculum for children who are under the required minimum age for participation in regular classroom work. Preschool programs for children with intellectual or emotional difficulties are designed to develop social skills and provide stimulation at levels appropriate for each child.

**prescribing** *n.* **1.** ordering the use of a medication. **2.** in psychotherapy and medicine, advising or telling a patient what to do in specific situations.

**prescribing information (PI)** see **LABELING**.

**prescribing psychology** an emerging area of clinical psychology in which licensed, appropriately trained practitioners are legally authorized to prescribe medications for the treatment of emotional and mental disorders (see **PSYCHOACTIVE DRUG**). This integration of medication management with psychological practice is controversial: Within the United States, only New Mexico, Louisiana, and Illinois have enacted laws permitting it, in 2002, 2004, and 2014, respectively. In addition to fulfilling all other requirements required for professional licensure as a practicing clinician, prescribing psychologists in these states must complete a postdoctoral psychopharmacology training program and pass a national certification exam. New Mexico also requires a supervised 400-hour, 100-patient practicum. Also

called **medical psychology**. See also **PRESCRIPTIVE AUTHORITY**.

**prescription drug** a medication that can be legally acquired only from a pharmacy and only on the basis of a written, faxed, telephoned, or electronically submitted order (the **prescription** or **script**) from a physician.

**prescription privilege** the legal right to prescribe medications necessary for the treatment of medical or mental health disorders.

**prescriptive authority (RxP)** the legally recognized right of specially trained psychologists to dispense **PSYCHOACTIVE DRUGS** to their clients. The practice is highly controversial, both within the United States and abroad; of the states that have introduced RxP legislation, few have passed it. RxP opponents cite concerns that psychologists lack the requisite medical knowledge and training to prescribe safely. Opponents also fear that psychologists trained in psychopharmacology will abandon emotional, interpersonal, and behavioral interventions in favor of medication management, rather than combining approaches. RxP supporters say that it can be done safely and will enable psychologists to provide improved care. Supporters also cite such benefits as enhancing the quality and accessibility of health care in underserved communities; facilitating communication between psychologists and **PRIMARY CARE PROVIDERS**; and improving management of the psychological concomitants of health problems. Despite the heated debate surrounding RxP, many universities and independent training facilities are seeking to establish postdoctoral training programs that meet the criteria of the American Psychological Association's Recommended Postdoctoral Training in Psychopharmacology for Prescription Privilege. Additionally, the affiliated College of Professional Psychology has developed the Psychopharmacology Examination for Psychologists for use by U.S. and Canadian licensing boards. See also **PRESCRIBING PSYCHOLOGY**.

**prescriptive eclectic psychotherapy** see **ELECTIC PSYCHOTHERAPY**.

**prescriptive grammar** an approach to grammar in which a series of rules is used to distinguish proper from improper usage and a standard version of the language is identified and promoted (see **STANDARD LANGUAGE**). It is often contrasted with **descriptive grammar**, in which the goal is to provide an accurate account of language use without specification as to correctness. Prescriptive grammarians seek to correct nonstandard forms, such as *I can't get no satisfaction*, whereas descriptive grammarians seek to characterize the rule system that produces such utterances.

**prescriptive norm** see **INJUNCTIVE NORM**.

**prescriptivism** *n.* in linguistics, the practice of using **PRESCRIPTIVE GRAMMAR** to inculcate certain forms and varieties of language and to stigmatize others.

**preselection** *n.* **1.** in **IN VITRO FERTILIZATION**, the choosing of one embryo over others because it is assessed as having a higher likelihood of developing into a healthy, viable fetus. **2.** the choosing of traits for future progeny through genetic analysis and manipulation. Preselection of traits—for example, sex (see **SEX PRESELECTION**), intelligence, beauty, and various talents—is highly controversial, with the potential for preselecting **designer children** raising serious ethical considerations. **3.** a family's subjective assignment of the role of mutation carrier to one or more family members prior to knowledge of their actual genetic status.

Family members often treat the preselected person in a special way, assuming that he or she is a mutation carrier.

**presenile dementia** see **DEMENTIA**.

**presenile dementia of the Alzheimer's type (PDAT)** an older name for **DEMENTIA** of the Alzheimer's type with onset before age 65.

**presenilin** *n.* any member of a family of transmembrane proteins, mutations in which are associated with early-onset familial Alzheimer's disease.

**presentation** *n.* **1.** the way in which materials are set before an individual, often for the purpose of learning or understanding. **2.** the act of exposing a human or nonhuman animal to stimuli or learning materials during an experiment. **3.** in psychoanalytic theory, the means or vehicle through which an **INSTINCT** is expressed. **4.** in interpersonal relations and social interaction, the way in which an individual behaves or expresses himself or herself. **5.** in animal behavior, see **PRESENTING**. —**present** *vb.*

**presenteeism** *n.* **1.** the practice of coming to work when one is ill, injured, or otherwise unable to function at full capacity on the job. The resulting reduction in productivity is a growing financial and safety concern for employers, particularly since research suggests presenteeism is much more prevalent and damaging than **ABSENTEEISM**. Factors that drive presenteeism include a large workload (often involving multiple tasks and demands from several departments), fear of missing deadlines, fear of disciplinary action or job loss, missed pay, the desire to conserve leave for future use (for vacations, emergencies, child care, family problems, etc.), loyalty to coworkers (i.e., "I've got to get in because my colleagues are depending on me and nobody else can cover for me"), company loyalty, and **JOB SATISFACTION**. **2.** less commonly, the practice of staying at work beyond the expected hours to the point at which one is no longer effective because of fatigue, boredom, or lack of useful tasks to perform.

**presenting** *n.* animal behavior in which a female turns its back toward a male and raises its posterior, which allows the male to mate. **LORDOSIS** is a specific form of presenting seen in many rodents during mating. The posture also occurs outside of a mating context, as when both male and female subordinate animals present to dominant animals.

**presenting symptom** a symptom or problem that is offered by a client or a patient as the reason for seeking treatment. In psychotherapy, for example, a client may present with depression, anxiety, panic, anger, chronic pain, or family or marital problems; such symptoms may become the focus of treatment or may represent a different, underlying problem that is not recognized or regarded by the client as requiring help. Also called **presenting problem**.

**presentist** **1.** *adj.* denoting a perspective that attributes the influence of past events on present behavior to a representation of these events that exists in the present. See **AHISTORICAL**. **2.** *n.* a person holding such a position. —**presentism** *n.*

**Present State Examination (PSE)** a structured interview comprising about 400 items representing a wide range of symptoms likely to be manifested during an acute episode of one of the functional psychoses. The PSE was developed for the **INTERNATIONAL PILOT STUDY OF SCHIZOPHRENIA**.

**presolution variability** the variability observed in be-

havior prior to arriving at a successful solution to a difficult problem.

**prespeech development** development of the earliest forms of perceptual experience, learning, and communication, which precedes actual speech and is necessary for its development. For example, babies attend to sound at birth and can differentiate the human voice from other sounds within the 1st month. Cross-cultural studies reveal that mothers routinely use techniques that help their infants acquire language; for example, they shorten their expressions, stress important words, simplify syntax, and speak in a higher register and with exaggerated distinctness. See BABBLING; INFANT-DIRECTED SPEECH; INFANTILE SPEECH.

**press** *n.* in the PERSONOLOGY of Henry Alexander MURRAY, an environmental stimulus, such as a person or situation, that arouses a need. Examples are the birth of a sibling, parental discord, feelings of social inferiority, or the sight of food when hungry. See NEED—PRESS THEORY.

**pressor effect** the effect of VASOCONSTRICTORS, such as VASOPRESSIN.

**pressure** *n.* **1.** the exertion of force or weight on a surface (e.g., skin, tissue). **2.** excessive or stressful demands, imagined or real, made on an individual to think, feel, or act in particular ways. The experience of pressure is often the source of cognitive and affective discomfort or disorder, as well as of maladaptive coping strategies, the correction of which may be a mediate or end goal in psychotherapy.

**pressured speech** accelerated and sometimes uncontrolled speech that often occurs in the context of a HYPOMANIC EPISODE or a MANIC EPISODE. Also called **pressure of speech**.

**pressure gradient** a gradual reduction in pressure extending in all directions when a stimulus is applied to the skin.

**pressure of activity** compulsive and occasionally uncontrolled activity and PSYCHOMOTOR AGITATION, usually occurring in the context of a MANIC EPISODE.

**pressure of ideas** a characteristic symptom of MANIA in which there is increased spontaneity and productivity of thought: Numerous, widely varied ideas arise quickly and pass through the mind rapidly. It is usually manifested as PRESSURED SPEECH or PRESSURE OF ACTIVITY. Also called **thought pressure**.

**pressure of speech** see PRESSURED SPEECH.

**pressure sense** the sensation of stress or strain, compression, expansion, pull, or shear, usually caused by a force in the environment. Pressure receptors may interlock or overlap with pain receptors so that one sensation is accompanied by the other. The pressure sense is similar to the sensation of contact.

**pressure spot** any of the points on the body surface that are particularly sensitive to pressure stimuli. Also called **pressure-sensitive spot**.

**pressure-threshold test** a sensory test in which pressure sensitivity is measured with a series of hairs of graded stiffness.

**pressure ulcer** a localized area of cellular death (NECROSIS) affecting individuals with limited mobility. Pressure ulcers derive from increased pressure on small areas of tissue due to prolonged sitting or lying in one position and most commonly form where bones are close to the skin, such as

at the ankles, heels, shoulder blades, elbows, and hips. If untreated, sepsis can develop, which is potentially fatal. Pressure ulcers are the third leading cause of death in individuals with SPINAL CORD INJURY. Also called **bedsore**; **decubitus ulcer**; **pressure sore**.

**prestige** *n.* the degree of respect, regard, and admiration afforded an individual by his or her peers or the whole community. Prestige derives from various sources, including success, achievement, rank, reputation, authority, illustriousness, or position within a social structure. —**prestigious** *adj.*

**prestige suggestion** **1.** a message whose persuasiveness derives from its delivery by or attribution to a person of recognized status. **2.** a method of supportive, SYMPTOMATIC TREATMENT that relies on the prestige of the therapist in the eyes of the patient to reduce or eliminate symptoms. The so-called **omnipotent therapist** may be able to abolish undesirable symptoms, at least temporarily, by suggestion.

**prestriate cortex** visually responsive regions in the cerebral cortex outside the STRIATE CORTEX. The prestriate cortex includes BRODMANN'S AREAS 18 and 19, as determined by CYTOARCHITECTURE, and additional areas in the temporal and parietal lobes. On the basis of function and connectivity, the prestriate cortex has been divided into multiple VISUAL AREAS, including V2, V3, V4, and V5. Also called **circumstriate cortex**; **extrastriate cortex**; **prestriate area**.

**presupposition** *n.* in linguistics, a PROPOSITION that underlies an utterance but is not stated explicitly within it. For example, the question *Has Simone finally given up smoking?* presupposes that Simone is, or used to be, a smoker. Compare IMPLICATURE.

**presynaptic** *adj.* **1.** referring to the region of a neuron within a SYNAPSE that releases neurotransmitter. **2.** referring to a neuron that is transmitting a signal to one or more other neurons via its synapses. Compare POSTSYNAPTIC.

**pretend play** see FANTASY PLAY.

**preterm infant** see PREMATUREITY; PRENATAL STRESS.

**preterm viability** the ability of a fetus to survive outside the uterus before the full TERM of pregnancy is completed. A human fetus may be viable from around 20 weeks after conception.

**preternatural** *adj.* describing phenomena that appear to be inexplicable in terms of the known laws of the physical universe. Compare SUPERNATURAL.

**pretest** **1. n.** an initial assessment designed to measure existing characteristics (e.g., knowledge, ability) before some intervention, condition, manipulation, or treatment is introduced. Pretests often are given to research participants before they take part in a study. For example, in a study examining whether training helps math performance, participants might be administered a short math test to assess their original knowledge prior to undergoing the training. See also POSTTEST. **2. n.** a test administered before the main study to ensure that participants understand the instructions and procedures. See PILOT STUDY; PRACTICE TRIAL. **3. vb.** to administer a pretest.

**pretest counseling** a type of GENETIC COUNSELING that an individual undertakes before deciding whether to undergo genetic testing. Pretest counseling includes educat-



ing the individual about the contribution of genetics to the etiology of disease, taking a family history and creating a PEDIGREE, estimating risk, and discussing the risks, benefits, and limitations of genetic testing. Compare POSTTEST COUNSELING.

**pretest–posttest design** a research design in which the same assessment measures are given to participants both before and after they have received a treatment or been exposed to a condition, with such measures used to determine if there are any changes that could be attributed to the treatment or condition. A more complete version in which participants are randomly assigned to a treatment group or a CONTROL GROUP is a **pretest–posttest control-group design**: All individuals are assessed at the beginning of the study, the intervention is presented to the treatment group but not the control, and then all individuals are measured again. The presence of the control group allows the researcher to identify any preexisting disparities between the groups and thus to more definitely attribute differences between the pre- and posttest scores to the treatment of interest. Also called **before–after design**; **pre–post design**.

**pretest sensitization** an effect in which the administration of a PRETEST affects the subsequent responses of a participant to experimental treatments. For example, if a researcher administers a mood measure prior to treatment conditions, participants may realize that the study is about mood and be more attuned to the mood induction occurring as part of the experimental condition. Pretest sensitization is important to consider in the interpretation of research findings, as it may make a treatment appear more effective than it actually is.

**pretraumatic stress disorder** a condition characterized by prolonged, significant anxiety about a potential threatening or otherwise devastating event, such as a terrorist attack or wartime violence. The individual remains in a constant state of worry and heightened stress at his or her perceived helplessness to prevent the expected future trauma and often mentally experiences the dreaded event again and again. For example, a soldier soon to be deployed for the first time may repeatedly visualize his friends wounded in a combat-zone explosion and mentally hear their cries for help. The resulting symptoms (e.g., fear, anger, vulnerability, uncertainty, irritability, concentration difficulties, insomnia, appetite disturbances) are so intense as to negatively affect daily functioning. Also called **pre-traumatic stress syndrome**. [named by analogy with POSTTRAUMATIC STRESS DISORDER]

**pretrial publicity** media coverage of a case that occurs prior to the trial and can lead prospective jurors to form opinions about the case before hearing evidence in court. See CHANGE OF VENUE.

**prevalence** *n.* the total number or percentage of cases (e.g., of a disease or disorder) existing in a population, either at a given point in time (**point prevalence**) or during a specified period (**period prevalence**). For example, health researchers may want to investigate the prevalence of a new disease in an area, whereas education researchers may be interested in the prevalence of bullying or cheating among students of a certain age group. See also INCIDENCE.

**prevention** *n.* behavioral, biological, or social interventions intended to reduce the risk of disorders, diseases, or social problems for both individuals and entire populations.

See PRIMARY PREVENTION; SECONDARY PREVENTION; TERTIARY PREVENTION.

**prevention design** in ergonomics, the design of tools or systems so as to reduce the possibility of HUMAN ERROR. See ENGINEERING CONTROLS. See also EXCLUSION DESIGN; FAIL-SAFE.

**prevention research** research directed toward finding interventions to reduce the likelihood of future pathology (e.g., cancer, substance abuse). Such research often concentrates on individuals or populations considered to be particularly at risk of developing a condition, disease, or disorder. It involves one or more of the following: (a) analyzing risk and protective factors and assessing susceptibility; (b) identifying markers for those at risk and developing screening methods; (c) developing and implementing interventions to promote health and prevent pathology; and (d) conducting **prevention analysis**, the methodological and statistical evaluation of the effects of such interventions.

**preventive care** medical care that aims to prevent disease or its consequences, emphasizing early detection and early treatment of conditions and generally including routine physical examination, immunizations, and well-person care. See also PRIMARY PREVENTION.

**preventive coping** a stress-management strategy in which one prepares for possible events in the long term by building up resources to help minimize the severity of their impact. Examples of such events that may or may not occur in the distant future include job loss, forced retirement, crime, illness, or poverty. The perceived ambiguity stimulates a broad range of behaviors intended to accentuate one's psychological strengths and accumulate wealth, social bonds, and skills "just in case" (e.g., maintaining a savings account, locking the doors when away from home, carrying health insurance). Preventive coping is not born out of an acute stress situation but rather from reasonable concern about the inherent hazards of daily living and is one of four types of coping proposed by German psychologists Ralf Schwarzer (1943– ) and Nina Knoll. See also ANTICIPATORY COPING; PROACTIVE COPING; REACTIVE COPING.

**preventive counseling** counseling that aims to prevent anticipated problems or conflicts. A school-based preventive counseling program, for example, may focus on educating and providing guidance to adolescents about such issues as bullying and school violence, substance abuse, teen pregnancy, sexually transmitted diseases, eating disorders, and suicide, with the goal of reducing their vulnerability to these and similar problems that often occur in this particular age group.

**preventive stress management** an intervention that provides information on stressors, coping strategies, and opportunities to practice these strategies prior to the occurrence of anticipated stressful situations.

**preverbal** *adj.* before the acquisition of language. Preverbal children communicate using nonword sounds and gestures.

**preverbal construct** a concept that may have been formulated before one acquired language but that, even without a verbal symbol, may still be used to construe one's experiences in later life. [proposed by George A. KELLY]

**prevocational training** programs designed to help individuals prepare to enter a competitive work environment. Training is not career- or position-specific but rather focuses on helping individuals develop good work habits and

gain the basic skills and abilities essential for employment in any field, such as following directions and being punctual. Prevocational training may be provided to any individual who has not had actual work experience in a competitive job market, such as a college student nearing graduation or an adult entering the workforce late in life, but it is most often offered to adolescents and to adults with disabilities as part of a VOCATIONAL REHABILITATION program.

**prey** *n.* see PREDATION.

**priapism** *n.* 1. persistent penile erection that occurs independently of sexual arousal or that continues long after orgasm has occurred and sexual activity has ceased. Immediate causes may be thrombosis, cancer, hemorrhage, inflammation, lesions involving nerve tracts between the brain and the urethra, or an overdose of drugs to treat ERECTILE DYSFUNCTION. The condition is also associated with leukemia and sickle-cell anemia and is usually painful. 2. another name for SATYRIASIS. Priapism is named for Priapus, the Greco-Roman god of procreation and of the generative force in nature, who was the basis of a cult that worshipped the phallus. See also PHALLOCENTRIC.

**price-quality relationship** the real or perceived relationship between the price and the quality of an item or experience. In general, consumers think that higher prices mean higher quality.

**Price Waterhouse v. Hopkins** a case resulting in a 1989 U.S. Supreme Court ruling that any employment decision made (even in part) on the basis of sex is discriminatory. In this case, the plaintiff was a woman who was denied partnership in an accounting firm because her conduct at work was judged to be excessively masculine.

**prick experience** the sensation produced when a pin, needle, or small electrical stimulus is applied to a receptor area of the skin. A prick experience may resemble other somatic sensations, such as an itch, a tickle, a pain, or a pressure, depending on how the stimulus is applied.

**pride** *n.* a SELF-CONSCIOUS EMOTION that occurs when a goal has been attained and one's achievement has been recognized and approved by others. It differs from JOY and HAPPINESS in that these emotions do not require the approval of others to be experienced. Pride also has expressive reactions that differ from joy, such as puffing up of the chest and directing attention to others or an audience. False pride can become GRANDIOSITY if the sense of accomplishment is not deserved or the reaction is excessive. See also HUBRIS. —**proud** *adj.*

**primacy effect** the tendency for facts, impressions, or items that are presented first to be better learned or remembered than material presented later in the sequence. This effect can occur in both formal learning situations and social contexts. For example, it can result in a **first-impression bias**, in which the first information gained about a person has an inordinate influence on later impressions and evaluations of that person. Also called **law** (or **principle**) of **primacy**. Compare RECENCY EFFECT.

**prima facie** at first sight; on the face of things (Latin, literally: "first face"). Prima facie evidence is evidence that, although not conclusive, is considered sufficiently strong to support an inference of fact in the absence of evidence to the contrary.

**primal anxiety** in psychoanalytic theory, the most basic

form of anxiety, first experienced when the infant is separated from the mother at birth and suddenly has to cope with the flood of new stimuli. See also PRIMAL TRAUMA.

**primal envy** in the OBJECT RELATIONS THEORY of Melanie KLEIN, envy that is first expressed in the infant's coveting of the mother's breast, leading to the child's fantasized desire to spoil or destroy the good object that the breast represents (see GOOD BREAST).

**primal fantasy** in classical psychoanalytic theory, any of a range of fantasies used by children to fill gaps in their knowledge of sexual experience, especially one about conception and birth, parental intercourse, or castration.

**primal father** the head of a hypothetical primitive tribe who is slain and devoured by his sons (or other younger men) and later revered as a god, as described by Sigmund FREUD in *Totem and Taboo* (1912–1913). The crime has a tragic effect on the sons and becomes enshrined in the culture of the tribe as a TOTEM.

**primal-horde theory** Sigmund FREUD's speculative reconstruction in *Totem and Taboo* (1912–1913) of the original human family, which comprised a dominant male (the PRIMAL FATHER) holding sway over a subordinate group of females and younger men or sons. Freud used the theory to account for the origin of EXOGAMY, the INCEST taboo, guilt, and totemism (see TOTEM).

**primal repression** see PRIMARY REPRESSION.

**primal sadism** in classical psychoanalytic theory, an aspect of the DEATH INSTINCT that is identical with MASOCHISM and remains within the person, partly as a component of the LIBIDO and partly with the self as an OBJECT.

**primal scene** in classical psychoanalytic theory, the child's first observation, in reality or fantasy, of parental intercourse or seduction, which is interpreted by the child as an act of violence (see PHALLIC SADISM). See also PRIMAL FANTASY.

**primal therapy** a therapeutic technique in which the client is encouraged to reexperience traumatic early childhood (even peri- and prenatal) experiences and react vocally and physically to release the psychic pain associated with them. The technique, sometimes popularly and erroneously known as **primal scream therapy**, has received little scientific validation and is not advocated by most psychotherapists or counselors. [developed in the 1960s and 1970s by U.S. psychologist Arthur Janov (1924– )]

**primal trauma** in psychoanalytic theory, a painful situation to which an individual was subjected in early life that is presumed to be the basis of a neurosis in later life. See also PRIMAL ANXIETY.

**primary ability** any of the seven unitary factors revealed by factor analysis to be essential components of intelligence: VERBAL ABILITY (V), WORD FLUENCY (WF), NUMERICAL ABILITY (N), SPATIAL INTELLIGENCE (S), MEMORY (M), perceptual speed (P), and REASONING (R). These factors are measured by the **Primary Mental Abilities Test**. Also called **primary mental ability**. [proposed in about 1936 by Louis L. THURSTONE]

**primary aging** changes associated with normal aging that are inevitable and caused by intrinsic biological or genetic factors. Examples include the loss of melanin, which causes gray hair, and decreased skin elasticity. However, some age-related processes are accelerated by environmen-

tal influences, making the distinction between primary aging and SECONDARY AGING imprecise.

**primary amenorrhea** see AMENORRHEA.

**primary anxiety** in psychoanalytic theory, anxiety experienced as a spontaneous response to any stimulus that causes dissolution of the EGO. Compare SIGNAL ANXIETY.

**primary appraisal** in the COGNITIVE APPRAISAL THEORY of emotions, the initial evaluation of a situation's relevance to one's moral norms and personal preferences and to the likelihood of reaching one's goals. The situation (or other stimulus) is identified as a threat, harm, or challenge and is followed by SECONDARY APPRAISAL. See also CORE RELATIONAL THEMES. [proposed by Richard S. LAZARUS]

**primary attention** attention that does not require conscious effort, such as attention to an intense, powerful, or arresting stimulus. In classical psychology, the term is used to denote the basic kind of attention that is common to all animals and the first to develop in humans. Also called **passive attention**; **reflex attention**. Compare SECONDARY ATTENTION. See also INVOLUNTARY ATTENTION.

**primary auditory cortex (A1)** see AUDITORY CORTEX.

**primary behavior disorder** any of various behavior problems in children and adolescents, including habit disturbances (e.g., nail biting, temper tantrums), bed-wetting, conduct disorders (e.g., vandalism, fire setting, alcohol or drug use, sex offenses, stealing), and school-centered difficulties (e.g., truancy, school phobia, disruptive behavior).

**primary care** the basic or general health care a patient receives when he or she first seeks assistance from a health care system. General practitioners, family practitioners, internists, obstetricians, gynecologists, and pediatricians are known as PRIMARY CARE PROVIDERS. Also called **primary health care**. Compare SECONDARY CARE; TERTIARY CARE.

**primary caregiver** see CAREGIVER.

**primary care provider (PCP)** a physician who provides PRIMARY CARE services and may act as the GATEKEEPER controlling patients' access to the rest of the health care system through referrals. PCPs are usually generalist physicians (e.g., internists, pediatricians, family physicians, general practitioners) and obstetricians and gynecologists. Also called **primary physician**.

**primary care psychology** a specialty within health, clinical, and counseling psychology that involves providing psychologically oriented preventive and treatment services under the auspices of medical professionals in such settings as clinics, hospitals, and private practices, either on site or on a consultation basis. A physician, for example, might engage a **primary care psychologist** to further evaluate a patient with hypertension whose presenting symptoms also include anxiety and to offer both counseling to address the anxiety and behavioral interventions (e.g., relaxation training) to help the patient manage stress.

**primary caretaker standard** a standard of evaluation used in CHILD CUSTODY disputes that awards custody of the child to the parent who has previously assumed the most responsibility for and spent the most time with the child. See also TENDER YEARS DOCTRINE.

**primary cause** a condition or event that predisposes an individual to a particular disorder, which probably would not have occurred in the absence of that condition or event. Sexual contact, for example, is a common primary cause of a sexually transmitted disease.

**primary circular reaction** in PIAGETIAN THEORY, a type of repetitive action that represents the earliest nonreflexive infantile behavior. For example, in the first months of life, a hungry baby may repeatedly attempt to put a hand in the mouth. This does not result in effective goal-oriented behavior, but it does indicate a primitive link between goal (easing hunger) and action (attempting to suck on the hand). Primary circular reactions develop in the SENSORIMOTOR STAGE, following the activation of such basic reflexes as sucking, swallowing, crying, and moving the arms and legs. See also SECONDARY CIRCULAR REACTION; TERTIARY CIRCULAR REACTION.

**primary colors** the basic colors from which all the various hues can be produced by mixing different combinations. Some investigators believe human color perception involves combinations of the three primary colors (i.e., blue, green, and red); others contend that yellow, violet, or both should be included because of visual color sensitivity peaks found at those wavelengths.

**primary consciousness** sensory experience. The descriptor implies that sensory experience emerged early in the EVOLUTION OF CONSCIOUSNESS. [proposed by U.S. neuroscientist Gerald M. Edelman (1929–2014)]

**primary control** behavior that is aimed at producing a sense of control through an individual's direct alteration of the environment. Compare SECONDARY CONTROL. See LOCUS OF CONTROL.

**primary coping** a stress-management strategy in which a person actively seeks to alter external conditions, including environmental events and other people's behavior, to bring them into line with his or her wishes. Primary coping encompasses a variety of different actions, such as seeking support, expressing one's emotions, or regulating one's emotions. It is a dynamic, approach-oriented COPING STRATEGY that provides an important sense of control over environmental circumstances. Also called **primary control coping**. Compare SECONDARY COPING. [identified in 1982 by Fred M. Rothbaum (1949–2011) and John R. Weisz (1945– ), U.S. clinical and developmental psychologists, and Samuel S. Snyder, U.S. developmental psychologist]

**primary cortex** any of the regions of the CEREBRAL CORTEX that receive the main input from sensory receptors or send the main output to muscles. Examples are the primary MOTOR CORTEX, primary visual cortex (see STRIATE CORTEX), primary TASTE CORTEX, and PRIMARY SOMATOSENSORY AREA. The primary motor cortex has a lower threshold for elicitation of motor responses than do adjacent motor cortical regions. Most neurons in primary sensory regions have more direct sensory input than do neurons in adjacent sensory cortical regions.

**primary data 1.** information cited in a study that was gathered directly by the researcher from his or her own experiments or from first-hand observation. Compare SECONDARY DATA. **2.** original experimental or observational data, that is, RAW DATA.

**primary deviance** in theories of deviance and identity, an initial rule-breaking act (such as NONCONFORMITY or disobedience) performed by an otherwise socially compliant individual. In most cases, individuals amend their behaviors in response to social pressure, but if they continue to violate social norms (**secondary deviance**), other people may label them as deviant. See also LABELING THEORY.

**primary drive** an innate drive, which may be universal or species-specific, that is created by deprivation of a needed substance (e.g., food) or by the need to engage in a specific activity (e.g., nest building in birds). Compare SECONDARY DRIVE.

**primary emotion** any one of a limited set of emotions that typically are manifested and recognized universally across cultures. The list of primary emotions varies across different theorists. They often include FEAR, ANGER, JOY, SADNESS, DISGUST, CONTEMPT, and SURPRISE; some theorists also include SHAME, SHYNESS, and GUILT. Also called **basic emotion**; **core emotion**. Compare SECONDARY EMOTION.

**primary empathy** an approach to CLIENT-CENTERED THERAPY in which the therapist actively tries to experience the client's situation and then to restate it from the client's point of view and emotional standpoint.

**primary environment** an environment that is central in one's life and in which personal or family interactions can be sustained, such as one's home. See also PRIMARY TERRITORY. Compare SECONDARY ENVIRONMENT.

**primary factor** see FIRST-ORDER FACTOR.

**primary familial xanthomatosis** see WOLMAN'S DISEASE.

**primary gain** in psychoanalytic theory, the basic psychological benefit derived from possessing neurotic symptoms, essentially relief from anxiety generated by conflicting or unexpressed impulses. Also called **paranoid gain**. Compare SECONDARY GAIN.

**primary group** any of the small, long-term groups characterized by face-to-face interaction and high levels of GROUP COHESION, solidarity, and GROUP IDENTIFICATION. These groups are primary in the sense that they are the initial socializers of the individual members, providing them with the foundation for attitudes, values, and a social orientation. Families, partnerships, and long-term psychotherapy groups are examples of such groups. Compare SECONDARY GROUP.

**primary gustatory cortex** see TASTE CORTEX.

**primary health care** see PRIMARY CARE.

**primary hypersomnia** in *DSM-IV-TR*, a sleep disorder characterized by excessive sleepiness (evidenced by prolonged episodes of sleep, daytime episodes of sleep on an almost daily basis, or both), the severity and persistence of which cause clinically significant distress or impairment in functioning. The disorder is not caused by a general medical condition and is not an aspect of another sleep disorder or mental disorder. In *DSM-5*, it is known as **hypersomnolence disorder**. See DYSSOMNIA. See also DISORDERS OF EXCESSIVE SOMNOLENCE. Compare PRIMARY INSOMNIA.

**primary identification** in psychoanalytic theory, the first and most basic form of IDENTIFICATION, which occurs during the ORAL STAGE of psychosexual development when the infant experiences the mother as part of himself or herself. After weaning, the infant begins to differentiate between the self and external reality and then becomes capable of SECONDARY IDENTIFICATION. Primary identification is closely tied to oral INCORPORATION. Also called **primary narcissistic identification**.

**primary insomnia** in *DSM-IV-TR*, a sleep disorder characterized by difficulty in initiating or maintaining a restorative sleep to a degree in which the severity and persistence of the sleep disturbance causes clinically significant

distress, impairment in a significant area of functioning, or both. The disorder is not caused by a general medical condition or the effects of a substance and is not exclusively an aspect of another sleep disorder or mental disorder. It is termed **insomnia disorder** in *DSM-5*. See DYSSOMNIA. Compare PRIMARY HYPERSOMNIA.

**primary line of sight** a line connecting a target of fixation with the center of the pupil of the eye. Compare VISUAL AXIS.

**primary masochism** in psychoanalytic theory, the portion of the DEATH INSTINCT or AGGRESSIVE INSTINCT that is directed toward the self after the LIBIDO has absorbed it emotionally and directed a large portion of it toward the external world. Also called **erotogenic masochism**.

**primary maternal preoccupation** in the OBJECT RELATIONS THEORY of British psychoanalyst Donald Winnicott (1896–1971), a state immediately following childbirth in which a mother becomes preoccupied with her infant to the exclusion of everything else, which permits a heightened sensitivity to the child's needs.

**primary memory (PM)** memory that retains a few items for only several seconds, in contrast to SECONDARY MEMORY. The term was used in DUAL-STORE MODELS OF MEMORY before being replaced by SHORT-TERM MEMORY. [introduced by William JAMES]

**primary mental ability** see PRIMARY ABILITY.

**primary microcephaly** a congenital disorder in which MICROCEPHALY is the primary, and usually the only, evidence of anomalous fetal development. The most common characteristic is a normal-size face combined with a small cranium. The forehead is low and narrow but recedes sharply. The back of the head is flat, and the vertex often is pointed. Intellectual disability and spasticity of limbs occur as neurological deficits.

**primary mood disorder** a prolonged, pervasive emotional disturbance that is a diagnostic entity of its own and that does not occur in the context of another disorder.

**primary motivation** motivation created by the presence of a PRIMARY NEED. Compare SECONDARY MOTIVATION.

**primary motor cortex** see MOTOR CORTEX.

**primary narcissism** in psychoanalytic theory, the earliest type of NARCISSISM, in which the infant's LIBIDO is directed toward his or her own body and its satisfaction rather than toward the environment or OBJECTS. At this stage, the child forms a narcissistic EGO-IDEAL stemming from his or her sense of OMNIPOTENCE. Compare SECONDARY NARCISSISM. See also BODY NARCISSISM.

**primary narcissistic identification** see PRIMARY IDENTIFICATION.

**primary need** an innate need that arises out of biological processes and leads to physical satisfaction, such as the need for water and sleep. See also PHYSIOLOGICAL NEED; SECONDARY NEED.

**primary obsessional slowness** an uncommon and severe subtype of OBSESSIVE-COMPULSIVE DISORDER characterized by an excessive orderliness and by routine self-care (e.g., washing, brushing teeth, getting dressed) that takes many hours to complete. [first described in 1974 by psychologist Stanley Rachman (1934– )]

**primary odor** in various theories of odor perception, any of a number of posited odor qualities that somehow

combine to produce the perception of an odor. See CROCKER–HENDERSON ODOR SYSTEM; HENNING’S ODOR PRISM; ZWAARDEMAKER SMELL SYSTEM.

**primary oocyte** see OOGENESIS.

**primary personality 1.** the original personality, as opposed to a SECONDARY PERSONALITY or secondary personalities, of an individual with DISSOCIATIVE IDENTITY DISORDER. **2.** see PREMORBID PERSONALITY.

**primary physician** see PRIMARY CARE PROVIDER.

**primary position** in vision, the position for binocular fixation that is looking straight ahead when the body and head are upright.

**primary prevention** research and programs, designed for and directed to nonclinical populations or populations at risk, that seek to promote and lay a firm foundation for mental, behavioral, or physical health so that psychological disorders, illness, or disease will not develop. Compare SECONDARY PREVENTION; TERTIARY PREVENTION.

**primary process** in psychoanalytic theory, unconscious mental activity in which there is free, uninhibited flow of PSYCHIC ENERGY from one idea to another. This mental process operates without regard for logic or reality, is dominated by the PLEASURE PRINCIPLE, and provides hallucinatory fulfillment of wishes. Examples are the dreams, fantasies, and magical thinking of young children. These processes are posited to predominate in the ID. Also called **primary process thinking**. See also PRELOGICAL THINKING.

**primary quality** in the philosophy of John LOCKE, a sensible quality of an object that is a physical property, or the result of a physical property, of the object itself, such as weight, size, or motion. Locke contrasted such properties with so-called SECONDARY QUALITIES, such as color, taste, and smell.

**primary reinforcement 1.** in OPERANT CONDITIONING, the process in which presentation of a stimulus or circumstance following a response increases the future probability of that response, without the need for special experience with the stimulus or circumstance. That is, the stimulus or circumstance, known as an **unconditioned** or **primary reinforcer**, functions as effective REINFORCEMENT without any special experience or training. **2.** the contingent occurrence of such a stimulus or circumstance after a response. Also called **unconditioned reinforcement**. Compare SECONDARY REINFORCEMENT.

**primary reinforcer** see NATURAL REINFORCER; PRIMARY REINFORCEMENT.

**primary relationship** a person’s closest relationship, in terms of the time, energy, and priority given to it. A primary relationship will typically include high degrees of intimacy, attraction, and commitment.

**primary repression** in psychoanalytic theory, the first phase of REPRESSION, in which ideas associated with instinctual wishes are screened out and prevented from becoming conscious. Primary repression contrasts with REPRESSION PROPER, in which the repressed material has already been in the realm of consciousness. Also called **primal repression**.

**primary reward** any stimulus that is innately reinforcing, such as water to a thirsty person. Compare SECONDARY REWARD.

**primary sensory area** any area within the NEOCORTEX of the brain that acts to receive sensory input—for most senses, from the thalamus. The primary sensory area for hearing is in the temporal lobe, for vision in the occipital lobe (see STRIATE CORTEX), and for touch and taste in the parietal lobe (see PRIMARY SOMATOSENSORY AREA; TASTE CORTEX). See also SECONDARY SENSORY AREA.

**primary sensory ending** see ANNULOSPIRAL ENDING.

**primary sex characteristic** see SEX CHARACTERISTIC.

**primary skin senses** the sensations of heat, cold, touch (i.e., contact), and pain. Other sensations from the skin, such as wetness, are considered sensory blends (see TOUCH BLENDS).

**primary sleep disorder** see SLEEP DISORDER.

**primary somatosensory area (S1)** an area of the cerebral cortex, located in a ridge of the anterior PARIETAL LOBE just posterior to the CENTRAL SULCUS, where the first stage of cortical processing of tactile information takes place (see SOMATOSENSORY AREA). It receives input from the ventroposterior nuclear complex of the thalamus (see VENTROPOSTERIOR NUCLEUS) and projects to other areas of the parietal cortex. See also SECONDARY SOMATOSENSORY AREA.

**primary spermatocyte** see SPERMATOGENESIS.

**primary stuttering** dysfluency in the speech of young children without accompanying signs of awareness, stress, or emotion. This simple, nonanxiety-producing dysfluency is not accepted as true stuttering by some speech and language pathologists. Compare SECONDARY STUTTERING.

**primary suggestibility 1.** a form of SUGGESTIBILITY that responds to overt influence, as in IDEOMOTOR SUGGESTION. Some tests have indicated that this form of suggestibility does not correlate strongly with indirect or SECONDARY SUGGESTIBILITY. Also called **direct suggestibility**. See also TERTIARY SUGGESTIBILITY. [proposed by Hans EYSENCK] **2.** an individual’s suggestibility in the absence of hypnosis or similar methods.

**primary symptoms 1.** symptoms that are a direct result of a disorder and essential for its diagnosis. **2.** symptoms that appear in the initial stage of a disorder. **3.** see FUNDAMENTAL SYMPTOMS. Compare SECONDARY SYMPTOMS.

**primary task** in ergonomics, the priority task in a situation requiring MULTIPLE-TASK PERFORMANCE. The operator is expected to allocate sufficient mental resources to the primary task to maintain an acceptable level of performance: He or she will then allocate remaining resources to other tasks. Compare SECONDARY TASK.

**primary taste** any of certain qualities posited as being basic to the entire sense of TASTE, in that all taste sensations are composed of them. The number of proposed primary tastes has ranged historically from 2 to 11, but SWEET, SALTY, SOUR, and BITTER, now joined by UMAMI, are the most widely accepted. However, the evidence that primary tastes exist is not definitive.

**primary taste cortex** see TASTE CORTEX.

**primary territory 1.** a space controlled by and identified with the person or group who uses it exclusively and to whom it is essential, such as an apartment or house. Primary territory is similar to PRIMARY ENVIRONMENT. Compare PUBLIC TERRITORY; SECONDARY TERRITORY. See also PROXEMICS. **2.** in animal behavior, a defended space. See TERRITORIALITY.

**primary thought disorder** a disturbance of cognition, observed primarily in schizophrenia, characterized by incoherent and irrelevant intellectual functions and peculiar language patterns (including bizarre syntax, NEOLOGISMS, and WORD SALAD). See SCHIZOPHRENIC THINKING.

**primary tone** see COMBINATION TONE.

**primary visual cortex (V1)** see STRIATE CORTEX.

**primary visual system** the major visual pathway in primates, in which processing of visual information is done by the FOVEA CENTRALIS, enabling careful analysis of stimulus properties. Signals pass from the retina to the OPTIC NERVE, OPTIC TRACT, LATERAL GENICULATE NUCLEUS, and OPTIC RADIATIONS, terminating in the STRIATE CORTEX. It is the phylogenetically more recent visual system and functions poorly in newborns. Compare SECONDARY VISUAL SYSTEM.

**primate** *n.* a member of the Primates, an order of mammals that includes the lemurs, monkeys, apes, and humans. Characteristics of the order include an opposable thumb (i.e., a thumb capable of touching the other four digits on the same hand), a relatively large brain, and binocular vision. The young are usually born singly and mature over an extended period.

**primidone** *n.* a barbiturate ANTICONVULSANT drug the primary metabolic product of which is PHENOBARBITAL. It is appropriate for the treatment of partial and tonic-clonic seizures but has been largely supplanted by newer, safer agents. U.S. trade name: **Mysoline**.

**primigravida** *n.* a woman who is pregnant for the first time. Also called **gravida I**. Compare MULTIGRAVIDA.

**priming** *n.* **1.** in cognitive psychology, the effect in which recent experience of a stimulus facilitates or inhibits later processing of the same or a similar stimulus. In REPETITION PRIMING, presentation of a particular sensory stimulus increases the likelihood that participants will identify the same or a similar stimulus later in the test. In SEMANTIC PRIMING, presentation of a word or sign influences the way in which participants interpret a subsequent word or sign. **2.** in animal behavior, the ability of a PHEROMONE to gradually alter the behavior of another member of the same species. —**prime** *vb.*

**primiparous** *adj.* describing a woman who has been pregnant and given birth once. Such a woman is called a **primipara**, or **para I**. Also called **uniparous**. Compare MULTIPAROUS.

**primitive** *adj.* **1.** belonging to the earliest stages of the development of something, such as a language, a species, or a technology. **2.** describing a society or culture that is NONLITERATE and economically and technologically undeveloped and that appears to be characterized by relatively simple forms of social organization. The term in this sense is now generally avoided by social scientists, as it implies acceptance of the discredited view that all societies pass through the same stages of development and that certain cultural practices belong to an “earlier” stage of human evolution (see CULTURAL EPOCH THEORY; SOCIAL DARWINISM). Note also that technologically undeveloped societies may be highly developed in other respects, having complex religious and kinship systems. See also MODERNIZATION; TRADITIONALISM.

**primitive defense mechanism** in psychoanalytic theory, any DEFENSE MECHANISM that protects against anxiety

associated with the DEATH INSTINCT. Primitive defense mechanisms include DENIAL, SPLITTING, PROJECTION, and IDEALIZATION and are the first to occur developmentally.

**primitive reflex** in infants, a muscle reaction (e.g., the GRASP REFLEX) that happens automatically in response to a certain type of stimulation but that disappears as the child grows older. The continued presence or reemergence of such a reflex later in life can be a sign of brain damage or damage to the nervous system. Also called **infant reflex**.

**primitive superego** in OBJECT RELATIONS THEORY, an early superego that is formed in the PREGENITAL PHASE by the INTROJECTION of especially harsh and terrifying BAD OBJECTS. [first used in 1934 by British psychoanalyst James Strachey (1887–1967)]

**primitivization** *n.* in psychoanalytic theory, the REGRESSION of higher ego functions, such as objective thinking, reality testing, and purposeful behavior, with a return to primitive stages of development characterized by magical thinking (e.g., wish-fulfilling fantasies and hallucinations), helplessness, and emotional dependence. Primitivization occurs primarily in traumatic neuroses, in which higher functions are blocked by the overwhelming task of meeting the emergency, and in advanced schizophrenia, in which the ego breaks down and PSYCHIC ENERGY is withdrawn from external reality and concentrated on a narcissistic fantasy life. [first used in 1950 by Austrian psychoanalyst Ernst Kris (1900–1957)]

**primordial image** see ARCHETYPE.

**principal-axis factor analysis** in EXPLORATORY FACTOR ANALYSIS, an extraction method in which the COEFFICIENT OF MULTIPLE DETERMINATION of one variable with all other variables in the system is used as the initial COMMUNALITY estimate for that variable.

**principal components analysis (PCA)** a data reduction approach in which a number of independent linear combinations of underlying explanatory variables are identified for a larger set of original observed variables. PCA reproduces all of the information in the original CORRELATION MATRIX and does not assume that variables are measured with any degree of error. Thus, the result is a new set of variables (called **principal components**) that are uncorrelated with each other and ordered in terms of the percentage of the total variance for which they account. The technique is similar in its aims to FACTOR ANALYSIS but has different technical features. Also called **principal-components factor analysis**.

**principal components regression** a prediction model that uses a set of uncorrelated variables obtained from a PRINCIPAL COMPONENTS ANALYSIS as predictor or INDEPENDENT VARIABLES. The benefit of this approach is that the original set of predictors in the model may have been so highly interrelated as to result in COLLINEARITY. The drawback is that if the uncorrelated variables are not interpretable, then the problem of collinearity is not solved.

**principal factor analysis** an approach to identifying the dimensions underlying associations among a set of variables by using a COVARIANCE MATRIX of estimated COMMUNALITIES as input. Principal factor analysis assumes that all variables have been measured with some degree of error and requires that dimensions be extracted in a particular way. Specifically, the first dimension extracted must account for the maximum possible variance, having the highest squared correlation with the variables it underlies;

the second dimension must account for the next maximal amount of variance and be uncorrelated with the previously extracted dimension; and so forth. The researcher retains a certain number of dimensions based on various criteria, including interpretations of FACTOR LOADINGS.

**principle** *n.* **1.** a fundamental rule, standard, or precept, especially in matters of morality or personal conduct. **2.** a proposition deemed to be so fundamental and obvious as to need no defense or support. See AXIOM. **3.** in the empirical sciences, a statement of an established regularity, similar to a LAW.

**principled negotiation** a procedure to resolve the conflict between individuals or groups that strives for a mutually beneficial resolution while acknowledging the value of ongoing relationships. The procedure has four main components: (a) separating interpersonal problems from the more substantive issues between the parties and dealing with each issue individually, (b) focusing on the parties' real interests rather than on what they initially say they want, (c) developing possible solutions that benefit all parties, and (d) insisting on objective criteria for the parties' decisions. [first described in 1981 by Roger Fisher (1922–2012) and William L. Ury, U.S. experts on negotiation]

**principle of belongingness** **1.** the learning principle that connections between items are more readily formed if the items are related in terms of sense (i.e., they “belong together”) rather than proximity or contiguity. For example, in “Mary is 12, Sasha is 13, and Alfie is 14,” the 12–Sasha proximity bond is weaker than the 12–Mary belongingness bond. [proposed by Edward L. THORNDIKE] **2.** the idea that associations between some stimuli and responses are readily acquired because of evolutionary predispositions. See PREPAREDNESS.

**principle of beneficence** in RESEARCH ETHICS, the requirement of INSTITUTIONAL REVIEW BOARDS that studies “do good” with respect to the work being conducted, the benefits to society at large, and the treatment of participants. Thus, the researcher should maximize the possible benefits of each study and consider its potential impact in the broadest sense. For example, in a study of implicit attitudes, a researcher might note that understanding more about the measurement of attitudes toward sensitive topics may lead to reduced societal prejudice.

**principle of closure** see CLOSURE.

**principle of common fate** see COMMON FATE.

**principle of common region** see COMMON REGION.

**principle of constancy** in classical psychoanalytic theory, the idea that all mental processes tend toward a state of equilibrium and the stability of the inorganic state. Also called **constancy law**; **law of constancy**. See also DEATH INSTINCT; NIRVANA PRINCIPLE.

**principle of continuity** see GOOD CONTINUATION.

**principle of double effect (PDE)** in ethics, the justification for an act undertaken with good intentions but with a foreseeable harmful side effect, even though it would not be ethical to bring about the harmful effect intentionally. For example, an END OF LIFE decision to provide a terminally ill patient with morphine for pain management and sedation has the potential to hasten the patient's death. Also called **doctrine of double effect (DDE)**; **rule of double effect**. [from *Summa Theologica* (II–II, Qu. 64, Art. 7) by Thomas AQUINAS]

**principle of economy** see LAW OF PARSIMONY.

**principle of equipotentiality** see EQUIPOTENTIALITY.

**principle of good continuation** see GOOD CONTINUATION.

**principle of good shape** see GOOD SHAPE.

**principle of inclusiveness** see INCLUSIVENESS.

**principle of independent assortment** see MENDELIAN INHERITANCE.

**principle of least effort** the basic behavioral hypothesis that an organism will choose a course of action that appears to require the smallest amount of effort or expenditure of energy. Also called **law of least action**; **least effort principle**.

**principle of mass action** see MASS ACTION.

**principle of nonmaleficence** in RESEARCH ETHICS, the requirement of INSTITUTIONAL REVIEW BOARDS that studies “do no harm” to participants. When a person considers taking part in a study, there is an expectation that he or she will leave the study in a state that is no worse than when the study began. Where negative consequences are not entirely avoidable—as in an experiment in which a participant is required to recall painful memories, for example—researchers have a duty to minimize the impact of such consequences.

**principle of optimal stimulation** **1.** a learning theory that organisms tend to learn those responses that result in a preferred level of stimulation or excitation. Also called **optimal stimulation principle**. **2.** a motivational theory that an individual maintains contact with various stimuli so as to achieve and maintain a preferred level of stimulation. Also called **optimal arousal theory**.

**principle of parsimony** see LAW OF PARSIMONY.

**principle of Prägnanz** see PRÄGNANZ.

**principle of primacy** see PRIMACY EFFECT.

**principle of proportionality** the fundamental judicial principle that the severity of a punishment should be directly related to the seriousness of the crime. Harsh punishments for repeat offenders who commit minor offenses may be considered to violate this principle.

**principle of proximity** see PROXIMITY.

**principle of recency** see RECENCY EFFECT.

**principle of segregation** see MENDELIAN INHERITANCE.

**principle of similarity** see SIMILARITY.

**principle of symmetry** see SYMMETRY.

**print enlargement system** a system for individuals with LOW VISION that enlarges and displays printed text or graphics on a computer or other monitor or screen. The system may be designed for use with a video camera and television or with a personal computer and scanner, or it may be a stand-alone device incorporating all necessary components into a single unit. See also CLOSED-CIRCUIT TELEVISION SYSTEM.

**prion** *n.* an aberrant counterpart of a normal cellular protein that acts as the infectious agent in certain brain diseases, notably CREUTZFELDT–JAKOB DISEASE.

**prion disease** any of a group of fatal neurodegenerative diseases caused by self-replicating abnormal PRION proteins

in the brain. Symptoms include gait disturbance, lack of coordination, muscle tremors and jerks, and difficulty in swallowing. Human varieties include CREUTZFELDT–JAKOB DISEASE, FATAL FAMILIAL INSOMNIA, Gerstmann–Straussler–Scheinker syndrome, and KURU. Prion diseases are also known as **spongiform encephalopathies** because of the postmortem appearance of the brain.

**prior distribution** a PROBABILITY DISTRIBUTION of possible values for an unknown population characteristic that is formulated before one obtains any current data observations about the phenomenon of interest. It may be a **subjective prior** (based on a researcher's knowledge of the specific field) or an **objective prior** (based on evidence obtained from other studies). In BAYESIAN methods, the prior distribution is combined with the LIKELIHOOD FUNCTION to yield the POSTERIOR DISTRIBUTION from which inferences are made.

**prior entry** see LAW OF PRIOR ENTRY.

**prior probability** in BAYESIAN methods, the likelihood of a certain event occurring as determined from current accumulated knowledge about the phenomenon. For example, a researcher could calculate the prior probability of a couple divorcing within 5 years of marriage based on estimates obtained from census data and previously conducted studies. See also BAYES THEOREM; POSTERIOR PROBABILITY.

**prisoner abuse** physical or psychological harm perpetrated on an incarcerated individual by those in authority over him or her. Such abuse may include sleep deprivation; refusal of health care; threatened harm to family members; beatings, torture, and other forms of violent coercion; sexual abuse and humiliation; and “enhanced” interrogation techniques utilizing coercive means to extract information from a prisoner or detainee. Particularly since the events in 2003 and 2004 at Abu Ghraib, Iraq, where American military guards used harsh interrogation methods on Iraqi prisoners, there has been debate about the role of psychologists in military-run interrogations of prisoners or detainees (including those at Guantanamo Bay, Cuba). In 2007, the American Psychological Association issued a statement specifically prohibiting psychologists from participating in 19 interrogation techniques (e.g., waterboarding, forced nudity) and asserting that no psychologist should be either directly or indirectly involved in treatment of prisoners that could lead to their physical or psychological harm.

**prisoner of war (POW)** a person held captive by an enemy during a war. Reactions to wartime captivity vary greatly from individual to individual but can include (a) depression due to loss of freedom and identity; (b) paranoia; (c) inertia and loss of interest due to confinement and debilitating conditions; (d) the effects of coercive persuasion, particularly if BRAINWASHING is involved; (e) loss of ego strength; and (f) occasionally, death. See also POSTCAPTIVITY HEALTH PROBLEMS.

**prisoner's dilemma** a MIXED-MOTIVE GAME used in investigations of competition and cooperation. Each participant in the game must choose between a self-beneficial course of action that could be costly for the other players and an action that would bring a smaller individual payoff but would lead to some benefits for all the players. The name derives from a police tactic, used when incriminating evidence is lacking, in which two suspects are separated and told that the one who confesses will go free whereas the other will receive a heavy sentence. If both confess,

both will receive a moderate sentence; if neither confesses, lack of evidence means that they will both escape with a light sentence. Each prisoner may choose silence (the cooperative strategy), hoping that the other does the same but risking a long sentence if the other confesses. Alternatively, either prisoner may confess (the competitive strategy), hoping to improve his or her own situation even though this will be at the expense of the other prisoner. Each prisoner has an incentive to confess regardless of what the other does. However, if both parties choose the competitive option, both will do worse than if they together choose the cooperative strategy. The prisoner's dilemma has implications for SOCIAL EXCHANGE THEORY and the study of SOCIAL DILEMMAS.

**prison psychologist** a psychologist specializing in CORRECTIONAL PSYCHOLOGY.

**prison psychosis** see GANSER SYNDROME.

**privacy** *n.* **1.** the state in which an individual's or a group's desired level of social interaction is not exceeded. **2.** the right to control (psychologically and physically) others' access to one's personal world, such as by regulating others' input through use of physical or other barriers (e.g., doors, partitions) and by regulating one's own output in communication with others. **3.** the right of patients and others (e.g., consumers) to control the amount and disposition of the information they divulge about themselves. See PRIVILEGED COMMUNICATION. —**private** *adj.*

**private acceptance** see CONVERSION.

**private adoption** see ADOPTION.

**private event** an activity or stimulus that is apparent only to the person engaged in or experiencing it. It usually denotes private behavior (e.g., imagining) or private stimuli (e.g., a headache). See also COVERT BEHAVIOR.

**private mental hospital** a hospital for patients with mental disorders that is organized and run by a group of health care professionals (e.g., psychiatrists, psychologists). Typically, a private mental hospital is considerably smaller than a PUBLIC MENTAL HOSPITAL, has a higher doctor–patient ratio, and offers specialized, intensive treatment rather than chronic care.

**private practice** **1.** the practice of a medical or mental health care professional who operates as a self-employed individual. **2.** in the United Kingdom, any medical practice outside the National Health Service.

**private self** the part of the self that is known mainly to oneself, such as one's inner feelings and SELF-CONCEPT. It may be similar to or different from the PUBLIC SELF that one reveals to others. See also SOCIAL IDENTITY.

**private self-consciousness** see SELF-CONSCIOUSNESS.

**private speech** spontaneous self-directed talk in which a person “thinks aloud,” particularly as a means of regulating cognitive processes and guiding behavior. In the theorizing of Lev VYGOTSKY, private speech is considered equivalent to EGOCENTRIC SPEECH.

**privation** *n.* absence of something needed or desired, particularly something required to satisfy essential physiological needs, such as those for food and sleep. Privation is distinct from DEPRIVATION, which involves the initial presence and then removal of such requirements.

**privilege** *n.* **1.** the legal right of an individual to confidentiality of personal information obtained by a profes-



sional in the course of their relationship, as between a patient and a health care professional during the course of treatment or diagnosis. See **PRIVILEGED COMMUNICATION**. **2.** a favor, benefit, or advantage provided to a person or group in return for something, such as cooperation or good behavior.

**privileged access** the relationship that an individual has with his or her private, subjective, conscious experience, which is accessible to and observable by only that person.

**privileged communication** confidential information, especially as provided by an individual to a professional in the course of their relationship, that may not be divulged to a third party without the knowledge and consent of that individual. This protection applies to communications not only between patients and physicians, clinical psychologists, psychiatrists, or other health care professionals but also between clients and attorneys, confessors and priests, and, in most instances, spouses.

**proactive aggression** see **ASSERTION**. See also **AGGRESSION**.

**proactive coping** a stress-management strategy that reflects efforts to build up resources that facilitate promotion toward challenging goals and personal growth. Proactive individuals are motivated to meet challenges, and they commit themselves to their own high standards. They see demands and opportunities in the distant future and initiate a constructive path of action toward meeting them. Stress is interpreted as **EUSTRESS**—that is, productive arousal and vital energy—and coping thus becomes goal management instead of risk management. In contrast to the other three types of coping proposed by German psychologists Ralf Schwarzer (1943– ) and Nina Knoll, proactive coping does not arise from any negative appraisals, such as harm, loss, or threat. See also **ANTICIPATORY COPING**; **PREVENTIVE COPING**; **REACTIVE COPING**.

**proactive interference (PI)** **INTERFERENCE** in new learning due to previous learning of similar or related material. For example, study of French in high school may proactively interfere with college learning of Spanish. Also called **proactive inhibition**. See also **RELEASE FROM PROACTIVE INTERFERENCE**. Compare **RETROACTIVE INTERFERENCE**.

**proattitudinal behavior** behavior that is consistent with an attitude. Having a positive attitude toward a political candidate and agreeing to donate money to that candidate's political campaign is an example of proattitudinal behavior. See also **ATTITUDE-BEHAVIOR CONSISTENCY**. Compare **COUNTERATTITUDINAL BEHAVIOR**.

**probabilism** *n.* **1.** in psychology and other empirical sciences, the concept that events or sequences of events can be predicted with a high, though not perfect, degree of probability and validity on the basis of rational and empirical data. In statistical hypothesis testing associated with empirical research, probabilism is fundamental to the practice of attaching a probability to the truth or falsity of the **NULL HYPOTHESIS**. See also **STOCHASTIC**. **2.** in ethical theory, the notion that when solutions to ethical questions are unclear, one should follow the course with the greatest estimated probability of being ethically correct. It is thought that evidence of a high probability of being correct can be found in agreement among persons of respected moral judgment. —**probabilist** *adj.* —**probabilistic** *adj.*

**probabilistic functionalism** **1.** a theory of percep-

tion proposing that environmental cues are at best approximate indices of the objects they refer to, that organisms select the cues that are most useful for responding, and that the veracity of perceptions should therefore be considered probabilistic rather than certain. [proposed by Egon BRUNSWIK] **2.** the view that behavior is best understood in terms of its probable success in attaining goals.

**probabilistic hypothesis** a hypothesis that is designed to be evaluated in terms of the probability of its being correct, rather than in terms of its being simply either true or false. Probabilistic hypotheses are important in **BAYESIAN** methods.

**probability** (symbol: *p*) *n.* the degree to which an event is likely to occur. See also **CONDITIONAL PROBABILITY**; **PROBABILITY LEVEL**. —**probabilistic** *adj.*

**probability curve** a graphic representation of a **PROBABILITY DISTRIBUTION**. Also called **density curve**.

**probability density function (PDF)** the mathematical representation of the shape of a **PROBABILITY DISTRIBUTION**: It gives the likelihood that a **CONTINUOUS VARIABLE** of interest will assume any specific value from the given range. Also called **density function**; **probability function**.

**probability distribution** a distribution describing the probability that a random variable will take certain values. The best known example is the bell-shaped **NORMAL DISTRIBUTION**; others include the **CHI-SQUARE DISTRIBUTION**, **Student's T DISTRIBUTION**, and the **F DISTRIBUTION**. A probability distribution is a **THEORETICAL DISTRIBUTION**.

**probability learning** a principle of **CHOICE BEHAVIOR** in which the probability of a response tends to approach the probability of the **REINFORCEMENT**.

**probability level (*p* value)** in statistical **SIGNIFICANCE TESTING**, the likelihood that the observed result would have been obtained if the **NULL HYPOTHESIS** of no real effect were true. Small *p* values (conventionally, those less than .05 or .01) suggest that the chance of experimental results mistakenly being attributed to the independent variables present in the study (rather than to the random factors actually responsible) is small. Traditionally, the null hypothesis is rejected if the value of *p* is no larger than the **SIGNIFICANCE LEVEL** set for the test. Also called **probability value**.

**probability plot** a graphic that compares probability values from two data sets; typically, one set will be a series of experimental findings and the other a theoretical set. Good examples are the **probability-probability plot (P-P plot)**, depicting the **CUMULATIVE PROBABILITIES** of one data set against those of the other, and the **QUANTILE-QUANTILE PLOT**.

**probability ratio** the likelihood that a randomly selected unit will have a particular quality as derived from the known or expected frequency of this quality in the population. For example, if a bag contains 300 red balls and 500 white balls, then the probability ratio of drawing a red ball is 300 out of 800 = 3:8.

**probability sampling** any process in which a sample of participants or cases is chosen from a larger group in such a way that each one has a known (or calculable) likelihood of being included. This requires a well-defined **POPULATION** and an objective selection procedure, as in **RANDOM SAMPLING**. Additionally, all members of the population must have some (i.e., nonzero) chance of being selected, al-

though this probability need not be the same for all individuals. Compare NONPROBABILITY SAMPLING.

**probability table 1.** a chart showing all possible outcomes of a situation under specified conditions and their likelihoods of occurrence. For example, one could create a probability table for the number of boys born into a family. **2.** a display of CRITICAL VALUES for various statistical tests (e.g., Z TEST, T TEST, F TEST, CHI-SQUARE TEST) at different SIGNIFICANCE LEVELS and with different DEGREES OF FREEDOM. Probability tables traditionally were presented as appendixes in the back of statistics textbooks but currently are widely available via computer software.

**probability theory** the branch of mathematics and statistics concerned with the study of probabilistic phenomena.

**probability value** see PROBABILITY LEVEL.

**probabilogical model** a theory of attitude and belief structure postulating that beliefs can be viewed as interlinked networks of syllogisms. These networks have vertical structure in that a syllogism containing two beliefs (i.e., the premises) can logically imply a third belief (i.e., the conclusion). They have horizontal structure in that the conclusion for one syllogism can serve as the conclusion for other syllogisms. [originally proposed by William J. MCGUIRE]

**proband** *n.* the family member whose possible genetic disease or disorder forms the center of the investigation into the extent of the illness in the family. He or she is the person around whom a PEDIGREE is drawn and from whom the information about other family members is obtained. Also called **index case**.

**probation** *n.* a criminal sentence in which an offender is not committed to a correctional facility but instead remains in the community under the supervision of a probation officer. Probation is typically accompanied by various conditions intended to control the offender's conduct (e.g., no use of alcohol or drugs, no association with known criminals). See also SHOCK PROBATION.

**probe technique** a memory test in which the participant is asked to recall whether a particular item was among a series of presented items. For example, if the participant hears 1, 3, 5, 7, the probe might be "Was 6 in the list?"

**probing** *n.* in psychotherapy, the use of direct questions intended to stimulate discussion in the hope of uncovering relevant information or helping the client come to a particular realization or achieve a particular insight.

**probit** *n.* *probability unit:* the inverse of the normal CUMULATIVE PROBABILITY DISTRIBUTION. It is used in PROBIT ANALYSIS and other techniques for modeling values of binary variables.

**probit analysis** a type of REGRESSION ANALYSIS in which a dichotomous outcome variable is related to any of a number of different predictor or independent variables. The technique assumes that a latent process generated the observed binary data and often produces very similar results to LOGISTIC REGRESSION. Also called **probit regression**.

**problem behavior** any conduct that is maladaptive, destructive, or antisocial.

**problem box** a problem-solving test consisting of a box with latches, strings, or other fastenings that the partici-

pant must learn to manipulate in such a way as to get in or, in some cases, get out.

**problem checklist** a type of self-report scale listing various personal, social, educational, or vocational problems. The participant indicates the items that apply to his or her situation.

**problem drinking** an informal and broad term referring to alcohol use with negative consequences, ranging from occasional drunkenness leading to missed days of work to a full ALCOHOL USE DISORDER.

**problem finding** the skills involved in locating problems worth solving. Research by psychologists Jacob W. Getzels (1912–2001) and Mihaly CSIKSZENTMIHALYI has suggested that expert artists tend to be better problem finders than are less expert artists; research by sociologist Harriett Zuckerman (1937– ) has indicated that the same distinction applies to scientists.

**problem-focused coping** a stress-management strategy in which a person directly confronts a stressor in an attempt to decrease or eliminate it. This may involve generating possible solutions to a problem, confronting others who are responsible for or otherwise associated with the stressor, and other forms of instrumental action. For example, a student who is anxious about an upcoming examination might cope by studying more, attending every class, and attending special review sessions to ensure he or she fully understands the course material. It has been proposed that problem-focused coping is used primarily when a person appraises a stressor as within his or her capacity to change. Compare EMOTION-FOCUSED COPING. [identified in 1984 by Richard S. LAZARUS and Susan Folkman (1938– ), U.S. psychologists]

**problem isomorphs** problems that have the same underlying structure, so that they require essentially the same operations to achieve a solution. Such problems may vary enormously in their surface structure and in the degree of difficulty experienced by solvers. See ISOMORPHISM.

**problem-oriented record (POR)** a form of patient-care record that has four components: (a) a database of standardized information on a patient's history, physical examination, mental status, and so forth; (b) a list of the patient's problems, drawn from the database; (c) a treatment plan for each problem; and (d) progress notes as related to the problems and to the patient's response to each treatment. Also called **problem-oriented medical record (POMR)**.

**problem representation** a scheme, often a drawing, that represents the relations among elements of a problem. For example, a table might be used to express the relations among two sets of elements, or a flow chart might be used to express the series of steps to be followed in solving a problem.

**problems in living** concrete problems with which patients with chronic mental illness (e.g., schizophrenia) frequently struggle (e.g., inability to keep a job or a place of residence), which are believed to be the most useful focus of treatment after symptoms stabilize with medication. Problems in living are often addressed in day treatment or in aftercare following hospitalization. See PSYCHOSOCIAL REHABILITATION. [proposed by Hungarian-born U.S. psychiatrist Thomas S. Szasz (1920–2012)]

**problem solving** the process by which individuals attempt to overcome difficulties, achieve plans that move

them from a starting situation to a desired goal, or reach conclusions through the use of higher mental functions, such as reasoning and CREATIVE THINKING. Problem solving is seen in nonhuman animals in laboratory studies involving mazes and other tests as well as in natural settings to obtain hidden foods. Many animals display problem-solving strategies, such as the WIN-STAY, LOSE-SHIFT STRATEGY, which allows an animal to solve a new problem quickly based on whether the first response was successful or unsuccessful. In terms of CONDITIONING, problem solving involves engaging in behavior that results in the production of DISCRIMINATIVE STIMULI in situations involving new CONTINGENCIES.

**problem-solving approach 1.** the process whereby difficulties, obstacles, or stressful events are addressed through the use of COPING STRATEGIES. **2.** the theoretical assumption underlying many therapies in the cognitive behavior tradition (e.g., PROBLEM-SOLVING THERAPY) that posits that the symptoms of psychopathology can often be understood as the negative consequences of ineffective or maladaptive coping.

**problem-solving interview 1.** an EMPLOYMENT INTERVIEW in which the interviewee is presented with a problem that must be solved. The idea is that such an approach will reveal the applicant's analytical, creative, and problem-solving abilities under pressure. See also PATTERNED INTERVIEW; STRUCTURED INTERVIEW; UNSTRUCTURED INTERVIEW. **2.** an interview that is focused on specific job-related problems, with the aim of working with the interviewee on reaching constructive and mutually acceptable solutions to deficits in performance. This technique is used both with supervisors and with other employees.

**problem-solving skills training (PSST)** an intervention that focuses on the distortions and deficiencies in cognitive processing in children with DISRUPTIVE BEHAVIOR DISORDERS and that teaches them a step-by-step approach to solving their interpersonal problems by directing their attention to certain aspects of each problem in such a way as to lead to an effective solution. By developing problem-solving skills in these children, PSST aims to lessen the frustrations that lead to disruptive behaviors. Prosocial behaviors are fostered through modeling and direct reinforcement as part of the problem-solving process. Also called **cognitive problem-solving skills training**. See also PARENT MANAGEMENT TRAINING. [developed by U.S. clinical child psychologist Alan E. Kazdin (1945– )]

**problem-solving therapy (PST)** an evidence-based cognitive behavior intervention to improve an individual's ability to cope with stressful life experiences by enhancing his or her problem-solving skills. The skills that the therapy aims to augment are (a) problem orientation (the way one approaches and recognizes problems); (b) problem definition in concrete terms; (c) generation of possible solutions; (d) decision making (evaluating the consequences of alternative solutions and selecting ones that are most optimal); and (e) solution implementation and evaluation of a solution's outcome after implementation. PST has been effective in the treatment of various psychological and behavioral problems, such as depression, anxiety, and conduct disorder, and of distress associated with chronic medical conditions, such as coronary heart disease, cancer, and HIV/AIDS. Also called **problem-solving training**. [developed in the 1980s by U.S. clinical psychologists Thomas J. D'Zurilla (1938– ), Arthur M. Nezu (1952– ), and Christine Maguth Nezu (1952– )]

**problem space** the mental representation of a problem and of all the possible paths to solving it.

**procaine** *n.* a local anesthetic used primarily in medical and dental procedures. Procaine was introduced in 1905 as the first synthetic substitute for cocaine.

**procedural justice 1.** in legal proceedings, the use of methods and procedures that are fair and impartial, as distinct from the making of just decisions. The various rules governing how witnesses are questioned and what evidence is admitted into court are examples of the application of procedural justice within the legal system. **2.** see ORGANIZATIONAL JUSTICE.

**procedural knowledge** see PROCEDURAL MEMORY.

**procedural learning** the process of acquiring skill at a task, particularly a task that eventually can be performed automatically (i.e., without attention), as opposed to acquiring a DECLARATIVE MEMORY or FACTUAL KNOWLEDGE about it.

**procedural memory** long-term memory for the skills involved in particular tasks. Procedural memory is demonstrated by skilled performance and is often separate from the ability to verbalize this knowledge (see DECLARATIVE MEMORY). Knowing how to type or skate, for example, requires procedural memory. Also called **sensorimotor memory**.

**procedural rationality** the rationality of the processes used in arriving at a decision, as opposed to the rationality of the decision itself. Compare SUBSTANTIVE RATIONALITY.

**proceptivity** *n.* the period during MATING BEHAVIOR when females actively solicit males for copulation. Proceptivity is distinguished from the more passive RECEPTIVITY to indicate the female's active role in mating.

**process analysis 1.** in psychotherapy, the examination of the interaction between the therapist and the client and of their evolving relationship, as opposed to the content of their discussions. **2.** in evaluation research, an analytic procedure that focuses on each element of a program in order to identify ways of improving program operations. See also IMPLEMENTATION EVALUATION.

**process approach** a method of NEUROPSYCHOLOGICAL ASSESSMENT that emphasizes observing, scoring, and analyzing the qualitative aspects of patient behavior in a systematic manner, in addition to obtaining test scores during the evaluation. For example, a clinician would carefully analyze a patient's approach to items on a BLOCK-DESIGN TEST, in addition to obtaining the patient's total score on the measure. Also called **Boston Process Approach**. [first advanced by Edith KAPLAN and her colleagues at the Boston VA Health Care System]

**process conflict** see INTRAGROUP CONFLICT.

**process consultation** an ORGANIZATIONAL DEVELOPMENT intervention in which work groups are observed by a consultant, who provides feedback on how to improve the effectiveness with which members work together.

**process-dissociation procedure (PDP)** a method for separating conscious (or intentional) and nonconscious (or automatic) uses of memory and for producing estimates of the isolated contributions of RECOLLECTION and FAMILIARITY to memory performance. Based on the idea that no test of memory is process pure—that is, performance on any test is likely to result from both conscious

and nonconscious memory processes—the PDP works by placing these two processes in opposition. After an initial study phase, the PDP uses an inclusion test, during which participants are instructed to respond to the cues (e.g., word stems) with previously studied words, and an exclusion test, during which participants are instructed to respond to the cues with any word that comes to mind except the previously studied words. It is assumed that both recollection, which is intentional, and familiarity, which is automatic, contribute to memory performance on the inclusion test, but that the production of a previously studied item on the exclusion test must result only from familiarity. Using a series of equations, estimates for recollection and familiarity can be obtained. In addition to this general logic, the PDP depends on several assumptions (e.g., that the two processes are independent). Also called **method of opposition**; **process-dissociation method**. [developed by U.S. psychologist Larry L. Jacoby (1944– )]

**Processes of Adaptation in Intimate Relationships Project** see PAIR PROJECT.

**process evaluation** in evaluation research, an in-house function in which the evaluator quickly moves into the situation to be evaluated, conducts the evaluation, feeds findings back to the program administrator for immediate program modification (if necessary), then repeats the process for as long as required. See also FORMATIVE EVALUATION.

**process experiential psychotherapy** an approach to psychotherapy that focuses on the client's moment-to-moment experience and guides his or her cognitive and affective processing in the direction of client-defined goals. The THERAPEUTIC ALLIANCE, internal patterns of viewing the self and others, and an emphasis on therapeutic process over content are core elements of this therapy. See also CLIENT-CENTERED THERAPY; GESTALT THERAPY; HUMANISTIC THERAPY. [proposed by South African-born Canadian psychologist Leslie S. Greenberg (1945– )]

**processing-efficiency theory** a theory that attempts to explain the relationship between anxiety and performance (see AROUSAL–PERFORMANCE RELATIONSHIP). It suggests that anxiety serves two functions: (a) It increases worry and takes attentional resources, and (b) the worry created serves a monitoring function by identifying a task as important, so that the individual increases effort at the task, which overcomes the depleted attentional capacity (see CAPACITY MODEL).

**Processing Speed Index** an index from more recent versions of the WECHSLER ADULT INTELLIGENCE SCALE and other Wechsler tests that measures the speed of nonverbal processing.

**process loss** in the social psychology of groups, any action, operation, or dynamic that prevents the group from reaching its full potential, such as reduced effort (SOCIAL LOAFING), inadequate coordination of effort (COORDINATION LOSS), poor communication, or ineffective leadership. See also COLLECTIVE EFFORT MODEL; RINGELMANN EFFECT; SOCIAL INTERFERENCE; SUCKER EFFECT.

**process model of emotion regulation** a model proposing that EMOTION REGULATION may occur at two different points in the emotion-generative process: ANTECEDENT-FOCUSED EMOTION REGULATION is evoked at the front end, or very early in the process, whereas RESPONSE-FOCUSED EMOTION REGULATION occurs at the back end, or after

an emotional response has been triggered. [proposed in 1998 by U.S. clinical psychologist James J. Gross]

**process observer 1.** in groups, the member who observes and comments on the group's functioning. This role may be formally designated or taken on informally by one or more group members. **2.** a consultant who helps groups to improve their performance by observing the unit as it works and discussing these observations with the unit.

**processor n. 1.** in INFORMATION THEORY, any device or system that can perform specific operations on data that have been presented to it in proper format. **2.** in computer science, a computer or its principal operating part. See CENTRAL PROCESSOR.

**process-reactive adj.** relating to a disease model of schizophrenia based on the distinction between gradual and acute onset of symptoms. PROCESS SCHIZOPHRENIA is marked by a long-term gradual deterioration before the disease is manifest, whereas REACTIVE SCHIZOPHRENIA is associated with a rapid onset of symptoms after a relatively normal premorbid period.

**process research** the study of various psychological mechanisms or processes of psychotherapy as they influence the outcome of treatment or the reactions that the therapist or client may have during treatment. A basic goal of such research is to identify therapeutic methods and processes that are most effective in bringing about positive change, as well as any inadequacies or other limitations. In other words, process research focuses on the means by which participants benefit from receiving an intervention. Compare OUTCOME RESEARCH. See also PSYCHOTHERAPY RESEARCH.

**process schizophrenia** a form of schizophrenia that begins early in life, develops gradually, is believed to be due to endogenous (biological or physiological) rather than environmental factors, and has a poor prognosis. Psychosocial development before the onset of the disorder is poor; individuals are withdrawn, are socially inadequate, and indulge in excessive fantasies. This term is often used interchangeably with NUCLEAR SCHIZOPHRENIA. Also called **poor premorbid schizophrenia**. Compare REACTIVE SCHIZOPHRENIA. [proposed in 1959 by U.S. psychologists Norman Garmezy (1918–2009) and Eliot H. Rodnick (1911–1999)]

**process study** any investigation undertaken to assess the mechanisms and variables that contribute to and influence the outcome of a particular activity. For example, a process study of GROUP THERAPY sessions may seek to determine characteristics of the therapeutic interaction that are associated with positive, neutral, or negative changes individually and across the group. See also PROCESS RESEARCH.

**process variable 1.** any set of PSYCHOLOGICAL FACTORS that has an effect on the development or modification of a process over time. **2.** an interpersonal, affective, cognitive, or behavioral factor that is operative during the course of psychotherapy or counseling and influences the progress or the course of behavior.

**prochlorperazine n.** a low-potency PHENOTHIAZINE used for the treatment of nausea and vomiting and occasionally for the control of anxiety. It was formerly used as an antipsychotic agent. U.S. trade name (among others): **Compazine**.

**pro-choice adj.** supporting a woman's right to freely

make informed decisions regarding her reproductive options, including the right to choose safe, legal abortion or to choose to have children. Compare PRO-LIFE.

**procreative sex** sexual activity that can result in pregnancy. In some cultures and religions, this is the basis for what is considered to be normal sex, as opposed to deviant or sinful sexual activity.

**Procrustes analysis** in statistical analysis, an approach in which empirical data are superimposed onto some fixed target matrix or other structure of theoretical interest. The name derives from the robber in Greek mythology who forced his victims to fit his bed by stretching them or cutting off their limbs.

**procyclidine** *n.* an ANTICHOLINERGIC DRUG that is used in the treatment of Parkinson's disease and drug-induced EXTRAPYRAMIDAL SYMPTOMS. U.S. trade name: **Kemadrin**.

**prodigy** *n.* an individual, typically a child, who displays unusual or exceptional talent or intelligence, often in a discrete area of expertise, such as mathematics, music, or chess. Even if naturally endowed with such exceptional abilities, prodigies still require the opportunity and dedication to train and develop their gifts. They do not always develop into accomplished adults: There appears to be an important transition between the two, and only a proportion of prodigies successfully negotiate this transition. See also GIFTEDNESS.

**prodromal myopia** see MYOPIA.

**prodromal syndrome** a set of traits, symptoms, or neurological deficits that may signal the onset of a psychological or neurological disorder.

**prodrome** *n.* an early symptom or symptoms of a mental or physical disorder. A prodrome frequently serves as a warning or premonitory sign that may, in some cases, enable preventive measures to be taken. Examples are the AURAS that often precede epileptic seizures or migraine headaches and the headache, fatigue, dizziness, and insidious impairment of ability that often precede a stroke. Also called **prodromic phase**. —**prodromic** *adj.* —**prodromal** *adj.*

**prodrug** *n.* a drug that is either biologically inert or of limited activity until metabolized to a more active derivative.

**product appeal** see APPEAL.

**product champion** an individual who supports an innovation (e.g., a new technology) and provides information regarding its benefits so that the target user groups will adopt the innovation. Such individuals are held to play a key role in INNOVATION DIFFUSION and CHANGE MANAGEMENT.

**product image** in consumer psychology, the associations evoked by a particular brand. Product image is established usually on the basis of careful psychological studies and aims to instill in consumers a receptive feeling for the product. For example, some brands of coffee are identified as mountain-grown in Latin America, hand-picked by experts with Hispanic names, and carefully roasted to yield a rich, dark beverage, although the brand may actually contain coffees from Africa or Indonesia. Also called **brand image**.

**production deficiency** in problem solving, failure to find the right or best strategy for completing a task (sometimes even after successful instruction), as opposed to fail-

ure in implementing it. Compare MEDIATIONAL DEFICIENCY; UTILIZATION DEFICIENCY.

**production effect** the finding that when people speak a word aloud during study, they generally remember that word better than if they read it silently.

**production method** see MAGNITUDE PRODUCTION.

**production rules** the if-then statements describing the conditions under which a rule relating to a cognitive skill is to be applied (*if . . .*) and the action to be implemented (*then . . .*). See PRODUCTION SYSTEM.

**production system** a rule-based computer program that makes decisions or solves problems (see RULE-BASED SYSTEM). It operates according to a set of if-then (i.e., state-action) rules, such that if a certain state occurs, then an associated action is executed, thus altering the state, which produces a new action, and so on. A production system consists of three components: (a) the production memory, represented as sets of if-then rules; (b) the working memory, which contains information related to the present state of the problem solving, represented as patterns to be submitted to the production memory; and (c) a control regime that takes the patterns (representing the current state of the problem solving) from working memory to the set of production rules. When a production rule matches this pattern, it "fires" and produces a new pattern (reflecting the new state of the problem solving), which is then placed in working memory. This cycle continues until no patterns in working memory match the production rules. The production system approach is used as a COGNITIVE ARCHITECTURE by many researchers in cognitive science. See also ADAPTIVE PRODUCTION SYSTEM; SOAR.

**production task 1.** a cognitive test in which the participant is required to generate as many items as possible that adhere to specified criteria. Production tasks may take a variety of different forms. For example, in a word-production task, individuals may be asked to list as many exemplars from a given subject category (e.g., flower names) as possible, whereas in a sentence-production task, individuals may be asked to create as many unique sentences as possible that contain certain elements (e.g., a transitive verb, a noun, and a target stimulus word). **2.** any test of linguistic development in which the participant is required to speak or write rather than to demonstrate understanding of material spoken or written by others. For example, in an experiment assessing foreign-language acquisition, native-English speakers studying German might be asked to read aloud a series of German sentences.

**productive language** see EXPRESSIVE LANGUAGE.

**productive love** in psychoanalytic theory, the capacity of healthy individuals to establish close, interdependent relationships without abridging their individuality. Respect, care, responsibility, and knowledge of the other are essential components. According to Erich FROMM, productive love is accomplished through active effort and is an aspect of the PRODUCTIVE ORIENTATION.

**productive orientation** in psychoanalytic theory, a personality pattern in which the individual is able to develop and apply his or her potentialities without being unduly dependent on outside control. Such an individual is highly active in feeling, thinking, and relating to others and at the same time retains the separateness and integrity of his or her own self. [introduced by Erich FROMM]

**productive thinking** in the theory of Erich FROMM,

thinking in which a given question or issue is considered with objectivity as well as respect and concern for the problem as a whole. It is a feature of the PRODUCTIVE ORIENTATION.

**productive vocabulary** an individual's vocabulary as defined by the words that he or she regularly uses, as opposed to those that he or she can understand when used by others. Also called **active vocabulary**; **working vocabulary**. Compare RECEPTIVE VOCABULARY.

**productivity** *n.* **1.** the relationship between the quantity or quality of output (goods created or services provided) and the input (time, materials, etc.) required to create it. **2.** the capacity to produce goods and services having exchange value. VOCATIONAL REHABILITATION programs often use the productivity of people with disabilities as a major measure of the effectiveness of the programs. **3.** according to Roger BROWN, one of the formal properties of all language, consisting of the ability to combine individual words to produce an unlimited number of sentences. See SEMANTICITY.

**product-moment correlation coefficient** (symbol: *r*) an index of the degree of linear relationship between two variables. Devised by Karl PEARSON, it is often known as the **Pearson product-moment correlation coefficient** (**Pearson's *r***) and is one of the most commonly used SAMPLE CORRELATION COEFFICIENTS.

**product rule** see DURHAM RULE.

**product testing** the testing of consumer response to a new product before or after it has been offered for sale. In the United States, such tests are usually conducted on a limited scale in certain markets, such as in Omaha, Nebraska, or Rochester, New York, which have been studied intensively and have populations with known consumer characteristics. Large-scale advertising campaigns are based on results of the localized product testing, which also may influence changes in product or package design.

**proecological behavior** behavior that promotes the quality of the natural environment. Examples include recycling, efficient use of energy, and use of mass transportation. Among topics examined in the analysis of these behaviors are ENVIRONMENTAL ATTITUDES, economic and political impediments, and sociodemographic factors. See also SOCIAL TRAP.

**proestrus** *n.* the period that immediately precedes ESTRUS.

**profession** *n.* an OCCUPATION requiring specialized training and skills that meet the established qualifications for entrance into the profession and that match subsequent performance criteria. Among other requirements is adherence to the profession's rules of conduct governing general business practices and ethical relations between members of the profession and their colleagues and clients. See PROFESSIONAL ETHICS; PROFESSIONAL LICENSING; PROFESSIONAL STANDARDS. See also VOCATION. —**professional** *adj., n.* —**professionalize** *vb.*

**professional-apptitude test** any test used for selecting candidates for professional training. Typical aptitudes tested include the mental capacity, ability to acquire information and skills, and cognitive style needed for general higher education and proficiency in specific professions, such as psychology, law, science, nursing, engineering, dentistry, medicine, accounting, theology, and teaching.

**professional-client sexual relations** a boundary

violation (see BOUNDARY ISSUES) in which a health care professional engages in sexual relations with a patient under his or her care.

**professional development** the continuing education or training that is often expected or required of people employed in a profession. Professional organizations often assist the professional development of their members by providing courses, conferences, literature, and other services. See also CAREER DEVELOPMENT; MANAGEMENT DEVELOPMENT.

**professional ethics** rules of acceptable conduct that members of a given profession are expected to follow. See BOUNDARY ISSUES; CODE OF ETHICS; ETHICS; PROFESSIONAL STANDARDS; STANDARDS OF PRACTICE.

**professional labeling** see LABELING.

**professional licensing** the imposition of state-regulated minimal standards for legal employment as a member of a given profession. Professional licensing usually consists of three parts: provisional certification, full certification, and recertification. See LICENSE.

**professional manager** a person occupying a managerial position in an organization who has been extensively prepared and trained for that position and thus possesses specialized knowledge of important principles, practices, and procedures.

**professional standards** the levels of performance and conduct required or expected in a particular profession. See also CODE OF ETHICS; PROFESSIONAL ETHICS; STANDARDS OF PRACTICE.

**profile** *n.* **1.** a graphical representation of the scores of an individual (or the means of groups of individuals) on multiple measures. The *x*-axis of the graph usually represents the various measures, whereas the *y*-axis is the score of the individual on the corresponding measure. Usually the points are connected by short line segments. See PERSONALITY PROFILE; TEST PROFILE. **2.** a group of characteristics indicating that a particular type of person is likely to engage in a certain behavior. See CRIMINAL PROFILING.

**profile analysis** a multivariate statistical technique that compares independent groups of individuals across several constructs or dimensions (e.g., of personality) that are measured on the same scale in terms of their mean level or elevation, their shape, and their scatter or variability. The data can be depicted graphically with the scale name on the *x*-axis, the scale score on the *y*-axis, and different lines reflecting the different groups being examined.

**profile matching system** a method of PERSONNEL SELECTION in which decisions to hire or reject candidates for employment are based on the degree of fit between an applicant's characteristics and a profile of the ideal or typical employee in the position. See also INTERVIEWER STEREOTYPE.

**profile of a disorder** a drawn or mechanically generated outline, often a graph, representing the symptoms and characteristics of a disorder.

**Profile of Mood States (POMS)** a brief self-report instrument measuring six dimensions of transient and fluctuating mood states over time: tension or anxiety, depression or dejection, anger or hostility, vigor or activity, fatigue or inertia, and confusion or bewilderment. Participants indicate on a 5-point scale ranging from *not at all* to *extremely* whether each of the 65 adjectives listed (e.g., confused,

P

spiteful, energetic, good-natured) is descriptive of themselves within the specified time frame. A mentally healthy profile on the POMS is known as the ICEBERG PROFILE. [originally developed in 1971 by U.S. psychologist Douglas M. McNair (1927–2008), U.S. psychometrician Maurice Lorr (1910–1998), and U.S. psychologist Leo F. Drippleman (1936–2009)]

**profiling** *n.* **1.** see CRIMINAL PROFILING. **2.** in sport, an exercise in which athletes first identify the most important physical and mental components necessary for optimal performance and then assess the degree to which they possess each of these components.

**profound mental retardation** an older diagnostic category for those with IQs below 20, comprising about 1% of people with MENTAL RETARDATION. It is due to sensorimotor abnormalities as well as intellectual factors; typical developmental attainments include rudimentary speech and limited self-care, and affected individuals require life-long supervision in highly structured environments.

**progeria** *n.* see AGING DISORDER.

**progesterone** *n.* a hormone, secreted mainly by the CORPUS LUTEUM in the ovary, that stimulates the proliferation of the endometrium (lining) of the uterus required for implantation of an embryo. If implantation occurs, progesterone continues to be secreted—first by the corpus luteum and then by the placenta—maintaining the pregnant uterus and preventing further release of egg cells from the ovary. It also stimulates development of milk-secreting cells in the breasts.

**progestogen** *n.* a steroid that includes the natural hormone progesterone and synthetic steroids (known as **progestins**) with physiological effects similar to those of progesterone. Progestins may be derived from progesterone or testosterone. Whereas progesterone has an antiestrogenic action, progestins may have different effects, such as proestrogenic activity. They are used in oral contraceptives, HORMONE REPLACEMENT THERAPY, and medications for menstrual disorders.

**P** **prognosis** *n.* **1.** in medicine and mental health science, a prediction of the course, duration, severity, and outcome of a condition, disease, or disorder. Prognosis may be given before any treatment is undertaken, so that the patient or client can weigh the benefits of different treatment options. **2.** more generally, any prediction or forecast. —**prognostic** *adj.*

**program effectiveness** conclusions drawn about PROGRAM OUTCOMES from testing an intervention as it is actually executed in the context of routine everyday service delivery. This method contains several threats to INTERNAL VALIDITY because it must rely on procedures that are not scientifically controlled. Compare PROGRAM EFFICACY.

**program efficacy** conclusions drawn about PROGRAM OUTCOMES from testing an intervention under closely controlled scientific conditions, which may narrowly define the type of individual receiving services, the nature of services offered, and so forth. Because this method involves the provision of services under conditions that are very different from everyday real-world service delivery, there are dangers that it may not achieve a high degree of EXTERNAL VALIDITY. Compare PROGRAM EFFECTIVENESS.

**program evaluation** an appraisal process that contributes to decisions on installing, continuing, expanding, certifying, or modifying social programs, depending on their

effectiveness. Program evaluation also is used to obtain evidence to rally support or opposition for the organization providing services and to contribute to basic knowledge in the social and behavioral sciences about social interventions and social experimentation. See EVALUATION RESEARCH.

**Program for Learning in Accordance With Needs (PLAN)** an individualized instructional system covering language arts, mathematics, science, and social studies in Grades 1 through 12. It is based on learning objectives developed by the teacher and the student together. This system illustrated how programmed learning and, ultimately, computers could play an important and integral role in individualizing education. [developed in the 1960s by U.S. psychologist John C. Flanagan (1906–1996)]

**program impact** the effects of a program designed to produce some type of good or service, measured in terms of success or failure in achieving these objectives.

**program integrity** the extent to which an intended program is actually delivered. Also called **treatment integrity**.

**programmed cell death** the orderly death and disposal of surplus tissue cells, which occurs as part of tissue remodeling during development, or of worn-out and infected cells, which occurs throughout life. Also called **apoptosis**.

**programmed instruction** a learning technique, used for self-instruction and in academic and some applied settings, in which the material is presented in a series of sequential, graduated steps, or **frames**. The learner is required to make a response at each step: If the response is correct, it leads to the next step; if it is incorrect, it leads to further review of the material presented in the prior step. Also called **programmed learning**. See TEACHING MACHINE.

**programmed practice** the homework component of IN VIVO EXPOSURE, in which a client directly confronts feared stimuli outside of therapeutic sessions. Programmed practice is used as a concomitant strategy to the primary treatment with the therapist, and clients often are instructed to keep a behavioral diary of all self-directed exposure practice. Some practitioners and researchers, however, use the term more generally as a synonym of EXPOSURE THERAPY itself.

**programming** *n.* **1.** the planning of a sequential set of operations in such areas as social organization or experimental research. **2.** see COMPUTER PROGRAMMING.

**programming language** see COMPUTER PROGRAMMING.

**program monitoring** the use of key indicators to measure program performance. The purposes and regularity of this activity vary widely and include PROCESS EVALUATION, information provided from management information systems, and performance measurement that identifies program outcomes. Typically, these methods do not assess the impact of the program. See also PROGRAM EFFECTIVENESS; PROGRAM IMPACT.

**program outcome** any or all of the effects that arise from the implementation of a program. Also called **program output**.

**Progressive Achievement Tests (PAT)** **1.** assessment tests that provide information on the reading vocabulary,

reading comprehension, and mathematics achievement of students in comparison with national norms. Progressive Achievement Tests are generally used for diagnostic purposes at the beginning of a school year and are available for Grades 4 through 10. They were developed by the New Zealand Council for Educational Research. **2.** see CALIFORNIA ACHIEVEMENT TESTS.

**progressive bulbar palsy** see BULBAR PARALYSIS.

**progressive education** a broad educational approach originally associated with John DEWEY's philosophy. It emphasizes experimentalism as opposed to dogmatism in teaching, learning by doing, recognition of individual rates of learning, latitude in selecting areas of study according to interest, and a close relationship between academic learning and experience in the world outside the classroom.

**progressive-interval schedule (PI schedule)** in conditioning, an arrangement in which the presentation of each reinforcer is dependent on the first response that occurs after a fixed interval of time has passed, with this interval increasing after each reinforcement. The amount by which the interval increases can be based on any of various functions. For example, a progressive-interval schedule might begin with an interval of 30 seconds, which is then increased by 30 seconds after each subsequent reinforcement.

**progressive lipodystrophy** see LIPODYSTROPHY.

**Progressive Matrices** see RAVEN'S PROGRESSIVE MATRICES.

**progressive muscle relaxation** see PROGRESSIVE RELAXATION.

**progressive muscular atrophy** see SPINAL MUSCULAR ATROPHY.

**progressive myopia** see MYOPIA.

**progressive-ratio schedule (PR schedule)** in conditioning, an arrangement in which each reinforcer is presented on the completion of a particular number of responses and the number of responses required increases after each reinforcement. The amount by which the number increases can be determined by any of various functions, although most commonly the number increases by a fixed amount from reinforcement to reinforcement. Progressive-ratio schedules are often used to measure the effectiveness of reinforcers.

**progressive relaxation** a technique in which the individual is trained to relax the entire body by becoming aware of tensions in various muscle groups and then relaxing one muscle group at a time. In some cases, the individual consciously tenses specific muscles or muscle groups and then releases tension to achieve relaxation throughout the body. Also called **Jacobson relaxation method; progressive muscle relaxation**. [developed by U.S. physician Edmund Jacobson (1888–1983)]

**progressive spinal muscular atrophy** see SPINAL MUSCULAR ATROPHY.

**progressive supranuclear palsy** a progressive neurological disorder usually starting in the 6th decade of life and characterized by OCULOMOTOR PALSY, with downward gaze particularly affected. The condition may be accompanied by PARKINSONISM, postural instability, speech and swallowing difficulties, DYSTONIA, personality changes, and typically mild cognitive impairment. Pathology often

shows loss of neurons and GLIOSIS in various regions of the brainstem, basal ganglia, and midbrain. Also called **Steele-Richardson-Olszewski syndrome; supranuclear palsy**.

**progressive teleologic regression** the purposive return of a person with schizophrenia to the PRIMARY PROCESS level, in an attempt to avoid tension, stress and anxiety, and a self-image that has become bizarre, threatening, and frightening. The regression is progressive because it fails to accomplish its purpose and becomes more extreme. [first described by Italian-born U.S. psychiatrist Silvano Arieti (1914–1982)]

**projected jealousy** a type of behavior in which individuals who are unfaithful, or who repress impulses to be unfaithful, accuse their partners of infidelity, thereby projecting their own impulses.

**Project Follow Through** a U.S. government-funded program to develop and evaluate a variety of effective models for educating primary-school children from low-income families. A complement to HEAD START, Project Follow Through began in 1967, involved more than 100,000 students, and lasted 10 years. Direct instruction was shown by various measures of achievement, cognitive skills, and self-esteem to be the most effective method of teaching. Psychologists had major responsibilities in all phases of Project Follow Through: planning the project, administering it, designing and implementing programs, reviewing and critiquing the total effort, and evaluating outcomes.

**Project Head Start** see HEAD START.

**projection** *n.* **1.** in psychoanalytic and psychodynamic theories, the process by which one attributes one's own individual positive or negative characteristics, affects, and impulses to another person or group. This is often a DEFENSE MECHANISM in which unpleasant or unacceptable impulses, stressors, ideas, affects, or responsibilities are attributed to others. For example, the defense mechanism of projection enables a person conflicted over expressing anger to change "I hate him" to "He hates me." Such defensive patterns are often used to justify prejudice or evade responsibility; in more severe cases, they may develop into paranoid delusions in which, for example, an individual who blames others for his or her problems may come to believe that those others are plotting against him or her. In classical psychoanalytic theory, projection permits the individual to avoid seeing his or her own faults, but modern usage has largely abandoned the requirement that the projected trait remain unknown in the self. **2.** in linear algebra and EXPLORATORY FACTOR ANALYSIS, the mapping of a set of points in multidimensional space. —**project** *vb.*

**projection area** an area of the CEREBRAL CORTEX that receives inputs from a particular sense organ. Each sense sends messages to two or more projection areas.

**projection fiber** a nerve fiber that carries impulses from the cerebral cortex to subcortical structures (e.g., the thalamus, hypothalamus, basal ganglia).

**projection neuron** a neuron with a long axon extending some distance from the cell body. Also called **Golgi Type I neuron**. Compare LOCAL CIRCUIT NEURON.

**projective device** in consumer psychology, a word-association technique used in MOTIVATION RESEARCH. Key words are mixed with neutral background words and individuals are asked to make associations without being aware of which terms are the key words. Such techniques



enable advertisers to learn which words are likely to be most attractive to consumers when used in advertising copy. Some versions also include cartoon characters or scenes for which individuals are asked to provide a dialogue.

**projective doll play** see DOLL PLAY.

**projective identification** **1.** in psychoanalysis, a DEFENSE MECHANISM in which the individual projects qualities that are unacceptable to the self onto another individual and that person internalizes the projected qualities and believes himself or herself to be characterized by them appropriately and justifiably. See PROJECTION. **2.** in the OBJECT RELATIONS THEORY of Melanie KLEIN, a defense mechanism in which a person fantasizes that part of his or her EGO is split off and projected into the OBJECT in order to harm or to protect the disavowed part, thus allowing the individual to maintain a belief in his or her omnipotent control. Projective identification is a key feature of Klein's PARANOID-SCHIZOID POSITION. Building on Klein's work, British psychoanalyst Wilfred Bion (1897–1979) theorized that, in normal communication development, an infant will project part of his or her mind into an object in order to have that part of the mind felt and understood by the object.

**projective method** see PROJECTIVE TECHNIQUE.

**projective play** a variation of PLAY THERAPY in which dolls and other toys are used by children to express their feelings, which can be helpful in diagnosing mental disturbances.

**projective psychotherapy** a treatment procedure in psychotherapy in which selected responses on various projective tests are fed back to the client, who associates with them in much the same way that psychoanalytic patients make FREE ASSOCIATIONS. [developed by U.S. psychologist Molly Harrower (1906–1999)]

**projective technique** any assessment procedure that consists of a series of relatively ambiguous stimuli designed to elicit unique, sometimes highly idiosyncratic, responses that reflect the personality, cognitive style, and other psychological characteristics of the respondent. Examples of this type of procedure are the RORSCHACH INKBLOT TEST and the THEMATIC APPERCEPTION TEST, as well as sentence-completion, word-association, and drawing tests. The use of projective techniques has generated considerable discussion among researchers, with opinions ranging from the expressed belief that personality assessment is incomplete without data from at least one or more of these procedures to the assertion that such techniques lack important psychometric features such as RELIABILITY and VALIDITY. Also called **projective method**.

**project method** a teaching structure in which students work alone or together to initiate, develop, and carry out learning projects with a minimal amount of direct guidance from the teacher.

**project team** see CROSS-FUNCTIONAL TEAM.

**prolactin** *n.* a PEPTIDE hormone both synthesized and released into the bloodstream by specialized cells in the anterior PITUITARY GLAND called **lactotrophs**. Although generally known for its originally described role in initiating and maintaining LACTATION—prolactin levels rise significantly in women during pregnancy, stimulating the MAMMARY GLANDS to grow and subsequently produce milk—prolactin also performs many other essential reproductive, homeostatic, and behavioral functions in both sexes. These in-

clude such activities as preserving the CORPUS LUTEUM and enhancing its secretion of PROGESTERONE, modulating sexual arousal and the orgasmic REFRACTORY PHASE, influencing SPERMATOGENESIS, regulating PROSTATE gland development, regulating the IMMUNE RESPONSE, regulating water and electrolyte concentrations (OSMOREGULATION), modulating OLIGODENDROCYTE precursor production, and inhibiting FAT METABOLISM. Prolactin also is associated with mammalian and avian parental behavior, with prolactin variation possibly explaining individual differences in parental choices and the initiation of parental interactions. Given such versatility of action, it is not surprising that prolactin receptors are found throughout the body, including within the HYPOTHALAMUS, HIPPOCAMPUS, AMYGDALA, and other areas of the central nervous system; the THYMUS and LYMPHOCYTES of the immune system; and the liver, kidney, prostate, testis, ovary, uterus, mammary glands, and numerous other organs. Also called **lactogenic hormone**; **lactotropic hormone**; **lactotropin**; **luteotropic hormone (LTH)**; **luteotropin**.

**prolapsed intervertebral disk** see SLIPPED DISK.

**pro-life** *adj.* denoting a position or social movement that opposes or aims to limit the right to legal abortion, often on religious grounds. Compare PRO-CHOICE.

**proliferation** *n.* rapid reproduction or multiplication, particularly of new or diseased cells. Both benign and malignant tumors, for instance, experience a high rate of cell division and growth.

**Prolixin** *n.* a trade name for FLUPHENAZINE.

**PROLOG** *n.* PRO(gramming) LOG(ic): a high-level computer language that is important in ARTIFICIAL INTELLIGENCE research. Inference in PROLOG is a form of deduction but is not mathematically sound due to several pragmatic compromises, including the use of “cut” to control backtracking and “negation” as the failure to find correct results. A strength of the language is a powerful pattern matcher based on unification, for use in PRODUCTION SYSTEM applications.

**prolonged exposure therapy** a form of COGNITIVE BEHAVIOR THERAPY for posttraumatic stress disorder in adults. Based on EMOTIONAL PROCESSING THEORY, it is a brief treatment, involving 9 to 12 sessions of 60 to 90 minutes each conducted once or twice weekly. The first two sessions are devoted to information gathering, explanation of treatment rationale, treatment planning, and BREATHING RETRAINING. During the remaining sessions, clients relive their traumatic experiences by imagining them as vividly as possible and describing them aloud in the present tense (i.e., IMAGINAL EXPOSURE), including their thoughts, feelings, and physical sensations at the time. These narratives are recorded, and clients are instructed to listen to the recordings as homework. They are also instructed to confront, as homework, situations and stimuli that trigger distressing memories and thoughts and thus have been avoided (i.e., IN VIVO EXPOSURE). The homework assignments and imaginal exposure are reviewed in session: Clients discuss their emotions, cognitions, and other responses to the activity, while the therapist uses nondirective statements to validate and normalize the clients' experiences and reactions. The exposure exercises are intended to teach clients that trauma memories are in fact not harmful and that they can cope with them; the in-session discussion seeks to help clients change their erroneous beliefs about the trauma and reevaluate their feelings about

it. Ultimately, this method aims to habituate clients to the traumatic event so that it no longer evokes the excessive anxiety, fear, and other distressing emotions that it previously did. [developed in the 1980s by U.S. psychologist Edna B. Foa (1937– ) and colleagues]

**promethazine** *n.* a PHENOTHIAZINE used for the treatment of nausea, motion sickness, and allergies and as a sedative. Its mechanism of action includes blockade of H<sub>1</sub> HISTAMINE receptors and of dopamine receptors in the MESOLIMBIC SYSTEM. U.S. trade name: **Phenergan**.

**promiscuity** *n.* transient, casual sexual relations with a variety of partners. In humans, this type of behavior is generally regarded unfavorably; however, it has been argued that there can be healthy promiscuity in the simple enjoyment of casual, consensual, nonexploitative relationships. Among nonhuman animals, bonobos (pygmy chimpanzees) engage in frequent sexual activity both between and within sexes in exchange for resources (e.g., food) or to calm tensions. In many species, females appear to display promiscuity to prevent CERTAINTY OF PATERNITY but often mate with the most dominant or most successful male at the time when conception is most likely. —**promiscuous** *adj.*

**prompt** *n.* see RETRIEVAL CUE.

**prompting** *n.* in psychotherapy, suggesting or hinting at topics by the therapist to encourage the client to discuss certain issues. Prompting may include reminding the client of previously discussed material, tying previously discussed topics together, or finishing a sentence or thought for the client to aid in his or her understanding of an issue.

**pronation** *n.* **1.** the act of turning the arm and hand so that the palm faces downward and the two long bones of the forearm are crossed, or the condition resulting from this action. **2.** the act of turning the foot so that the sole faces outward and the lateral (outer) margin is raised (as in walking on the inside of one's feet), or the condition resulting from this action. **3.** the state or condition of being prone (see POSTURE). Compare SUPINATION. —**pronate** *vb.*

**prone** *adj.* see POSTURE.

**pronoun** *n.* in linguistics, a word that substitutes for a noun, noun phrase, or larger nominal unit, usually to avoid repetition. English pronouns include the personal pronouns (*I, you, she*, etc.), the demonstrative pronouns (*this, that*, etc.), and the relative pronouns (*that, which*, etc.). See ANAPHORA; ANTECEDENT. —**pronominal** *adj.*

**pronoun reversal** a speech phenomenon observed in children with AUTISM, in which the child refers to himself or herself in the second or third person (e.g., *you, him, she*) while identifying others by first-person pronouns (e.g., *me*). Also called **pronominal reversal**.

**proof** *n.* **1.** the establishment of a proposition or theory as true, or the method by which it is so established. There is much debate as to whether propositions or theories can ever be truly proven. In logic and philosophy, even a valid argument can be untrue if its first premise is false. For example, it is a valid argument to say that *All trees are pines: I have a tree in my garden: Therefore my tree is a pine*. In empirical sciences such as psychology, both logical and methodological problems make it impossible to prove a theory or hypothesis true. Disciplines that rely on empirical science must settle for some type of PROBABILISM based on empirical support of its theories and hypotheses. See also FALSIFIABILITY. **2.** in mathematics and logic, a sequence of steps formally establishing the truth of a theorem or the validity

of a proposition. **3.** in law, evidence that establishes and supports the truth of claims made by either party in a dispute. Only evidence presented at trial can constitute proof; the TRIER OF FACT must then decide whether such evidence constitutes adequate proof. In criminal cases, the standard of proof required to obtain a conviction is proof BEYOND REASONABLE DOUBT.

**proofreader's illusion** a visual error in which a misspelling, omission, extra letter, transposition, or the like is overlooked, owing to TOP-DOWN PROCESSING in which the context and other cues outweigh the impact of the word or phrase as literally spelled or misspelled.

**proopiomelanocortin (POMC)** *n.* a protein, synthesized in the pituitary gland, that is the precursor of several hormones. It can be cleaved by enzymes at different positions to yield biologically active compounds, including BETA-ENDORPHIN, ALPHA-MELANOCYTE STIMULATING HORMONE, and CORTICOTROPIN.

**propaedeutic** *n.* **1.** introductory instruction provided by a teacher to a student before formal instruction of a full concept or idea begins. **2.** an introduction to any art or science.

**propaganda** *n.* a method of social control that attempts to strengthen or change the beliefs, attitudes, and actions of others by presenting highly biased information or sometimes DISINFORMATION. It usually involves an appeal to emotion that is designed to win support for an idea or course of action or to belittle or disparage the ideas or programs of others. See also CARD-STACKING; FEAR APPEAL; GLITTERING GENERALITIES; SUBLIMINAL PROPAGANDA.

**propaganda analysis** a study of the techniques, appeals, content, and effectiveness of propaganda.

**propanediol** *n.* any of a group of chemically related compounds derived from propyl alcohol and originally developed as antianxiety drugs. Their pharmacological actions include muscle relaxation, depression of the central nervous system, and a calming effect through interference with autonomic reactions. The prototype of the group is MEPROBAMATE. Due to their toxicity in overdose, propanediols have largely been supplanted as anxiolytics by benzodiazepines and other sedative-hypnotics; CARISOPRODOL, a precursor of meprobamate, is currently used as a muscle relaxant.

**propensity** *n.* a strong tendency toward a behavior or action.

**prophase** *n.* the first stage of cell division, during which chromosomes shorten and thicken, dividing along their length into chromatids, and the nuclear envelope dissolves. In MEIOSIS, homologous pairs of chromosomes associate to form bivalents (pairs).

**prophecy formula** see SPEARMAN–BROWN PROPHECY FORMULA.

**prophylactic maintenance** see MAINTENANCE THERAPY.

**prophylactic surgery** the removal of an organ prior to the expected onset of cancer in that organ, usually because the individual has a POSITIVE FAMILY HISTORY of the disease or is a CARRIER of a predisposing mutation. For example, women who carry mutations in genes *BRCA1* or *BRCA2* (see *BRCA1 AND BRCA2*) or *P53* are at greatly increased risk of breast and ovarian cancer and may consider prophylactic surgery. Prophylactic mastectomy is the surgical re-

removal of one or both breasts prior to a diagnosis of breast cancer. Prophylactic ovariectomy is the surgical removal of the ovaries prior to a diagnosis of ovarian cancer. Prophylactic thyroidectomy is the surgical removal of the thyroid gland prior to the onset of medullary thyroid cancer in individuals at increased risk for MEN2 (multiple endocrine neoplasia, Type 2), a hereditary cancer syndrome. The emotional impact of prophylactic surgery in such patients is under study.

**prophylaxis** *n.* the use of methods or procedures designed to avoid or prevent mental or physical disease or disorder. —**prophylactic** *adj.*, *n.*

**propinquity** *n.* the physical and sometimes psychological nearness of two or more people to each other, an element in the formation of close relationships. See also PROXEMICS.

**propinquity effect** the tendency of individuals to form close relationships with people they repeatedly encounter. That is, the more often one comes into contact with another person, the more likely it is that one will form a friendship or romantic relationship with that person. For example, next-door neighbors often are friends with one another, as are classmates and coworkers, respectively. The propinquity effect possibly is related to the MERE-EXPOSURE EFFECT. [first theorized in 1950 by U.S. psychologists Leon FESTINGER and Stanley SCHACHTER and Austrian-born U.S. sociologist Kurt Wolfgang Back (1920–1999), following a study of students living in the Westgate Apartments at the Massachusetts Institute of Technology]

**proportional** *adj.* having a constant ratio between quantities, such that the overall relationship does not change. For example, consider a researcher who is examining the differences between two treatments among males and females as follows: 10 males in Treatment A and 20 males in Treatment B; 20 females in Treatment A and 40 females in Treatment B. Although there are unequal numbers of people in each treatment condition, the ratio or proportion between them remains the same—twice as many females as males. In UNBALANCED DESIGNS, the presence or absence of such **proportional cell frequency** is critical to a researcher's choice of analytic strategy.

**proportional hazards model** see COX REGRESSION ANALYSIS.

**proportional sampling** a form of STRATIFIED SAMPLING in which one draws cases for study from certain groups (e.g., gender, race/ethnicity) in the proportions that are observed in the larger population. For example, if a university has 60% female students and 40% male students, a researcher would obtain a sample comprising the same percentages or proportions, such as 120 females and 80 males in a 200-student subset. Also called **proportionate sampling**.

**proportion of variance index** any of several measures describing the amount of variability in an outcome variable that is explained by the independent variables. In MULTIPLE REGRESSION, for example, the COEFFICIENT OF MULTIPLE DETERMINATION is a commonly used proportion of variance index.

**proposita** *n.* a female PROBAND. Compare PROPOSITUS.

**proposition** *n.* **1.** in philosophy, anything that can be asserted or denied and that is capable of being either true or false; that is, the content of a typical declarative sentence, such as *Grass is green* or *Lenin was a great man*. **2.** in linguistics,

a formal statement representing the underlying meaning of a sentence or sentence component, irrespective of its form. For example, the sentences *I scored the goal* and *The goal was scored by me* represent the same proposition, as would a translation of either sentence into a different language. —**propositional** *adj.*

**propositional analysis** the system of SYMBOLIC LOGIC that is concerned only with the logical relationships between propositions as wholes, and not with relationships between the elements within individual propositions. Also called **propositional calculus**. Compare PREDICATE ANALYSIS.

**propositional knowledge** the abstract representation of knowledge, words, or images. Propositions are the smallest units of meaningful thought, and knowledge is represented as a series of propositional statements or as a network of interconnected propositions.

**propositional network** a diagram in which the terms of a proposition and the relations between them are represented as nodes linked to form a network.

**propositus** *n.* a male PROBAND. Compare PROPOSITA.

**propoxyphene** *n.* a synthetic OPIOID ANALGESIC that has approximately half the pain-control efficacy of codeine. It was generally marketed in combination with a nonsteroidal anti-inflammatory agent, such as aspirin, for the management of moderate pain. In 2010, it was withdrawn from the U.S. market due to its risk of causing potentially fatal arrhythmia. Former U.S. trade names: **Darvocet** (in combination with ACETAMINOPHEN); **Darvon**.

**propranolol** *n.* a beta blocker used primarily to treat hypertension. In low doses, it is used as an adjunctive agent in the treatment of certain forms of social phobia, such as fear of public speaking or performance, predominantly due to its ability to control certain peripheral symptoms of anxiety, such as tremor and vocal quavering. Because it produces a nonspecific blockade of BETA-ADRENERGIC RECEPTORS, it should not be taken by individuals with asthma or reactive airway disease, due to its ability to constrict bronchial smooth musculature and thereby induce breathing difficulties. U.S. trade name: **Inderal**.

**proprieate striving** the final stage in the development of the PROPRIUM. According to Gordon W. ALLPORT, who originated the concept, proprieate striving emerges in adolescence with the search for identity and includes the experimentation common to adolescents before making long-range commitments. In contrast to childhood, adolescence is considered especially significant as the time when conscious intentions and future-oriented planning begin to motivate the personality.

**proprietary drug** any chemical used for medicinal purposes that is formulated or manufactured under a name that is protected from competition by TRADEMARK or patent. The ingredients, however, may be components of generic drugs that have the same or similar effects.

**propriety standards** the legal and ethical requirements of an evaluation research study. These standards include having formal or written agreements between parties in the study, protecting the rights of participants, avoiding conflicts of interest by both program evaluators and participants, conducting complete and fair program assessments, fully reporting all findings, and maintaining fiscal soundness. See also ACCURACY STANDARDS; FEASIBILITY STANDARDS; UTILITY STANDARDS.

**proprioception** *n.* the sense of body movement and position, resulting from stimulation of PROPRIOCEPTORS located in the muscles, tendons, and joints and of VESTIBULAR RECEPTORS in the labyrinth of the inner ear. Proprioception enables the body to determine its spatial orientation without visual clues and to maintain postural stability. Also called **proprioceptive sense**. —**proprioceptive** *adj.*

**proprioceptive stimulus** a stimulus that arises from within an organism based on stimulation from PROPRIOCEPTORS, the receptors that detect body position. Compare EXTEROCEPTIVE STIMULUS; INTEROCEPTIVE STIMULUS.

**proprioceptor** *n.* a receptor that is sensitive to body movement and position, including motion of the limbs. Examples are MUSCLE SPINDLES and GOLGI TENDON ORGANS. See PROPRIOCEPTION.

**proprium** *n.* a concept of the self—or that which is consistent, unique, and central in the individual—that was developed by Gordon W. ALLPORT. According to Allport, the *proprium* incorporates body sense, self-identity, self-esteem, self-extension, rational thinking, self-image, PROPRIATE STRIVING, and knowing.

**propulsive gait** see FESTINATING GAIT.

**prosencephalon** *n.* see FOREBRAIN.

**prosocial** *adj.* denoting or exhibiting behavior that benefits one or more other people, such as providing assistance to an older adult crossing the street. Compare ANTISOCIAL. See also ALTRUISM; HELPING.

**prosocial aggression** any act of instrumental AGGRESSION that has socially constructive and desirable consequences, such as intervening to prevent a theft or demonstrating against an unjust regime. Compare ANTISOCIAL AGGRESSION.

**prosodic** *adj.* see SUPRASEGMENTAL.

**prosody** *n.* a phonological feature of speech, such as stress, intonation, intensity, or duration, that pertains to a sequence of PHONEMES rather than to an individual SEGMENT. See PARALANGUAGE; SUPRASEGMENTAL.

**ProSom** *n.* a trade name for ESTAZOLAM.

**prosopagnosia** *n.* a form of VISUAL AGNOSIA in which the ability to perceive and recognize faces is impaired, whereas the ability to recognize other objects may be relatively unaffected. The term was originally limited to impairment following acute brain damage, but a congenital form of the disorder has since been recognized. Prosopagnosia can be distinguished from **prosopamnesia**, which is an abnormal difficulty in remembering faces, even though they are perceived normally: The condition may be congenital or acquired.

**prospective memory** remembering to do something in the future, such as taking one's medicine later. Prospective memory contrasts with **retrospective memory**, or remembering past events.

**prospective research** research that starts with the present and follows participants forward in time to examine trends, predictions, and outcomes. Examples include randomized experiments and LONGITUDINAL DESIGNS. Also called **prospective study**. Compare RETROSPECTIVE RESEARCH.

**prospective sampling** a sampling method in which cases are selected for inclusion in experiments or other re-

search on the basis of their exposure to a risk factor. Participants are then followed to see if the condition of interest develops. For example, young children who were exposed to lead in their drinking water and those who were not exposed to this risk factor could be included in a study and then followed through time to assess health problems that emerge when they are adolescents. Compare RETROSPECTIVE SAMPLING.

**prospective validity** see PREDICTIVE VALIDITY.

**prospect theory** a theory of decision making that attempts to explain how people's decisions are influenced by their attitudes toward risk, uncertainty, loss, and gain. In general, it asserts that people are influenced by a systematic inability to evaluate probabilities correctly and in most cases are motivated more strongly by the fear of loss than by the prospect of making the equivalent gain. See ANTICIPATORY REGRET; REGRET THEORY. See also MENTAL ACCOUNTING. [formulated by Daniel KAHNEMAN and Amos TVERSKY]

**prostaglandin (PG)** *n.* any of a group of chemically related substances that act as local hormones in animal tissue and cause a variety of physiological effects. There are several basic types, designated by capital letters with subscript numbers indicating the degree of saturation of fatty acid side chains (e.g., PGE<sub>2</sub>, PGH<sub>2</sub>). Among their many activities, they influence blood pressure, cause stimulation of smooth muscle, and promote inflammation.

**prostate** *n.* a gland in male mammals, walnut-sized in humans, that surrounds the urethra immediately beneath the urinary bladder. It secretes a thin, alkaline fluid that increases in volume during sexual stimulation and becomes part of SEMEN during ejaculation.

**prosthesis** *n.* (*pl.* **prostheses**) an artificial device that is attached to or implanted in the body to replace a missing body part or to improve a dysfunctional one. Prostheses include artificial limbs, artificial joints, and plastic heart valves. Recent work has produced neuroprosthetic devices that allow, for example, control of prosthetic limbs through voluntary neural impulses. Also called **prosthetic device**. —**prosthetic** *adj.*

**prosthetics** *n.* a medical specialization concerned with the design and construction of artificial body parts. Compare ORTHOTICS.

**Prostigmin** *n.* a trade name for NEOSTIGMINE.

**prostitution** *n.* a sex service that is based on the payment of money or the exchange of other property or valuables. Prostitution may involve heterosexual or same-sex services provided by male or female **prostitutes**. The service may be simple coitus, other common sexual acts (e.g., fellatio, cunnilingus, masturbation), or acts leading to gratification of PARAPHILLAS.

**prot-** *combining form* see PROTO-.

**protagonist** *n.* in PSYCHODRAMA, the person selected as the central character in the drama.

**protanomaly** *n.* a type of red color blindness in which the red-sensitive retinal cones do not function normally, although some red sensitivity may be present.

**protanopia** *n.* red-green color blindness in which the deficiency is due to the absence of the core PHOTOPIGMENT sensitive to red light, resulting in red stimuli appearing very dim and confusion between red and green (see DICHROMATISM). The condition may be unilateral (i.e., color vision may be normal in one eye). See also DEUTERANOPIA.

**protean career** a career pattern that is characterized by a high degree of mobility between organizations, functions, and settings and that is shaped primarily by the needs, goals, and choices of the individual rather than by any external structure. The protean career is often contrasted with the **organizational career**, in which an individual makes a long-term commitment to an organization in return for an implied promise of job security and steady advancement.

**protected class** under U.S. antidiscrimination law, groups that cannot be unfairly excluded from some process or opportunity (e.g., in job hiring, education, housing) on the basis of sex, age, familial status, race, ethnicity, religion, national origin, physical or mental handicap, or prior military service.

**protected relationship** any professional provider–client contact that is subject to ethical standards regarding confidentiality of records and other information provided by the client, information about sessions with the client, and the existence of the relationship itself.

**protected *t* test** see FISHER LEAST SIGNIFICANT DIFFERENCE TEST.

**protective factor** a clearly defined behavior or constitutional (e.g., genetic), psychological, environmental, or other characteristic that is associated with a decreased probability that a particular disease or disorder will develop in an individual, that reduces the severity of an existing pathological condition, or that mitigates the effects of stress generally. For example, exercising regularly can serve as a protective factor by decreasing the likelihood or severity of coronary heart disease, hypertension, and depression. Likewise, supportive social networks and positive coping skills are examples of protective factors that reduce the effects of stressful life events and enhance mental health. Compare RISK FACTOR.

**protective reflex** the reflex withdrawal of the body or a body part away from painful or annoying stimulation. Also called **protective response**.

**protein** *n.* a molecule that consists of a long-chain polymer of AMINO ACIDS. Proteins are involved in virtually every function performed by a cell; they are the principal building blocks of living organisms and, in the form of ENZYMES, the basic tools for construction, repair, and maintenance. Proteins play an essential role in human nutrition, including the provision of all of the essential amino acids that humans cannot produce themselves. PROTEIN DEFICIENCY leads to a variety of symptoms and conditions. Excess protein can cause overreaction of the immune system and liver dysfunction and is implicated in obesity. See also PEPTIDE.

**protein deficiency** lack of a normal quantity of proteins in the diet or body tissues. It may lead to fatigue, retarded growth, loss of muscle mass, hair loss, insulin resistance, and hormonal irregularities. It may occur as a result of a lack of carbohydrates or fats in the diet, a condition that causes the body to consume its own proteins as a source of energy. If this self-digestion process is not controlled, irreversible damage to vital organs results. See also KWASHIORKOR; MARASMUS.

**protein hormone** any of a class of substances secreted into the bloodstream that regulate processes in distant target organs and tissues and that consist of a long-chain polymer of AMINO ACIDS. Examples are PARATHYROID HORMONE, PROLACTIN, GROWTH HORMONE, and INSULIN.

**protein kinase** any of a class of enzymes that add one or more phosphate groups (PO<sub>4</sub>) to protein molecules.

**protein metabolism** all the biochemical reactions involved in the manufacture and breakdown of proteins. The body makes a large variety of complex proteins from AMINO ACIDS, including enzymes, antibodies, certain hormones (e.g., insulin), and structural proteins, such as keratin, collagen, and the actin and myosin molecules of muscle. Proteins are broken down into their constituent amino acids during the basic turnover of cell proteins as well as for the elimination of toxic peptides and abnormal proteins. In case of severe energy starvation, with depletion of the body's fat reserves, protein can be broken down to provide carbon to make glucose, but this impairs normal body functions.

**protensity** *n.* the temporal attribute of a mental process: temporality (i.e., duration spread) considered as an essential aspect of all conscious experience. [introduced by Immanuel KANT]

**Protestant work ethic** see WORK ETHIC.

**Proteus syndrome** a rare genetic disorder characterized by excessive and asymmetric growth of bones, skin, or organs. The overgrowth becomes evident in infants after about 6 months of age and progresses in severity with age. Neurological symptoms may be present, including intellectual disability, seizures, and vision loss. Proteus syndrome is caused by a random mutation in the *AKT1* gene and is not inherited. Also called **Wiedemann syndrome**. See ELEPHANT MAN'S DISEASE. [after the Greek god of the sea, **Proteus**, who could change his shape at will]

**prothetic** *adj.* describing a sensory dimension along which stimuli vary in degrees of magnitude or quantity but not in quality. Compare METATHETIC.

**proto- (prot-)** *combining form* **1.** ancestral or original (e.g., PROTOLANGUAGE). **2.** first (e.g., PROTANOPIA).

**protocol** *n.* **1.** the original notes of a study or experiment recorded during or immediately after a session or trial, particularly as recorded from participant's verbalizations during the process. See also RESEARCH PROTOCOL; VERBAL PROTOCOL. **2.** a case history and WORKUP. **3.** a treatment plan.

**protocol analysis** a methodology in which people are encouraged to think out loud as they perform some task. Transcripts of these sessions (THINK-ALoud PROTOCOLS) are then analyzed to investigate the cognitive processes underlying performance of the task. Also called **verbal protocol analysis**.

**protolanguage** *n.* in GENETIC LINGUISTICS, a posited common ancestor of the members of a language family. Most protolanguages have been partially reconstructed through comparison among different members of a language family. The most celebrated protolanguage is Proto-Indo-European, the unrecorded prehistoric language that is presumed to be the ancestor of all Indo-European languages. See SOUND CHANGE.

**protopathic** *adj.* denoting or relating to peripheral nerve fibers responsive to gross sensory stimulation, particularly pain, temperature extremes, and strong touch. Compare EPICRITIC.

**protoplasm** *n.* all the living contents of a cell, consisting of the CYTOPLASM and NUCLEOPLASM. —**protoplasmic** *adj.*

**prototypal approach to classification** the process

of classifying abnormal behavior on the assumption that there are combinations of characteristics (prototypes of behavior disorders) that tend to occur together regularly.

**prototype** *n.* **1.** in CONCEPT FORMATION, the best or average exemplar of a category. For example, the prototypical bird is some kind of mental average of all the different kinds of birds of which a person has knowledge or with which a person has had experience. **2.** more generally, an object, event, or person that is held to be typical of a category and comes to represent or stand for that category. See PROTOTYPE MODEL. **3.** an early model of something that represents or demonstrates its final form. —**prototypical**, **prototypical**, or **prototypic** *adj.*

**prototype model** a theory of CATEGORIZATION proposing that people form an average of the members of a category and then use the average as a PROTOTYPE for making judgments about category membership.

**prototypicality** *n.* the degree to which something is typical or exemplary of the category to which it belongs.

**protriptyline** *n.* see TRICYCLIC ANTIDEPRESSANT.

**Proust phenomenon** the sudden, involuntary evocation of an AUTOBIOGRAPHICAL MEMORY, including a range of related sensory and emotional expressions. The term is named for French writer Marcel Proust (1871–1922), who described, in the first section of his multivolume novel *A la recherche du temps perdu* (*In Search of Lost Time*), how the experience of eating a madeleine (a small, shell-shaped sponge cake) transported him in memory back to childhood. Also called **Proustian memory**. See INVOLUNTARY RETRIEVAL; RECOLLECTION; REDINTEGRATION.

**proverb test** a verbal test in which the participant attempts to explain the meaning of proverbs. The test is used most often to measure intelligence but has also been used to measure WISDOM.

**provider** *n.* a professional (e.g., physician, psychologist) or facility (e.g., hospital, skilled nursing facility) that provides health care services to patients. See PRIMARY CARE PROVIDER. See also PPO; PREFERRED PROVIDER ARRANGEMENT.

**Provigil** *n.* a trade name for MODAFINIL.

**provocative testing** any type of testing in which symptoms of a condition are intentionally caused or reproduced in a patient or other person presenting for evaluation. This can be done to test the effectiveness of treatments for the condition, to rule in or rule out the possibility of a similar diagnosis, or in the case of PSYCHOGENIC DISORDERS, to test the veracity of the condition. For example, provocative testing has been used somewhat controversially in distinguishing NONEPILEPTIC SEIZURES from neurologically based epileptic seizures.

**provocative victim** a target of bullying who is likely to be aggressive himself or herself and to respond aggressively to bullying behavior. [first described in 1973 by Swedish psychologist Dan Olweus (1931– )]

**proxemics** *n.* the study of interpersonal spatial behavior. Proxemics is concerned with TERRITORIALITY, INTERPERSONAL DISTANCE, spatial arrangements, CROWDING, and other aspects of the physical environment that affect behavior.

**proximal** *adj.* **1.** situated near or directed toward the trunk or center of an organism. **2.** near or mostly closely

related to the point of reference or origin. Compare DISTAL. —**proximally** *adv.*

**proximal response** a response that occurs within an organism (e.g., a glandular or muscular response). Compare DISTAL RESPONSE.

**proximal stimulus** the physical energy from a stimulus as it directly stimulates a sense organ or receptor, in contrast to the DISTAL STIMULUS in the actual environment. In reading, for example, the distal stimulus is the printed page of a book, whereas the proximal stimulus is the light energy reflected by the page that stimulates the photoreceptors of the retina.

**proximate cause** the most direct or immediate cause of an event. In a CAUSAL CHAIN, it is the one that directly produces the effect. For example, the proximate cause of Smith's aggression may be an insult, but the REMOTE CAUSE may be Smith's early childhood experiences. In law, proximate cause is important in liability cases where it must be determined whether the actions of the defendant are sufficiently related to the outcome to be considered causal, or if the actions set in motion a chain of events that led to an outcome that could have been reasonably foreseen.

**proximate explanation** an explanation for behavior in terms of physiological mechanisms or developmental experiences. Compare ULTIMATE EXPLANATION.

**proximity** *n.* one of the GESTALT PRINCIPLES OF ORGANIZATION. It states that people tend to organize objects close to each other into a perceptual group and interpret them as a single entity. Also called **law** (or **principle**) of **proximity**.

**proximity compatibility** in ergonomics, a design principle stating that a control should be placed next to or close to the area of the display that is activated by the control. See also DISPLAY–CONTROL COMPATIBILITY.

**proximodistal** *adj.* from the central to the peripheral. The term typically is used in the context of maturation to refer to the tendency to acquire motor skills from the center outward, as when children learn to move their heads, trunks, arms, and legs before learning to move their hands and feet. Compare CEPHALOCAUDAL.

**proxy variable** a variable, *b*, used in place of another, *a*, when *b* and *a* are substantially correlated but scores are available only on variable *b*, often because of the difficulty or costs involved in collecting data for variable *a*. In other words, *b* is a substituted measure of *a*. For example, rather than reporting the precise income levels of their parents or guardians, survey respondents instead may be asked to indicate the highest level of education of each parent or guardian; in this case, education is a proxy for income. Also called **surrogate variable**.

**Prozac** *n.* a trade name for FLUOXETINE.

**PRP** abbreviation for PSYCHOLOGICAL REFRACTORY PERIOD.

**PRS** abbreviation for PERCEPTUAL REPRESENTATION SYSTEM.

**prudence** *n.* farsighted and deliberate concern for the consequences of one's actions and decisions. It is a form of practical reasoning and self-management that resists the impulse to satisfy short-term pleasures at the expense of long-term goals. —**prudent** *adj.*

**prudery** *n.* the quality of being excessively modest or priggish, particularly in having a negative view of sexual matters. —**prude** *n.* —**prudish** *adj.*

**pruning** *n.* during various phases of brain development

through the onset of puberty, the process in which excess or redundant neurons and synaptic connections are eliminated to enable more efficient neural processing. See SYNAPTIC PRUNING.

**prurient interest** in obscenity law, a morbid, degrading, or excessive interest in sexual matters. Material is judged to be obscene only if it is held to appeal predominantly to a prurient rather than a nonprurient interest in sex.

**pruritus** *n.* itching that may result from physiological or psychological conditions. See also PSYCHOGENIC PRURITUS.—**pruritic** *adj.*

**PSE 1.** abbreviation for POINT OF SUBJECTIVE EQUALITY. **2.** abbreviation for PRESENT STATE EXAMINATION.

**pseudesthesia** *n.* see PSEUDOESTHESIA.

**pseudo-** (**pseud-**) *combining form* false or spurious.

**pseudoachondroplasia** *n.* a form of short-limb autosomal dominant dwarfism that is usually diagnosed at 2 to 3 years of age. Individuals have normal head size and facial features, short arms and legs, a waddling walk, and early-onset osteoarthritis. Intelligence is not affected. It was once believed to be related to ACHONDROPLASIA, but without the characteristically enlarged head size seen in that disorder. Pseudoachondroplasia is now considered a separate disorder. Also called **pseudoachondroplastic spondyloepiphyseal dysplasia**.

**pseudoangina** *n.* **1.** chest pain that resembles the pain (angina pectoris) of a heart attack but for which there is no clinical evidence of heart disease. **2.** chest pain that resembles angina pectoris but originates from damage to the SPINAL ROOTS in the neck (cervical) region. Compression of the root of the seventh cervical nerve by a prolapsed intervertebral disk (see SLIPPED DISK) is commonly identified as the cause. Also called **cervical angina**. See NONCARDIAC CHEST PAIN.

**pseudoasthma** *n.* a physical condition with symptoms and findings that suggest asthma, although no organic basis can be found. Differences between pseudoasthma and true asthma are detected during physical examination. For example, the patient generally has difficulty breathing in rather than breathing out, the respiratory attack is resolved quickly rather than gradually, and the severity of the attack decreases in the presence of distraction rather than remaining constant.

**pseudobulbar affect (PBA)** a neurological disorder characterized by episodes of extreme emotional lability, particularly uncontrolled crying or laughter, that occurs in the absence of, or out of proportion to, a precipitating event. Pseudobulbar affect often accompanies other neurological disorders, such as Alzheimer's disease, Parkinson's disease, multiple sclerosis, amyotrophic lateral sclerosis, and stroke or other brain trauma. When manifested as excessive crying, it is often misdiagnosed and treated as depression.

**pseudocholinesterase (PChE)** *n.* a synonym of butyrylcholinesterase. See CHOLINESTERASE.

**pseudochromesthesia** *n.* see CHROMESTHESIA.

**pseudocommunication** *n.* distorted attempts at communication or vestiges of communication in the form of fragments of words, apparently meaningless sounds, and unfathomable gestures. The condition is sometimes observed in individuals with different types of schizophrenia.

**pseudocommunity** *n.* a group of real or imagined persons believed, in a persecutory delusion, to be organized for the purpose of conspiring against, threatening, harassing, or otherwise negatively focusing upon one. Also called **paranoid pseudocommunity**. [first described by 20th-century U.S. psychiatrist and clinical psychologist Norman A. Cameron]

**pseudoconditioning** *n.* in circumstances of CLASSICAL CONDITIONING, elicitation of a response by a previously neutral stimulus when it is presented following a series of occurrences of a conditioned stimulus. For example, after flinching in response to each of several presentations of electric shock, a person is likely to flinch if a loud tone is then presented.

**pseudoconversation** *n.* see COLLECTIVE MONOLOGUE.

**pseudoconvulsion** *n.* an older name for a type of NON-EPILEPTIC SEIZURE in which the person collapses and experiences muscular contractions, although other signs (e.g., pupillary signs, loss of consciousness, amnesia) are not observed.

**pseudocyesis** *n.* a condition in which a woman shows many or all of the usual signs of pregnancy when conception has not taken place. In some cases, the condition is psychogenic, whereas in others it is due to a medical condition (e.g., a tumor, an endocrine disorder). Also called **false pregnancy**; **pseudopregnancy**.

**pseudodementia** *n.* **1.** deterioration or impairment of cognitive functions in the absence of neurological disorder or disease. The condition may occur, reversibly, in a MAJOR DEPRESSIVE EPISODE—particularly among older adults, in which case the preferred term is **dementia syndrome of depression**—or as a psychological symptom of FACTITIOUS DISORDER. It may also occur as a result of a vitamin B deficiency or from delirium. **2.** see GANSER SYNDROME.

**pseudoephedrine (pseudephedrine)** *n.* an alkaloid that is an active constituent of EPHEDRA and an ingredient in over-the-counter decongestants. Because it can be used in the manufacture of METHAMPHETAMINE, its sale is subject to legal restrictions and storage and record-keeping requirements.

**pseudoepilepsy** *n.* see NONEPILEPTIC SEIZURE.

**pseudoesthesia** *n.* an illusory sensation, such as a feeling of irritation in a limb that has been amputated. Also called **pseudesthesia**. See PHANTOM LIMB.

**pseudoforgiveness** *n.* the external expression of forgiveness for an offender while still internally harboring anger, a desire for retribution, or other negative feelings toward the offender.

**pseudogroup** *n.* a group of participants in a research procedure who are led to believe that they are working on tasks together, although in fact they are working individually. This procedure is used to study the psychological effect of group membership.

**pseudohallucination** *n.* a vivid, nonpsychotic hallucination, usually visual, that the individual recognizes as hallucinatory.

**pseudohermaphroditism** *n.* a congenital abnormality in which one or more contradictions exist in the morphological criteria of sex characteristics. In female pseudohermaphroditism, the individual is a genetic and gonadal female with partial masculinization, such as an enlarged clitoris resembling a penis and labia majora re-

sembling a scrotum. In male pseudohermaphroditism, the individual is a genetic and gonadal male with incomplete masculinization, including a small penis, perineal HYPOSPADIAS, and a scrotum that lacks testes. —**pseudohermaphrodite** *n.*

**pseudohydrocephalus** *n.* see SILVER–RUSSELL SYNDROME.

**pseudohypertrophic muscular dystrophy** see MUSCULAR DYSTROPHY.

**pseudohypoparathyroidism** *n.* a condition that resembles hypoparathyroidism (deficiency of PARATHYROID HORMONE) but fails to respond to parathyroid hormone treatment. Patients have a round face and thick-set figure and seem to have impaired senses of smell and taste. In most cases, they have mild to moderate intellectual disability. The disease is believed to be due to a genetic defect that blocks normal response to parathyroid hormone by receptor tissues. See also ALBRIGHT'S HEREDITARY OSTEODYSTROPHY.

**pseudoidentification** *n.* a DEFENSE MECHANISM in which individuals adopt or identify with the opinions, values, or orientations of others in order to protect themselves against attack or criticism.

**pseudoinomnia** *n.* INSOMNIA reported by an individual who actually sleeps an adequate number of hours. The reason for reporting the complaint is often obscure and may involve a subtle misperception of sleep or dreaming of a sleepless night; pseudoinomnia may also be a symptom of anxiety or depression.

**pseudoisochromatic charts** a set of color plates used for testing color vision. See HARDY–RAND–RITTLER PSEUDOISCHROMATIC PLATES; ISHIHARA TEST FOR COLOR BLINDNESS.

**pseudologia fantastica** a clinical syndrome characterized by elaborate fabrications, which are usually concocted to impress others, to get out of an awkward situation, or to give the individual an ego boost. Unlike the fictions of CONFABULATION, these fantasies are believed only momentarily and are dropped as soon as they are contradicted by evidence. Typical examples are the tall tales told by people with antisocial personality disorder, although the syndrome is also found among malingerers and individuals with factitious disorders, neuroses, and psychoses. See also PATHOLOGICAL LYING.

**pseudomemory** *n.* a fake memory, such as a spurious recollection of events that never took place, as opposed to a memory that is merely inaccurate. Pseudomemory is a cause of particular concern when using hypnosis to help eyewitnesses retrieve memories (see HYPERMNESIA). It was formerly called **pseudomnesia**. See also CONFABULATION; FALSE MEMORY; RECOVERED MEMORY.

**pseudomutuality** *n.* a family relationship that has a superficial appearance of mutual openness and understanding although in fact the relationship is rigid and depersonalizing. Family theories of schizophrenia and other forms of major psychopathology have identified pseudomutuality as a critical etiological factor.

**pseudoneurological** *adj.* suggesting a neurological condition. The term is generally used in reference to SOMATIZATION DISORDER: According to *DSM–IV–TR*, at least one pseudoneurological symptom must be present in order to diagnose this disorder.

**pseudoneurotic schizophrenia** an outdated term describing a disorder characterized by all-pervasive anxiety and a wide variety of neurotic symptoms (persistent and irrational fears, obsessive thoughts, compulsive acts, dissociative states), with underlying psychotic tendencies (delusions, hallucinations, disorganized speech, thought, or behavior) that at times emerge very briefly, typically in response to stress (see MICROPSYCHOSIS). Pseudoneurotic schizophrenia is primarily considered to be a personality disorder rather than a type of schizophrenia, and individuals exhibiting such symptoms tend to be diagnosed with SCHIZOTYPAL PERSONALITY DISORDER or BORDERLINE PERSONALITY DISORDER. [described in 1949 by German-born U.S. psychiatrist Paul H. Hoch (1902–1964) and psychiatrist Phillip Polatin (1905–1980) and used in clinical practice and research for the next 25 years]

**pseudomania** *n.* an abnormal urge to lie or to falsify information.

**pseudoparalysis** *n.* loss of limb movement or limb power due to pain, with no identifiable structural or functional etiology within the nervous system.

**pseudoparkinsonism** *n.* see PARKINSONISM.

**pseudopersonality** *n.* a fictitious persona contrived by an individual in an effort to conceal facts about his or her true self from others.

**pseudophone** *n.* an instrument used in studying the localization of sound. It diverts to the left ear those sounds that would normally enter the right ear, and vice versa. [invented by Paul Thomas YOUNG]

**pseudoprecocious puberty** see PRECOCIOUS PUBERTY.

**pseudopregnancy** *n.* see PSEUDOCYESIS.

**pseudoprodigy** *n.* an individual who develops an exceptionally high degree of skill or knowledge, usually at an early age and primarily as a result of overtraining by overzealous parents or teachers. Pseudoprogies typically burn out at an early age.

**pseudopsychology** *n.* an approach to understanding or analyzing the mind or behavior that uses unscientific or fraudulent methods. Examples include PALMISTRY, PHRENOLOGY, and PHYSIOGNOMY. See PSEUDOSCIENCE. See also PARAPSYCHOLOGY. —**pseudopsychological** *adj.*

**pseudopsychopathic schizophrenia** a disorder in which psychotic tendencies characteristic of schizophrenia are masked or overlaid by antisocial tendencies, such as pathological lying, sexual deviations, and violent or other uninhibited behavior. Pseudopsychopathic schizophrenia is primarily considered to be a personality disorder rather than a type of schizophrenia; individuals exhibiting such symptoms tend to be diagnosed with SCHIZOTYPAL PERSONALITY DISORDER or BORDERLINE PERSONALITY DISORDER.

**pseudorandom** *adj.* describing a process that is close to being RANDOM but is not perfectly so. For example, so-called RANDOM NUMBER GENERATORS are often described as pseudorandom because their algorithms do not achieve the ideal of producing a flawlessly random process. Also called **quasirandom**.

**pseudoretardation** *n.* slow intellectual development, usually consistent with mild intellectual disability, due to adverse cultural or psychological conditions rather than congenital factors. Among these conditions are maternal deprivation, intellectual impoverishment, severe emotional disturbance, and perceptual deficits. The term may be a



misnomer as it can be applied to individuals whose performance is consistent with intellectual disability that may not be alleviated by educational intervention. Also called **psychosocial mental retardation**; **psychosocial mental developmental delay**.

**pseudoscience** *n.* a system of theories and methods that has some resemblance to a genuine science but that cannot be considered such. Examples include ASTROLOGY, NUMEROLOGY, and esoteric MAGIC. Various criteria for distinguishing pseudosciences from true sciences have been proposed, one of the most influential being that of FALSIFIABILITY. On this basis, certain approaches to psychology and psychoanalysis have sometimes been criticized as pseudoscientific, as they involve theories or other constructs that cannot be directly or definitively tested by observation (see PREDICTION; RISKY PREDICTION). See also PARAPSYCHOLOGY. —**pseudoscientific** *adj.*

**pseudoscope** *n.* an optical instrument designed to create visual illusions by transposing images between the left and right eyes and inverting distance relations so that solid objects appear hollow and hollow objects solid.

**pseudoseizure** *n.* see NONEPILEPTIC SEIZURE.

**pseudosenility** *n.* see REVERSIBLE DEMENTIA.

**pseudoword** *n.* a pronounceable nonword, such as *flirp*. Unlike NONSENSE SYLLABLES and TRIGRAMS, which are restricted to three letters and not necessarily pronounceable, pseudowords may be any length and must conform to orthographic and phonological conventions. Pseudowords are used both experimentally to study learning of items that do not already have meaning or associations with other information in memory and clinically to identify children with reading disabilities.

**PSG** abbreviation for PHRASE-STRUCTURE GRAMMAR.

**psi** *n.* **1.** the Greek letter  $\psi$ , often used to symbolize psychology. **2.** the phenomena or alleged phenomena studied in PARAPSYCHOLOGY, including EXTRASENSORY PERCEPTION, PRECOGNITION, and PSYCHOKINESIS.

**PSI 1.** abbreviation for PARENTING STRESS INDEX. **2.** abbreviation for PSYCHOLOGICAL SCREENING INVENTORY.

**Psi Beta** the national honor society in psychology for 2-year colleges in the United States, founded in 1981 and affiliated with the AMERICAN PSYCHOLOGICAL ASSOCIATION in 1988. It promotes professional development through recognition of scholarship, leadership, research, and community service. Psi Beta is the sister honor society to PSI CHI.

**Psi Chi** the international honor society in psychology for senior colleges and universities, founded in the United States in 1929 to encourage, stimulate, and maintain excellence in scholarship and to advance the science of psychology. It consists of a federation of over 1,000 chapters and is affiliated with the AMERICAN PSYCHOLOGICAL ASSOCIATION and the ASSOCIATION FOR PSYCHOLOGICAL SCIENCE. It is the sister honor society to PSI BETA.

**psi-hitting** *n.* in parapsychology experiments, performance on a test that is significantly above chance expectations. Compare PSI-MISSING.

**psilocin** *n.* an indolealkylamine HALLUCINOGEN that is the principal psychoactive compound in “magic mushrooms” of the genus *Psilocybe*, which were used by the Aztecs for religious and ceremonial purposes. **Psilocybin**, first isolated in 1958, differs from psilocin only in having an additional

phosphate group; it is rapidly metabolized in the body and converted to psilocin. Like other indolealkylamine hallucinogens (e.g., LSD, DMT), psilocin is active at various SEROTONIN RECEPTORS: Agonism at 5-HT<sub>1A</sub> and 5-HT<sub>2A</sub> receptors in the cerebral cortex of the brain appears to be responsible for the psychoactive effects of these drugs.

**psi-missing** *n.* in parapsychology experiments, performance on a test that is significantly below chance expectations. Compare PSI-HITTING. See also CONSISTENT MISSING.

**psittacism** *n.* the mechanical repetition of words, phrases, or ideas with no understanding of their meaning. [from Latin *psittacus*, “parrot”]

**PSP** abbreviation for POSTSYNAPTIC POTENTIAL.

**PSST** abbreviation for PROBLEM-SOLVING SKILLS TRAINING.

**PST 1.** abbreviation for PROBLEM-SOLVING THERAPY. **2.** abbreviation for PSYCHOLOGICAL SKILLS TRAINING.

**psychache** *n.* intense psychological pain that is sometimes thought to be a risk factor for suicide. [coined by Edwin S. SHNEIDMAN]

**psychalgia** *n.* **1.** an obsolete term denoting pain or discomfort, usually in the head, that accompanies mental activity of a psychiatric nature (e.g., obsessions, hallucinations) and that is identified by the patient as emotional in origin. **2.** a nonspecific psychogenic PAIN DISORDER. Also called **psychalgia**. See also ALGOPSYCHALIA; PSYCHIC PAIN. [coined in 1884 by Scottish psychiatrist Thomas Smith Clouston (1840–1915)]

**psychasthenia** *n.* an archaic term for any of the ANXIETY DISORDERS. It is still in use as the name of one of the primary scales of the MINNESOTA MULTIPHASIC PERSONALITY INVENTORY.

**psyche** *n.* in psychology, the mind in its totality, as distinguished from the physical organism. The term, which historically had come to refer to the soul or the very essence of life, derives from the character of Psyche in Greek mythology, a beautiful princess who, at the behest of her divine lover, Eros, son of Aphrodite, is made immortal by Zeus.

**psychedelic drug** see HALLUCINOGEN; PHANEROTHYME.

**psychedelic therapy** the use of HALLUCINOGENS (or psychedelic drugs) in the treatment of some types of mental or physical illness. LSD was used in the 1950s and 1960s in combination with psychotherapy to assist patients in enhancing their awareness of cognitive and psychological processes; it was also used in the management of a number of significant conditions, such as schizophrenia and alcoholism. MDMA was similarly used in the 1980s. However, various studies revealed no lasting benefit; indeed, some patients claimed to have been harmed by such treatments. These findings, coupled with reclassification of these drugs as illegal, ended for a time the use of such agents in therapy. More recently, MDMA has been studied for a potential role in the treatment of posttraumatic stress disorder and IBOGAINE for the treatment of substance dependence and withdrawal symptoms.

**psychiatric classification** the grouping of mental disorders and other psychological problems into diagnostic categories, as in the *Diagnostic and Statistical Manual of Mental Disorders* (see DSM–IV–TR; DSM–5) and in the INTERNATIONAL CLASSIFICATION OF DISEASES. Classification serves the purpose of organizing symptomatic states and abnormal functioning to enhance the treatment of disorders and

research aimed at understanding causes. Also called **psychiatric nosology**.

**psychiatric diagnosis** the diagnosis of mental disorders based on current systems of PSYCHIATRIC CLASSIFICATION. See also CLINICAL DIAGNOSIS.

**psychiatric disability** chronic loss or impairment of function due to a mental disorder, resulting in severe difficulties in meeting the demands of life.

**psychiatric disorder** see MENTAL DISORDER.

**psychiatric evaluation** **1.** an assessment, based on present problems and symptoms, of an individual's biological, mental, and social functioning, which may or may not result in a diagnosis of a mental illness. See PSYCHOLOGICAL EXAMINATION. **2.** an assessment to determine legal competency. See FORENSIC ASSESSMENT. **3.** an evaluation to determine the need for involuntary commitment, as in the case of an individual threatening suicide.

**psychiatric hospital** a public or private institution providing inpatient treatment to individuals with mental disorders. Also called **mental hospital**. See also PRIVATE MENTAL HOSPITAL; PSYCHIATRIC UNIT; PUBLIC MENTAL HOSPITAL.

**psychiatric illness** see MENTAL DISORDER.

**psychiatric nosology** see PSYCHIATRIC CLASSIFICATION.

**psychiatric nursing** a specialty within the field of NURSING that provides holistic care to individuals with mental disorders or behavioral problems so as to promote their physical and psychosocial well-being. It emphasizes the use of interpersonal relationships as a therapeutic agent and considers the environmental factors that influence mental health. Thus, **psychiatric nurses** not only provide physical care but also socialize and communicate with their patients to create a safe, comfortable environment that promotes positive change. Their specific responsibilities often include assisting patients with ACTIVITIES OF DAILY LIVING, administering psychotropic medication and managing side effects, assisting with crisis management, observing patients to evaluate their progress, offering guidance and other forms of interpersonal support to patients, participating in recreational activities with patients, educating patients and their families about mental health issues and lifestyle choices, and conducting group therapy. Registered nurses wishing to become psychiatric nurses complete additional training in pharmacology and the behavioral and social sciences. They practice in a variety of settings—including general and psychiatric hospitals, assisted living facilities, long-term care centers, physicians' offices, correctional facilities, community mental health centers, rehabilitation centers, and private homes (see HOME CARE)—in conjunction with psychiatrists, psychologists, social workers, and other mental health professionals. Psychiatric nurses are distinct from **psychiatric nurse practitioners**, who have obtained master's or doctoral degrees and more advanced training to practice privately and perform additional assessment, diagnostic, and therapeutic functions, including conducting individual psychotherapy and prescribing medication. Also called **mental health nursing**.

**psychiatric pharmacogenomics** see PHARMACOGENOMICS.

**psychiatric rehabilitation** see PSYCHOSOCIAL REHABILITATION.

**psychiatric unit** a unit of a general hospital organized for inpatient treatment of individuals with acute psychiatric conditions. Such units usually provide emergency coverage and admission; treatment with psychotropic drugs or electroconvulsive therapy; group therapy; psychological examinations; and adjunctive modalities, such as social work services, occupational therapy, art therapy, movement therapy, music therapy, and discussion groups.

**psychiatrist** *n.* a physician who specializes in the diagnosis, treatment, prevention, and study of mental, behavioral, and personality disorders. In the United States, education for this profession consists of 4 years of premedical training in college; a 4-year course in medical school, the final 2 years of which are spent in clerkships studying with physicians in at least five specialty areas; and a 4-year residency in a hospital or agency approved by the American Medical Association. The 1st year of the residency is spent as a hospital intern, and the final 3 in psychiatric residency, learning diagnosis and the use of psychiatric medications and other treatment modes. After completing residency, most psychiatrists take a voluntary examination for certification by the American Board of Psychiatry and Neurology.

**psychiatry** *n.* the medical specialty concerned with the study, diagnosis, treatment, and prevention of mental, behavioral, and personality disorders. As a medical specialty, psychiatry is based on the premise that biological causes are at the root of mental and emotional problems, although some psychiatrists do not adhere exclusively to the biological model and additionally treat problems as social and behavioral ills. Training for psychiatry includes the study of psychopathology, biochemistry, genetics, psychopharmacology, neurology, neuropathology, psychology, psychoanalysis, social science, and community mental health, as well as the many theories and approaches advanced in the field itself. —**psychiatric** *adj.*

**psychic** **1.** *adj.* denoting phenomena associated with the mind. Ivan PAVLOV referred to conditioned responses as “psychic reflexes” because the idea of the physical stimulus evoked the reflexive response. **2.** *adj.* denoting a class of phenomena, such as TELEPATHY and CLAIRVOYANCE, that appear to defy scientific explanation. The term is also applied to any putative powers, forces, or faculties associated with such phenomena. See PSI. **3.** *n.* a MEDIUM, SENSITIVE, or other person with alleged paranormal abilities.

**psychic apparatus** in classical psychoanalytic theory, mental structures and mechanisms. Sigmund FREUD initially (1900) divided these into unconscious, preconscious, and conscious areas or systems and later (1923) into the ID, EGO, and SUPEREGO: The id is described as unconscious, and the ego and superego as partly conscious, partly preconscious, and partly unconscious. Also called **mental apparatus**. See also STRUCTURAL MODEL; TOPOGRAPHIC MODEL.

**psychic blindness** see FUNCTIONAL BLINDNESS.

**psychic conflict** see INTRAPSYCHIC CONFLICT.

**psychic determinism** the position, associated particularly with Sigmund FREUD, that mental (psychic) events do not occur by chance but always have an underlying cause that can be uncovered by analysis. See DETERMINISM. See also FREUDIAN SLIP.

**psychic energizer** a drug that has an antidepressant effect. The name, now rarely used, was introduced in the late

1950s by U.S. psychiatrist Nathan S. Kline (1916–1983) to identify MONOAMINE OXIDASE INHIBITORS derived from iproniazid, which had been developed for control of tuberculosis. Iproniazid was discontinued as a tuberculosis drug because of its powerful effects on the central nervous system.

**psychic energy** in classical psychoanalytic theory, the dynamic force behind all mental processes. According to Sigmund FREUD, the basic sources of this energy are the INSTINCTS or drives that are located in the ID and seek immediate gratification according to the PLEASURE PRINCIPLE. Carl JUNG also believed that there is a reservoir of psychic energy, but he objected to Freud's emphasis on the pleasurable gratification of biological instincts and emphasized the means by which this energy is channeled into the development of the personality and the expression of cultural and spiritual values. Also called **mental energy**. See also LI-BIDO.

**psychic healing** the treatment of physical or mental illness by parapsychological or spiritualistic means. See also CRYSTAL HEALING; FAITH HEALING.

**psychic link** in parapsychology and spiritualism, a direct connection between one mind and another, not mediated by any sensory channel. See AGENT; PERCIPIENT; TELEPATHY.

**psychic numbing** a posttraumatic symptom pattern in which the individual feels incapable of emotional expression, love, or closeness to others. See ALEXITHYmia.

**psychic pain** intolerable pain caused by intense psychological suffering (rather than physical dysfunction). At its extreme, prolonged psychic pain can lead to suicide attempts. See also ALGOPSYCHALIA; PSYCHALGIA.

**psychic paralysis of visual ideation** a cluster of visual deficits comprising difficulty in spatial localization, difficulty in executing SACCADIC or tracking a moving object, and a tendency for visual perception to be dominated at any one time by an object. This symptom is associated with BÁLINT'S SYNDROME, but there is evidence to suggest it can occur in isolation.

**psychic reality** the internal reality of fantasies, wishes, fears, dreams, memories, and anticipations, as distinguished from the external reality of actual events and experiences.

**psychic seizure** a type of COMPLEX PARTIAL SEIZURE marked by psychological disturbances, such as illusions, hallucinations, affective experiences, or cognitive alterations (e.g., déjà vu).

**psychic suicide** a purported form of self-destruction in which the individual decides to die and actually does so without resorting to a physical agency. See also VODOO DEATH.

**psychic tension** emotional strain experienced in emergencies or other situations that generate inner conflict or anxiety.

**psychic trauma** an experience that inflicts damage on the psyche, often of a lasting nature. Examples are sexual assault and child abuse.

**psyching out** the use of various techniques to create fear, apprehension, and doubt in another person. This colloquialism probably originated in sport with reference to the psyching out of a competitor but has become generalized to numerous other situations.

**psyching up** undertaking a series of activities for the purpose of getting into an IDEAL PERFORMANCE STATE for an event, such as a competition or an examination.

**psychism** *n.* see PANPSYCHISM.

**psycho-** combining form mind.

**psychoacoustics** *n.* the scientific study of the physical effects of sound on biological systems, including the sensations produced by sounds and problems of communication. A branch of PSYCHOPHYSICS, this interdisciplinary study includes physiology, physics, audiology, psychology, music, engineering, and otolaryngology.

**psychoactive drug** any drug that has significant effects on psychological processes, such as thinking, perception, and emotion. Psychoactive drugs include those deliberately taken to produce an altered state of consciousness (e.g., HALLUCINOGENS, OPIOIDS, INHALANTS, CANNABIS) and therapeutic agents designed to ameliorate a mental condition; these include ANTIDEPRESSANTS, MOOD STABILIZERS, SEDATIVES, HYPNOTICS, and ANXIOLYTICS (which are CNS depressants), and ANTIPSYCHOTICS. Psychoactive drugs are often referred to as **psychotropic drugs** (or **psychotropics**) in clinical contexts.

**psychoanalysis** *n.* an approach to the mind, personality, psychological disorders, and psychological treatment originally developed by Sigmund FREUD at the beginning of the 20th century. The hallmark of psychoanalysis is the assumption that much mental activity is unconscious and that understanding people requires interpreting the unconscious meaning underlying their overt, or manifest, behavior. Psychoanalysis (often shortened to **analysis**) focuses primarily, then, on the influence of such unconscious forces as repressed impulses, internal conflicts, and childhood traumas on the mental life and adjustment of the individual. The foundations on which CLASSICAL PSYCHOANALYSIS rests are (a) the concept of INFANTILE SEXUALITY; (b) the OEDIPUS COMPLEX; (c) the theory of INSTINCTS or drives; (d) the PLEASURE PRINCIPLE and the REALITY PRINCIPLE; (e) the threefold structure of the psyche into ID, EGO, and SUPEREGO; and (f) the central importance of anxiety and DEFENSE MECHANISMS in neurotic reactions. By contrast, contemporary psychoanalysis and other forms such as OBJECT RELATIONS THEORY, SELF PSYCHOLOGY, and RELATIONAL PSYCHOANALYSIS share a belief in a dynamic unconscious but with minimal or no attention directed to drives or to structural theory. Psychoanalysis as a therapy seeks to bring about basic modifications in an individual's personality by investigating his or her TRANSFERENCE with the analyst or therapist and thereby eliciting and interpreting the unconscious conflicts that have produced the individual's neurosis. The specific methods used to achieve this goal are FREE ASSOCIATION, DREAM ANALYSIS, analysis of RESISTANCES and defenses, and working through the feelings revealed in the transference and COUNTERTRANSFERENCE process. Also called **Freudian approach**; **Freudianism**. See also ANALYTIC PSYCHOLOGY; EGO PSYCHOLOGY; INDIVIDUAL PSYCHOLOGY; NEO-FREUDIAN. —**psychoanalytic** *adj.*

**psychoanalyst** *n.* a therapist who has undergone special training in psychoanalytic theory and practice and who applies to the treatment of mental disorders the techniques developed by Sigmund FREUD and others whose theories were built on Freud's belief in unconscious processes. In the United States, psychoanalysts are usually trained first as psychiatrists, clinical psychologists, or other mental health professionals and then undergo extensive training

at a psychoanalytic institute. Those institutes that believe psychoanalysis is an independent discipline accept other interested and qualified professionals for psychoanalytic training. All recognized training centers require a thorough study of the works of Freud and others in the field, supervised clinical training, a TRAINING ANALYSIS, and a personal program of psychoanalysis. See also ANALYST.

**psychoanalytic group psychotherapy** GROUP THERAPY in which basic psychoanalytic concepts and methods, such as FREE ASSOCIATION, analysis of RESISTANCES and defenses, and DREAM ANALYSIS, are used in modified form, with the assumption that group members will manifest transference to each other as well as to the therapist, allowing multiple transferences to be explored and analyzed. The most prominent exponent of this therapy was British psychoanalyst Wilfred Bion (1897–1979).

**psychoanalytic play technique** a method of CHILD ANALYSIS developed by Melanie KLEIN during the 1920s, in which play activity is interpreted as symbolic of underlying fantasies and conflicts and substitutes for FREE ASSOCIATION. The therapist provides toys for the child and encourages free, imaginative play in order to reveal the child's unconscious wishes and conflicts.

**psychoanalytic psychotherapy** therapy originally conceived in the form of CLASSICAL PSYCHOANALYSIS or in one of the generally shorter approaches to treatment that evolved from the classical form, such as PSYCHODYNAMIC PSYCHOTHERAPY. Generally, it involves a systematic one-on-one interaction between a therapist and a patient that emphasizes the importance of unconscious motives and conflicts as determinants of human behavior while helping the patient overcome abnormal behavior or adjust to the problems of life. The use of FREE ASSOCIATION and therapist interpretation, as well as the development of a THERAPEUTIC ALLIANCE, are common techniques. More contemporary forms of the therapy are influenced by postclassical psychoanalytic concepts of interpersonal dynamics and the self, as emphasized, for example, in RELATIONAL PSYCHOANALYSIS and SELF PSYCHOLOGY.

**psychoanalytic theory** the diverse complex of assumptions and constructs underlying the approach known as PSYCHOANALYSIS. Classically, the term refers specifically to the formulations of Sigmund FREUD, but it now also applies to such offshoots and counterapproaches as ANALYTIC PSYCHOLOGY, INDIVIDUAL PSYCHOLOGY, OBJECT RELATIONS THEORY, SELF PSYCHOLOGY, and others that are based on PSYCHODYNAMIC THEORY.

**psychobiography** *n.* a form of biographical literature that offers a psychological profile or analysis of an individual's personality in addition to the usual account of his or her life and experiences. —**psychobiographical** *adj.*

**psychobiology** *n.* 1. a school of thought in the mental health professions in which the individual is viewed as a holistic unit and both normal and abnormal behavior is explained in terms of the interaction of biological, sociological, and psychological determinants. Also called **ergobiology**. [developed by Adolf MEYER] 2. see BIOLOGICAL PSYCHOLOGY. —**psychobiological** *adj.*

**psychocardiology** *n.* see CARDIAC PSYCHOLOGY.

**psychochemistry** *n.* the study of the relationships between chemicals, behavior (including the genetic or metabolic aspects of behavior), and psychological processes.

**psychocutaneous disorder** any skin (dermatological)

disorder in which psychological factors are believed to play an important role. In some cases (e.g., HIVES, PSYCHOGENIC PRURITUS), the disorder appears to be caused or exacerbated by psychological factors; in others (e.g., acne, psoriasis, eczema, dermatitis), there is a predisposition to the condition, which is precipitated by stress factors (see DIATHESIS–STRESS MODEL).

**psychodiagnosis** *n.* 1. any procedure designed to discover the underlying factors that account for behavior, especially disordered behavior. 2. diagnosis of mental disorders through psychological methods (e.g., structured, semistructured, or unstructured **psychodiagnostic interviews**) and tests.

**psychodrama** *n.* a method of psychotherapy in which clients enact their concerns to achieve new insight about themselves and others. Its central premise is that spontaneity and creativity are crucial for the balanced, integrated personality and that humans are all improvising actors on the stage of life. Clients may ROLE PLAY in a variety of scenes either lived or imagined. The process involves (a) a PROTAGONIST, the client or central figure in the drama; (b) a DIRECTOR, or therapist, who guides this process and assists the client with alternative enactments and interpretations; and (c) AUXILIARY EGOS, therapeutic actors who assist the protagonist in completing his or her interaction with significant others in the drama. When psychodrama is used in a group, these actors are other group members, serving as therapeutic agents by sharing common themes or experiences touched on in the drama. In individual treatment, the protagonist takes the needed roles, although some therapists become involved in the action. Various special techniques are used to advance the therapy, among them ROLE REVERSAL, soliloquy, doubling (see DOUBLE), and future exploration. See also HYPNODRAMA; SOCIODRAMA; THEATER OF SPONTANEITY. [developed in the 1920s by Jacob L. MORENO]

**psychodynamic approach** the psychological and psychiatric approach that views human behavior from the standpoint of unconscious motives that mold the personality, influence attitudes, and produce emotional disorder. The emphasis is on tracing behavior to its origins, as contrasted with the NOSOLOGICAL APPROACH, which concentrates on overt signs and symptoms of disorder. See DYNAMIC PSYCHOLOGY; PSYCHODYNAMIC PSYCHOTHERAPY.

**Psychodynamic Diagnostic Manual (PDM)** a handbook for the diagnosis and treatment of mental health disorders as defined within a broader framework of understanding about individual personality and emotional, social, and interpersonal functioning in both healthy and maladaptive forms. Published in 2006 by a task force of the American Psychoanalytic Association, the International Psychoanalytic Association, Division 39 (Psychoanalysis) of the American Psychological Association, the American Academy of Psychoanalysts and Dynamic Psychiatry, and the National Membership Committee on Psychoanalysis in Clinical Social Work, the PDM is meant to serve as a complement to the *Diagnostic and Statistical Manual of Mental Disorders* (see DSM–IV–TR; DSM–5) and the INTERNATIONAL CLASSIFICATION OF DISEASES. Although based on current neuroscience and treatment OUTCOME RESEARCH, the classification adapts many concepts from PSYCHODYNAMIC THEORY. The diagnostic framework describes (a) healthy and disordered personality functioning; (b) individual profiles of mental functioning, including patterns of relating, comprehending, and expressing emotions, coping with stress and anxiety, self-observation of emotions

and behaviors, and forming moral judgments; and (c) symptom patterns, including differences in each individual's experience of his or her symptoms.

**psychodynamic group psychotherapy** PSYCHODYNAMIC PSYCHOTHERAPY with groups, in which members provide each other with support and modeling for gaining awareness of previously disregarded or unconscious aspects of their personality and behavior.

**psychodynamic psychotherapy** those forms of psychotherapy, falling within or deriving from the psychoanalytic tradition, that view individuals as reacting to unconscious forces (e.g., motivation, drive), that focus on processes of change and development, and that place a premium on self-understanding and making meaning of what is unconscious. Most psychodynamic therapies share certain features, such as emphasis on dealing with the unconscious in treatment and on analyzing TRANSFERENCE. Also called **dynamic psychotherapy**.

**psychodynamics** *n.* **1.** any system or perspective emphasizing the development, changes, and interaction of mental and emotional processes, motivation, and drives. **2.** the pattern of motivational forces, conscious or unconscious, that gives rise to a particular psychological event or state, such as an attitude, action, symptom, or mental disorder. These forces include drives, wishes, emotions, and defense mechanisms, as well as biological needs (e.g., hunger, sex). See also DYNAMIC PSYCHOLOGY. —**psychodynamic** *adj.*

**psychodynamic theory** a constellation of theories of human functioning that are based on the interplay of drives and other forces within the person, especially (and originating in) the psychoanalytic theories developed by Sigmund FREUD and his colleagues and successors, such as Anna FREUD, Carl JUNG, and Melanie KLEIN. Later psychodynamic theories, while retaining concepts of the interworking of drives and motives to some degree, emphasize the process of change and incorporate interpersonal and transactional perspectives of personality development. See PSYCHODYNAMIC APPROACH; PSYCHODYNAMICS.

**psychoeducational diagnostician** a specialist trained in the diagnosis and assessment of children with learning disabilities.

**psychoeducational problems** academic problems substantial enough to cause significant emotional or psychological distress. See SCHOOL PSYCHOLOGY.

**psychoendocrinology** *n.* the study of the hormonal system to discover sites and processes that underlie and influence biological, behavioral, and psychological processes. It is often concerned with identifying biochemical abnormalities that may play a significant role in the development of mental disorders.

**psychogalvanic reflex (PGR)** see GALVANIC SKIN RESPONSE.

**psychogenesis** *n.* **1.** the origin and development of personality, behavior, and mental and psychic processes. **2.** the origin of a particular psychic event in an individual. See PSYCHOGENIC. —**psychogenetic** *adj.*

**psychogenetics** *n.* the study of the inheritance of psychological attributes. —**psychogenetic** *adj.*

**psychogenic** *adj.* resulting from mental factors. The term is used particularly to denote or refer to a disorder that cannot be accounted for by any identifiable physical

dysfunction and is believed to be due to psychological factors (e.g., a conversion disorder). In psychology and psychiatry, psychogenic disorders are improperly considered equivalent to FUNCTIONAL disorders.

**psychogenic amnesia** see DISSOCIATIVE AMNESIA; FUNCTIONAL AMNESIA.

**psychogenic cardiovascular disorder** any disorder of the heart or circulation that cannot be accounted for by any identifiable physical dysfunction or a general medical condition and is thought to be related to psychological factors. It can include a racing heart and chest pain or tightness.

**psychogenic disorder** any disorder that cannot be accounted for by any identifiable biological dysfunction and is believed to be due to psychological factors, such as emotional conflict or stress. In psychology and psychiatry, psychogenic disorders are improperly considered equivalent to FUNCTIONAL DISORDERS. Compare ORGANIC DISORDER.

**psychogenic hypersomnia** episodes of excessive sleep precipitated by psychological factors, such as a wish to escape from a threatening or other anxiety-provoking situation. See also HYPERSOMNIA.

**psychogenic mutism** loss of speech due to psychological rather than physical factors. See also MUTISM.

**psychogenic nocturnal polydipsia** excessive nighttime thirst with a psychological rather than physiological or physical basis. It is most often seen in patients with schizophrenia and is recognized as a dangerous and potentially life-threatening disorder, because chronic overconsumption of substantial amounts of water can fatally damage the body's fluid balance.

**psychogenic nonepileptic seizure (PNES)** a behavioral or emotional manifestation of psychological distress, conflict, or trauma that resembles an epileptic seizure but is not produced by abnormal electrical activity in the brain. Most PNESs are CONVERSION NONEPILEPTIC SEIZURES, but they may also be associated with FACTITIOUS DISORDER or MALINGERING. Also called **psychogenic seizure**.

**psychogenic pain disorder** see PAIN DISORDER.

**psychogenic polydipsia** see POLYDIPSIA.

**psychogenic pruritus** a psychosomatic skin disorder characterized by itching that resists treatment. Psychogenic pruritus often occurs in individuals with anxiety, obsessive-compulsive disorder, or depression.

**psychogenic purpura** see GARDNER–DIAMOND SYNDROME.

**psychogenic seizure** see PSYCHOGENIC NONEPILEPTIC SEIZURE.

**psychogenic vertigo** an unpleasant, illusory sensation of movement of oneself or the environment that cannot be accounted for fully by any identifiable neurological or other physical dysfunction and is thought to be related to psychological factors. Psychogenic vertigo is common in a number of psychological disorders, including panic disorder, agoraphobia, somatoform disorder, and schizophrenia.

**psychographics** *n.* in marketing or advertising, an extended form of demographic analysis that surveys the values, activities, interests, and opinions of populations or population segments (**psychographic segmentation**) to predict consumer preferences and behavior. Psychographic profiling is generally carried out with proprietary tech-

niques developed by private research firms. The information is then used in the development of advertising messages, as well as in products designed to appeal to individuals with specific profiles. Such analysis was formerly referred to as **activities, interests, opinions (AIO)**. —**psychographic** *adj.*

**psychography** *n.* **1.** the natural history and description of mental phenomena. **2.** the art of literary characterization of an individual—real or fictional—making free use of psychological categories and theories. **3.** a psychological biography or character description. See also PSYCHOBIOGRAPHY; PSYCHOHISTORY.

**psychohistory** *n.* the application of psychoanalytic theory to the study of historical figures, events, and movements. Also called **historical psychoanalysis**.

**psychokinesis (PK)** *n.* in parapsychology, the alleged ability to control external events and move or change the shape of objects through the power of thought. Examples include the supposed ability of certain psychics to influence RANDOM NUMBER GENERATORS, to manipulate a roll of dice, or to bend a piece of metal (see CHANGE EFFECT). See also TELEKINESIS. —**psychokinetic** *adj.*

**psycholinguistics** *n.* a branch of psychology that employs formal linguistic models to investigate language use and the cognitive processes that accompany it. **Developmental psycholinguistics** is the formal term for the branch that investigates LANGUAGE ACQUISITION in children. In particular, various models of GENERATIVE GRAMMAR have been used to explain and predict language acquisition in children and the production and comprehension of speech by adults. To this extent, psycholinguistics is a specific discipline, distinguishable from the more general area of psychology of language, which encompasses many other fields and approaches. —**psycholinguistic** *adj.*

**psychological abuse** see EMOTIONAL ABUSE.

**psychological acculturation** see ACCULTURATION.

**psychological aesthetics** a branch of psychology that studies the response to beauty and the underlying factors that contribute to its experience, particularly during exposure to works of art, such as paintings, music, sculpture, and photographs.

**psychological assessment** the gathering and integration of data to evaluate a person's behavior, abilities, and other characteristics, particularly for the purposes of making a diagnosis or treatment recommendation. Psychologists assess diverse psychiatric problems (e.g., anxiety, substance abuse) and nonpsychiatric concerns (e.g., intelligence, career interests) in a range of clinical, educational, organizational, forensic, and other settings. Assessment data may be gathered through interviews, observation, standardized tests, self-report measures, physiological or psychophysiological measurement devices, or other specialized procedures and apparatuses.

**psychological atomism** the view that the contents of mind consist ultimately of discrete and independent units of thought that cannot be further subdivided. These psychological atoms can be arrived at by breaking complex ideas down into simpler ones, until further division and discrimination is impossible. Some interpretations of structural psychology (see STRUCTURALISM) suggest that it is based on a type of psychological atomism.

**psychological autopsy** an analysis that is conducted

following a person's death to reconstruct his or her mental state prior to dying. Psychological autopsies are often performed when a death occurs in a complex, ambiguous, or equivocal (unexplained) manner to determine if the death was the result of natural causes, accident, homicide, or suicide. Attention is given to the total course of the individual's life to ascertain the facts, motivations, and meanings associated with the death. Also called **equivocal death analysis**; **reconstructive psychological evaluation**. [pioneered in the 1970s by U.S. psychologists Edwin S. SHNEIDMAN and Norman L. Farberow and medical examiner Theodore J. Murphy at the Los Angeles Suicide Prevention Center]

**psychological contract** a set of expectations held by employees about what they owe an employer and what an employer owes them. The expectations can be explicit, such as salary or place in the organizational hierarchy, as well as implicit, such as need for individual self-expression, autonomy, or power. [first proposed in 1960 by U.S. business theorist Chris Argyris (1923–2013)]

**psychological counseling** interaction with a client to explore and offer direct advice about affective, cognitive, or behavioral problems and to reach solutions. See also COUNSELING PSYCHOLOGY.

**psychological debriefing (PD)** an intervention immediately following a traumatic event (e.g., a disaster) that aims to mitigate long-term distress and prevent the emergence of posttraumatic stress disorder in those exposed to the event. It relies predominantly on VENTILATION, CATHARSIS, normalization of distress, and psychoeducation about presumed symptoms. Despite data that suggest psychological debriefing might increase distress for some individuals, its use in many contexts continues. See also CRITICAL-INCIDENT STRESS DEBRIEFING.

**psychological deficit** cognitive, behavioral, or emotional performance of any individual at a level that is significantly below, or less adept than, the norm.

**psychological dependence** **1.** reliance on a psychoactive substance for its pleasurable effects. The dependence is signaled by a high rate of drug use, drug craving, and the tendency to relapse after cessation of use. Many believe that stimulation of the brain's reward system is the driving force behind drug addiction and that TOLERANCE and PHYSICAL DEPENDENCE may not be central to the development of dependency-inducing patterns of drug use. **2.** reliance on others for emotional support, often characterized as an excessive need for their guidance, reassurance, and validation.

**psychological determinism** the general position that psychological phenomena, including behaviors, are fixed, resulting from physical and other factors outside the control of the person. See DETERMINISM; IDENTITY THEORY; PHYSICAL DETERMINISM.

**psychological disorder** see MENTAL DISORDER.

**psychological distance** the degree of a person's detachment or DISENGAGEMENT from emotional involvement with one or more other people.

**psychological distress** a set of painful mental and physical symptoms that are associated with normal fluctuations of mood in most people. In some cases, however, psychological distress may indicate the beginning of major depressive disorder, anxiety disorder, schizophrenia, somatization disorder, or a variety of other clinical conditions. It

is thought to be what is assessed by many putative self-report measures of depression and anxiety.

**psychological dysfunction** impaired or abnormal mental functioning and patterns of behavior.

**psychological examination** an investigation by means of interviews, observations of behavior, and administration of psychological tests that evaluates an individual's personality, adjustment, abilities, interests, and functioning in important areas of life and that assesses the presence or severity of any psychological problems that the individual may have. It may contribute to the diagnosis of mental disorder and help to determine the type of treatment required.

**psychological factors** functional factors—as opposed to biological (constitutional, hereditary) factors—that contribute to the development of personality, the maintenance of health and well-being, and the etiology of mental and behavioral disorder. A few examples of psychological factors are the nature of significant childhood and adult relationships, the experience of ease or stress in social environments (e.g., school, work), and the experience of trauma.

**psychological factors affecting medical condition** in *DSM-IV-TR*, a clinical category, classified under "Other Conditions," comprising psychological and behavioral factors that adversely affect the course, treatment, or outcome of a GENERAL MEDICAL CONDITION (e.g., by exacerbating symptoms or delaying recovery). The factors include mental disorders and psychological symptoms (e.g., major depressive disorder, anxiety), personality traits (e.g., hostile, denying), physiological response to stress, and behavior patterns detrimental to health (e.g., overeating, excessive alcohol consumption). A wide range of medical conditions can be affected by psychological factors: cardiovascular, gastrointestinal, neurological, and rheumatological disorders; cancers; and many others. In *DSM-5*, this category is labeled **psychological factors affecting other medical conditions** and is classified under SOMATIC SYMPTOM AND RELATED DISORDERS.

**psychological field** in the social psychology of Kurt LEWIN, the individual's LIFE SPACE or environment as he or she perceives it at any given moment. See also FIELD THEORY.

**psychological intervention** see INTERVENTION.

**psychological kidnapping** depriving a person of the free functioning of his or her personality. The term is sometimes used to describe the psychological mind control attributed to cults. See also BRAINWASHING.

**psychological masquerade** a medical condition that can present as a psychological disorder. Examples include hypothyroidism, epilepsy, multiple sclerosis, dementia, and brain tumors.

**psychological maturity** the ability to deal effectively and resiliently with experience and to perform satisfactorily in developmental tasks (biological, social, cognitive) characteristic of one's age level.

**psychological me** see EMPIRICAL SELF; ME.

**psychological model 1.** a theory, usually including a mechanism for predicting psychological outcomes, intended to explain specific psychological processes. See also CONSTRUCT. **2.** a representation of human cognitive and response characteristics used to approximate and evaluate

the performance of an actual individual in a complex situation, such as a novel aircraft cockpit.

**psychological moment 1.** in general usage, the best possible moment for producing a particular effect on another person or other people, as in *He put in his counteroffer at the psychological moment.* **2.** the lived present as it is experienced. See SPECIOUS PRESENT; TIMELESS MOMENT.

**psychological need** any need that is essential to mental health or that is otherwise not a biological necessity. It may be generated entirely internally, as in the need for pleasure, or it may be generated by interactions between the individual and the environment, as in the need for social approval, justice, or job satisfaction. Psychological needs comprise the four higher levels of MASLOW'S MOTIVATIONAL HIERARCHY. Compare PHYSIOLOGICAL NEED.

**psychological network** the set of individuals, families, and social groups with whom people interact in personally meaningful ways, whose opinions are of some concern to them, and who provide emotional support for them.

**psychological rapport 1.** Carl JUNG's term for TRANSFERENCE, which he defined as an intensified tie to the analyst that acts as a compensation for the patient's defective relationship to present reality. Jung saw this as an inevitable feature of every analysis. **2.** more generally, a kind of agreement or affinity between individuals in their typical ways of thinking, affective responses, and behaviors.

**psychological reactance** see REACTANCE THEORY.

**psychological refractory period (PRP)** the period after response to a stimulus during which response to a second stimulus, presented shortly after the first, is delayed. Reaction time for the second task is increased when the stimulus for it occurs immediately (i.e., within one fourth of a second) after the stimulus for the first task. This **PRP effect** has been attributed to a response-selection bottleneck.

**psychological rehabilitation** the development or restoration of an effective, adaptive identity in an individual with a congenital or acquired physical impairment through such approaches as individual or group therapy, counseling, ability assessment, and drug therapy. The object is to help the individual to develop or regain his or her self-image, ability to cope with emotional problems, competence, and autonomy.

**psychological resilience** see RESILIENCE.

**psychological scale 1.** a system of measurement for a cognitive, social, emotional, or behavioral variable or function, such as personality, intelligence, attitudes, or beliefs. **2.** any instrument that can be used to make such a measurement. A psychological scale may comprise a single item measured with a variety of response formats (e.g., SEMANTIC DIFFERENTIAL, multiple choice, checklist) or be a collection of items with similar formats. Also called **psychometric scale**. See also PSYCHOLOGICAL TEST.

**Psychological Screening Inventory (PSI)** a quick screening device used to identify persons who should receive a more extensive mental health evaluation. Designed to be completed in about 15 minutes, the PSI contains 130 true-false items across five scales. Three basic scales include the Alienation (Al) scale, which screens for major psychiatric disorder; the Social Nonconformity (Sn) scale for significant antisocial behavior; and the Discomfort (Di) scale for general psychological distress. The remaining two scales include the Expression (Ex) scale, which assesses the

personality dimension of extraversion–introversion, and the Defensiveness (De) scale, which assesses the degree of an individual's personal defensiveness in responding to the items. [published in 1973 by U.S. psychologist Richard I. Lanyon (1937– )]

**psychological significance** the extent to which an effect found in a research study is relevant to the attitudes, cognitions, beliefs, and behavior of humans. For example, a finding that describes how individuals function in a variety of different settings would have psychological significance. See also CLINICAL SIGNIFICANCE; PRACTICAL SIGNIFICANCE; STATISTICAL SIGNIFICANCE.

**psychological skills training (PST)** a program of instruction and practice in the use of relaxation, concentration, imagery, goal setting, and energizing to enhance athletic performance.

**psychological social psychology** see SOCIAL PSYCHOLOGY.

**psychological statistics** the area within psychology and the behavioral sciences that is concerned with research design and methodology, addressing issues of measurement, SAMPLING, data collection, data analysis, and reporting of findings. See also QUANTITATIVE PSYCHOLOGY.

**psychological test** any standardized instrument, including scales and self-report inventories, used to measure behavior or mental attributes, such as attitudes, emotional functioning, intelligence and cognitive abilities (reasoning, comprehension, abstraction, etc.), aptitudes, values, interests, and personality characteristics. For example, a researcher might use a psychological test of emotional intelligence to examine whether some managers make better decisions in conflict situations than do others. Also called **psychometric test**.

**psychological testing** see PSYCHOMETRICS.

**psychological time** the subjective estimation or experience of time. This is mainly dependent on the processing and interpretation by the brain of time-related internal or external stimuli (see TIME SENSE), but it can be influenced by other factors. In general, time is experienced as passing more slowly when one is bored or inactive and more rapidly when one is engaged in an absorbing activity. Certain PEAK EXPERIENCES can produce a sense of time dissolving or being suspended (see TIMELESS MOMENT). Drugs and hypnosis can also be used to alter the perception of time. See also TACHYPSYCHIA.

**psychological treatment** various forms of treatment and psychoeducation—including psychotherapy and behavior modification, among others—aimed at increasing an individual's adaptive and independent mental and behavioral functioning. Psychological treatment is the specific purview of trained mental health professionals and incorporates diverse theories and techniques for producing healthy and adaptive change in an individual's actions, thoughts, and feelings. It stands in contrast to treatment with medication, although medication is sometimes used as an adjunct to various forms of psychological treatment (see ADJUNCTIVE THERAPY).

**psychological tremor** see TREMOR.

**psychological universal** a psychological feature that occurs and is recognized across diverse cultures, albeit sometimes in different forms. In 1980, U.S. psychologist Walter J. Lonner (1934– ) proposed a seven-level structure to categorize ideas and concepts that may qualify as

psychological universals: (a) **simple universals** (e.g., the absolute facticity of human aggression); (b) **variform universals** (e.g., aggression takes on various forms in different cultures, but it always occurs); (c) **functional universals** (societal variations that have the same social consequences but are equilibrated for local relevance); (d) **diachronic universals** (universals of behavior that are temporally invariant but interpreted differently); (e) **ethologically oriented universals** (those with phylogenetic, Darwinian links); (f) **systematic behavioral universals** (various subcategories in psychology); and (g) **cocktail-party universals** (those things that all people feel but can only discuss as phenomena that defy measurement).

**psychological warfare** a broad class of tactics designed to influence the attitudes, beliefs, and behavior of soldiers and civilians with regard to military operations. These include attempts to bolster the attitudes and morale of one's own people as well as to change or undermine the attitudes and morale of an opposing army or civilian population.

**psychologism** *n.* any position or theoretical perspective that holds one or more of the following: (a) that the rules of logic are reflective of the way the mind works, so that logic is persuasive only because it “fits” the working of the mind; (b) that truth is established by verifying the correspondence of external facts to ideas in the mind; (c) that epistemological questions can be answered by an understanding of the laws by which the mind works; and (d) that the meanings of words are established by the ideas corresponding to them. The term is generally used as a criticism of particular approaches or theories on the grounds that they make psychological processes that are accidental and contingent the foundation of knowledge: Because it takes the contingent to be fundamental, psychologism will be led toward epistemological relativism. This critical use of the term was introduced by German philosopher Gottlob Frege (1848–1925), whose work in mathematical logic can be seen as a rigorous attempt to eliminate psychologism. It was later taken up by the logical positivists (see LOGICAL POSITIVISM) and, from a different perspective, by German phenomenologist Edmund Husserl (1859–1938), who used it to criticize the British traditions of EMPIRICISM and ASSOCIATIONISM. The term was later turned against Husserl's own work by German philosopher Martin Heidegger (1889–1976); see EXISTENTIAL PHENOMENOLOGY.

**psychologist** *n.* an individual who is professionally trained in one or more branches or subfields of PSYCHOLOGY. Training is obtained at a university or a school of professional psychology, leading to a doctoral degree in philosophy (PhD), psychology (PsyD), or education (EdD). Psychologists work in a variety of settings, including laboratories, schools (e.g., high schools, colleges, universities), social agencies, hospitals, clinics, the military, industry and business, prisons, the government, and private practice. The professional activities of psychologists are also varied but can include psychological counseling, involvement in other mental health care services, educational testing and assessment, research, teaching, and business and organizational consulting. Formal CERTIFICATION or PROFESSIONAL LICENSING is required to practice independently in many of these settings and activities.

**psychologistic** *adj.* **1.** superficially resembling psychology. **2.** characterized by an overuse of psychological explanation and jargon in dealing with some issue. **3.** having the qualities or characteristics of PSYCHOLOGISM.



**psychology** *n.* **1.** the study of the mind and behavior. Historically, psychology was an area within philosophy and emerged from it (see EPISTEMOLOGY). It is now a diverse scientific discipline comprising several major branches of research (e.g., experimental, biological, cognitive, lifespan developmental, personality, social), as well as several subareas of research and applied psychology (e.g., clinical, industrial/organizational, school and educational, human factors, health, neuropsychology, cross-cultural). Research in psychology involves observation, experimentation, testing, and analysis to explore the biological, cognitive, emotional, personal, and social processes or stimuli underlying human and animal behavior. The practice of psychology involves the use of psychological knowledge for any of several purposes: to understand and treat mental, emotional, physical, and social dysfunction; to understand and enhance behavior in various settings of human activity (e.g., school, workplace, courtroom, sports arena, battlefield); and to improve machine and building design for human use. **2.** the supposed collection of behaviors, traits, attitudes, and so forth that characterize an individual or a group (e.g., the psychology of women). —**psychological** *adj.*

**psychology of religion** the empirical or academic study of spiritual experience or organized religion from a psychological perspective. This has involved the description and analysis of certain specialized types of experience, such as those associated with MYSTICISM, as well as an investigation of the more ordinary ways in which RELIGIOUS FAITH affects the behaviors and cognitive processes of believers. Pioneers in this field of study included Wilhelm WUNDT and William JAMES.

**psychometric** *adj.* **1.** of or relating to PSYCHOMETRICS. **2.** of or relating to PSYCHOPHYSICS.

**psychometric examination** a series of psychological tests administered to determine intelligence, manual skills, personality characteristics, interests, or other mental factors.

**psychometric function** see PSYCHOPHYSICAL FUNCTION.

**psychometrician** *n.* **1.** an individual with a theoretical knowledge of measurement techniques who is qualified to develop, evaluate, and improve psychological tests. **2.** an individual who is trained to administer psychological tests and interpret their results, under the supervision of a licensed psychologist. Also called **psychometrist**.

**psychometric model** any theoretical and statistical framework describing how respondents generate their answers to items on a scale or instrument and explaining associated sources of error, which in turn provides a means to determine the reliability of test scores across different testing situations. There are three major approaches: CLASSICAL TEST THEORY, GENERALIZABILITY THEORY, and ITEM RESPONSE THEORY.

**psychometric research** studies in the field of psychological measurement. Such research includes the development of new measures and appropriate methods for their scoring, the establishment of RELIABILITY and VALIDITY evidence for measures, the examination of item and scale properties and their dimensions, and the evaluation of DIFFERENTIAL ITEM FUNCTIONING across subgroups. For example, psychometric research could be used to determine whether a new scale is appropriately administered and scored in a specific subpopulation of respondents.

**psychometrics** *n.* the branch of psychology concerned with the quantification and measurement of mental attributes, behavior, performance, and the like, as well as with the design, analysis, and improvement of the tests, questionnaires, and other instruments used in such measurement. Also called **psychometric psychology**; **psychometry**.

**psychometric scale** see PSYCHOLOGICAL SCALE.

**psychometric scaling** the creation of an instrument to measure a psychological concept through a process of analyzing responses to a set of test items or other stimuli. It involves identifying item properties, noting whether responses match theoretical formats, reducing the larger set of items into a smaller number (e.g., through EXPLORATORY FACTOR ANALYSIS), and determining appropriate scoring methods.

**Psychometric Society** an international nonprofit professional organization founded in 1935 to promote the advancement of quantitative measurement practices in psychology, education, and the social sciences. It publishes the journal *Psychometrika*.

**psychometric test** see PSYCHOLOGICAL TEST.

**psychometric theories of intelligence** theories of intelligence based on or tested by scores on conventional tests of intelligence, such as number-series completions and verbal analogies. These theories are often, but not always, based on FACTOR ANALYSIS; that is, they specify a set of factors alleged to underlie human intelligence. Among the most famous of such theories are Charles SPEARMAN's TWO-FACTOR THEORY and Louis L. THURSTONE's theory of PRIMARY ABILITIES. See also RADEX THEORY OF INTELLIGENCE; THREE-STRATUM MODEL OF INTELLIGENCE.

**psychometry** *n.* **1.** see PSYCHOMETRICS. **2.** in parapsychology, the reputed ability of some people to hold an object in their hands and become aware of facts about its history or about people who have been associated with it. There is, however, no verified evidence of such an ability.

**psychomimetic** *adj., n.* see PSYCHOTOMIMETIC.

**psychomimic syndrome** a condition in which an individual who lacks physical evidence of an illness develops symptoms of an illness experienced by another person, who may have died of the disorder. The symptoms usually occur around the anniversary of the death of the other person. See also ANNIVERSARY REACTION.

**psychomotility** *n.* a motor action or habit (e.g., a tic, handwriting, gait, stammering, dysarthria) that is influenced or controlled by a mental process and that may be an indicator of psychomotor disturbance.

**psychomotor** *adj.* relating to movements or motor effects that result from mental activity.

**psychomotor agitation** restless physical activity arising from mental tension or disturbance. It includes pacing, hand wringing, and pulling or rubbing clothing and other objects and is a common symptom of both MAJOR DEPRESSIVE EPISODES and MANIC EPISODES. Also called **psychomotor excitement**.

**psychomotor disorder** **1.** a disturbance in the psychological control of movement. **2.** a motor disorder precipitated by psychological factors. Examples include epileptic seizures brought on by stress, PSYCHOMOTOR RETARDATION associated with depression, and hyperactivity exhibited during a MANIC EPISODE.

**psychomotor domain** see BLOOM'S TAXONOMY.

**psychomotor epilepsy** an old name for a form of epilepsy characterized by COMPLEX PARTIAL SEIZURES.

**psychomotor excitement** see PSYCHOMOTOR AGITATION.

**psychomotor hallucination** the sensation that parts of the body are being moved to different areas of the body.

**psychomotor retardation** a slowing down or inhibition of mental and physical activity, manifest as slow speech with long pauses before answers, slowness in thinking, and slow body movements. Psychomotor retardation is a common symptom of MAJOR DEPRESSIVE EPISODES.

**psychomotor seizure** see COMPLEX PARTIAL SEIZURE.

**psychomotor skill** any ability (e.g., handwriting, drawing, driving a car) whose performance draws on a combined and coordinated set of cognitive and motor processes.

**psychomotor test** a test requiring a coordination of cognitive and motor activities, as in the TRAIL MAKING TEST.

**psychoneuroendocrinology** *n.* the study of the relations among psychological factors, the nervous system, and the endocrine system in determining behavior and health. It focuses on the effects of psychological stress on these neuroendocrine systems (see NEUROENDOCRINOLOGY) and the effects that changes in these systems have on behavior in normal and psychopathological states.

**psychoneuroimmunology** *n.* the study of how the brain and behavior affect immune responses. [originated by U.S. psychologist Robert Ader (1932–2011)] —**psychoneuroimmunological** *adj.*

**psychoneuromuscular theory** a theory postulating how the use of mental IMAGERY of an activity can improve the subsequent motor performance of that activity. It states that, during the processing of imagery, the brain sends impulses to the muscles. These impulses are identical to those that cause muscle contraction with movement but are of lower intensity. The neural pathways are thereby strengthened, facilitating the learning and performance of motor skills. Also called **ideomotor principle**. See also MENTAL PRACTICE. [originally proposed in 1874 by British physiologist William Benjamin Carpenter (1813–1885)]

**psychoneurosis** *n.* see NEUROSIS.

**psychonomic** *adj.* denoting an approach to psychology that emphasizes quantitative measurement, experimental control, and OPERATIONAL DEFINITIONS, especially in the area of experimental, laboratory psychology. The word was coined to provide a name for the PSYCHONOMIC SOCIETY, which was created in 1959 by a number of experimental psychologists who were opposed to what they regarded as a swing in the AMERICAN PSYCHOLOGICAL ASSOCIATION toward an emphasis on the mental health concerns of psychology. See EXPERIMENTAL PSYCHOLOGY.

**psychonomics** *n.* 1. the science of the laws governing the mind. 2. the science of the environmental factors that influence development. See NOMOLOGY.

**Psychonomic Society** a professional organization founded in 1959 to promote the communication of scientific research in psychology and allied sciences. It publishes six scholarly journals in psychology, mainly concerned with learning, behavior, and cognition.

**psychonosology** *n.* the systematic classification of mental disorders. See PSYCHIATRIC CLASSIFICATION.

**psychooncology** *n.* the study of psychological, behavioral, and psychosocial factors involved in the risk, detection, course, treatment, and outcome (in terms of survival) of cancer. The field examines responses to cancer on the part of patients, families, and caregivers at all stages of the disease. —**psychooncological** *adj.* —**psychooncologist** *n.*

**psychopath** *n.* a former name for an individual with ANTISOCIAL PERSONALITY DISORDER. —**psychopathic** *adj.*

**psychopathia sexualis** the name for SEXUAL DEVIANCE coined by German psychiatrist Richard von Krafft-Ebing (1840–1902) and used as the title of his classic work on the subject, first published in 1886.

**psychopathic personality** see ANTISOCIAL PERSONALITY DISORDER.

**psychopathology** *n.* 1. the scientific study of mental disorders, including their theoretical underpinnings, etiology, progression, symptomatology, diagnosis, and treatment. This broad discipline draws on research from numerous areas, such as psychology, biochemistry, pharmacology, psychiatry, neurology, and endocrinology. The term in this sense is sometimes used synonymously with ABNORMAL PSYCHOLOGY. 2. the behavioral or cognitive manifestations of such disorders. The term in this sense is sometimes considered synonymous with MENTAL DISORDER itself. —**psychopathological** *adj.* —**psychopathologist** *n.*

**psychopathy** *n.* 1. a synonym for ANTISOCIAL PERSONALITY DISORDER. 2. formerly, any psychological disorder or mental disease. —**psychopathic** *adj.*

**psychopharmacological drug** any medication used in the treatment of mental or behavioral disorders.

**psychopharmacology** *n.* the study of the influence of drugs on mental, emotional, and behavioral processes. Psychopharmacology is concerned primarily with the mode of action of various substances that affect different areas of the brain and nervous system, including drugs of abuse. See also CLINICAL PSYCHOPHARMACOLOGY; GERIATRIC PSYCHOPHARMACOLOGY; PEDIATRIC PSYCHOPHARMACOLOGY; PRECLINICAL PSYCHOPHARMACOLOGY. —**psychopharmacological** *adj.* —**psychopharmacologist** *n.*

**psychopharmacotherapy** *n.* the use of pharmacological agents in the treatment of mental disorders. For example, acute or chronic schizophrenia is treated by administration of antipsychotic drugs or other agents. Although such drugs do not cure mental disorders, they may—when used appropriately—produce significant relief from symptoms.

**psychophysical** *adj.* of or relating to the relationship between physical stimuli and mental events.

**psychophysical dualism** see DUALISM; MIND–BODY PROBLEM. See also CARTESIAN DUALISM.

**psychophysical function** a psychometric relationship between a stimulus and judgments about the stimulus, as expressed in a mathematical formula. In the METHOD OF CONSTANT STIMULI, it is the proportion of *yes* responses (i.e., that the stimuli were perceived) as a function of physical magnitude of the stimuli. Also called **psychometric function**.

**psychophysical law** a mathematical relationship between the strength of a physical stimulus and the intensity of the sensation experienced. Psychophysical laws were first developed from the empirical research conducted by Ernst Heinrich WEBER and Gustav Theodor FECHNER, chiefly at the University of Leipzig. This work, aimed at direct scientific investigation of the MIND–BODY PROBLEM, established the foundation of psychology as an experimental science. Also called **psychophysical relationship**. See also INNER PSYCHOPHYSICS; OUTER PSYCHOPHYSICS.

**psychophysical method** any of various standard techniques used in investigating psychophysical problems, such as the METHOD OF ADJUSTMENT, the METHOD OF EQUAL-APPEARING INTERVALS, and the METHOD OF LIMITS.

**psychophysical parallelism** see PARALLELISM.

**psychophysical properties** in Daniel E. BERLYNE's theory of aesthetic preference (see AROUSAL POTENTIAL), factors (e.g., intensity, pitch, saturation) that are intrinsic to a stimulus.

**psychophysical relationship** see PSYCHOPHYSICAL LAW.

**psychophysical research** empirical studies, often conducted in a laboratory setting, linking properties of a physical stimulus to a sensory response. For example, in a study of hearing, a participant might be requested to distinguish a number of different sounds by their loudness.

**psychophysical scaling** any of the techniques used to construct scales relating physical stimulus properties to perceived magnitude. For example, a respondent in a study may have to indicate the roughness of several different materials that vary in texture. Methods are often classified as direct or indirect, based on how the observer judges magnitude.

**psychophysical tuning curve (PTC)** see TUNING CURVE.

**psychophysics** *n.* a branch of psychology that studies the relationship between the objective physical characteristics of a stimulus (e.g., its measured intensity) and the subjective perception of that stimulus (e.g., its apparent brightness).

**psychophysiological assessment** the use of physiological measures via electroencephalography, electrocardiography, electromyography, and electrooculography to infer psychological processes and emotion. Also called **psychophysiological monitoring**.

**psychophysiological research** empirical studies, often conducted in a laboratory setting using functional magnetic resonance imaging and other neuroscientific tools, that link an individual's bodily responses (e.g., change in heart rate, palmar sweat, eye blink) and mental processes (e.g., memory, cognitive processing, brain function). For example, in addition to collecting data on several performance measures, a psychophysiological researcher might examine cortisol levels in adolescents with a diagnosis of conduct disorder and compare them to levels in those without the disorder.

**psychophysiology** *n.* the study of the relation between the chemical and physical functions of organisms (physiology) and cognitive processes, emotions, and behavior (psychology). Also called **physiological psychology**. See also APPLIED PSYCHOPHYSIOLOGY; CLINICAL PSYCHOPHYSIOLOGY. —**psychophysiological** *adj.* —**psychophysiologicalist** *n.*

**psychopolitics** *n.* **1.** the study of the psychological aspects of political behavior and political structures, such as the effects of different types of system (democratic, fascist, socialist, etc.) on a society and its members. **2.** the use of psychological tactics or strategies to achieve a political objective. —**psychopolitical** *adj.*

**psychoscience** *n.* any science that deals with the mind and mental behavior, with mental diseases and disorders, and with their treatment and cure. In particular, it refers to PSYCHOLOGY, PSYCHIATRY, and COGNITIVE SCIENCE.

**psychosexual** *adj.* relating to or denoting any aspects of human sexuality that are based on or influenced by psychological factors, as opposed to genetic, chemical, and other biologically based (organic) aspects.

**psychosexual development** in the classical psychoanalytic theory of Sigmund FREUD, the step-by-step growth of sexual life as it affects personality development. Freud posited that the impetus for psychosexual development stems from a single energy source, the LIBIDO, which is concentrated in different organs throughout infancy and helps produce the various **psychosexual stages**: the ORAL STAGE, ANAL STAGE, PHALLIC STAGE, LATENCY STAGE, and GENITAL STAGE. Each stage gives rise to its own characteristic erotic activities (e.g., sucking and biting in the oral stage), and the early expressions may lead to “perverse” activities later in life, such as SADISM, MASOCHISM, VOYEURISM, and EXHIBITIONISM. Moreover, the different stages leave their mark on the individual's character and personality, especially if sexual development is arrested in a FIXATION at one particular stage. Also called **libidinal development**.

**psychosexual disorders** see SEXUAL AND GENDER IDENTITY DISORDERS.

**psychosexual dysfunction** see SEXUAL DYSFUNCTION.

**psychosexual stages** see PSYCHOSEXUAL DEVELOPMENT.

**psychosexual trauma** a frightening, degrading, or otherwise traumatic sexual experience in earlier life that is related to current emotional problems. Examples include incest or other forms of child SEXUAL ABUSE, SEXUAL ASSAULT, and DATE RAPE.

**psychosis** *n.* **1.** an abnormal mental state involving significant problems with REALITY TESTING. It is characterized by serious impairments or disruptions in the most fundamental higher brain functions—perception, cognition and cognitive processing, and emotions or affect—as manifested in behavioral phenomena, such as delusions, hallucinations, and significantly disorganized speech. See PSYCHOTIC DISORDER. **2.** historically, any severe mental disorder that significantly interferes with functioning and ability to perform activities essential to daily living.

**psychosocial** *adj.* describing the intersection and interaction of social, cultural, and environmental influences on the mind and behavior.

**psychosocial deprivation** lack of adequate opportunity for social and intellectual stimulation. It may be a significant factor in emotional disturbance and delayed mental development or intellectual disability in children. Also called **sociocultural deprivation**. See PSEUDORETARDATION.

**psychosocial development** **1.** according to Erik ERIKSON, personality development as a process influenced by social and cultural factors throughout the lifespan. See ERIKSON'S EIGHT STAGES OF PSYCHOSOCIAL DEVELOPMENT. **2.**

the development of both prosocial behavior (e.g., cooperation) and antisocial behavior (e.g., aggression). Psychosocial development involves changes not only in children's overt behavior but also in their SOCIAL COGNITION. For example, they become able to take the perspective of others and to understand that other people's behavior is based on their knowledge and desires.

**psychosocial factors** social, cultural, and environmental phenomena and influences that affect mental health and behavior. These influences include social situations, relationships, and pressures, such as competition for education, health care, and other social resources; rapid technological change; work deadlines; and changes in social roles and status (e.g., of women and minority groups).

**psychosocial mental retardation (psychosocial mental developmental delay)** see PSEUDORETARDATION.

**psychosocial rehabilitation** the process of enhancing the recovery of individuals with severe mental illness by teaching or restoring psychological, behavioral, social, and vocational skills that will enable them to function in their community and by facilitating that endeavor through a continuum of services such as psychotherapy, family psychoeducation, illness management, and supported employment. The services may be initiated just before a patient's discharge from residential treatment and provided on an ongoing basis thereafter, but they are also available to individuals with severe mental illness who have not been institutionalized. The services are usually provided by specialized professionals (e.g., therapists, vocational counselors, employment specialists, social workers) who use focused programs and techniques to assist these individuals in achieving functional independence. Also called **psychiatric rehabilitation**.

**psychosocial stressor** a life situation that creates an unusual or intense level of stress that may contribute to the development or aggravation of mental disorder, illness, or maladaptive behavior. Examples of psychosocial stressors include divorce, the death of a child, prolonged illness, unwanted change of residence, a natural catastrophe, or a highly competitive work situation.

**psychosocial support** a broad term describing a range of services offered by mental health professionals to those in pressing need. Whether designed to help individuals cope with a serious illness or to alleviate distress in whole communities following a disaster (see DISASTER PSYCHOLOGY), such services may range from mental health counseling, psychoeducation, and group support to spiritual support and other assistance and are provided by psychologists, social workers, and pastoral counselors, among others. See also SOCIAL SUPPORT.

**psychosocial therapy** psychological treatment designed to help an individual with emotional or behavioral disturbances adjust to situations that require social interaction with members of the family, work group, community, or any other social unit.

**psychosomatic** *adj.* **1.** of or relating to the role of the mind (psyche) in diseases or disorders affecting the body (soma); specifically, the role of psychological factors (e.g., anxiety, depression) in the etiology and course of pathology in bodily systems. **2.** characterizing an approach based on the belief that a psychological component operates in the cause of somatic disturbances. **3.** of or referring to any interaction between mind and body.

**psychosomatic disorder** a type of disorder in which psychological factors are believed to play an important role in the origin or course (or both) of the disorder. See also PSYCHOLOGICAL FACTORS AFFECTING MEDICAL CONDITION.

**psychosomatic medicine** a branch of medicine that emphasizes the role of psychological factors in causing and treating disease.

**psychostimulant** *n.* see CNS STIMULANT.

**psychosurgery** *n.* the treatment of a mental disorder by surgical removal or destruction of selective brain areas. The most well-known example of psychosurgery is prefrontal LOBOTOMY, historically used particularly for schizophrenia but also a variety of other disorders. Psychosurgery was most popular from 1935 to 1960 and is among the most controversial of all psychiatric treatments ever introduced. Contemporary psychosurgery approaches (e.g., CINGULOTOMY) are far more precisely targeted and confined in extent than the early techniques, employing high-tech imaging and a variety of highly controllable methods of producing minute lesions. Additionally, they are used only as a last resort and only for a handful of specific psychiatric disorders—major depressive disorder, bipolar disorder, obsessive-compulsive disorder, and generalized anxiety disorder—that have been resistant to other available therapies.

**psychosynthesis** *n.* in psychoanalysis, an attempt to unify the various components of the unconscious, such as dreams, fantasies, and instinctual strivings, with the rest of the personality. This "constructive approach" was advocated by Carl JUNG, who contrasted it with what he saw as Sigmund FREUD's "reductive approach." —**psychosynthetic** *adj.*

**psychotechnics** *n.* **1.** the practical application of psychological principles, as in economics, sociology, and business. **2.** the application of psychological principles to alter or control the behavior of an individual.

**psychotechnology** *n.* **1.** the body of psychological facts and principles involved in the practical applications of psychology. **2.** the application of such knowledge.

**psychotherapeutic process** whatever occurs between and within a client and therapist during the course of psychotherapy. This includes the experiences, attitudes, emotions, and behavior of both client and therapist, as well as the dynamic or interaction between them. See also PROCESS RESEARCH.

**psychotherapy** *n.* any psychological service provided by a trained professional that primarily uses forms of communication and interaction to assess, diagnose, and treat dysfunctional emotional reactions, ways of thinking, and behavior patterns. Psychotherapy may be provided to individuals, couples (see COUPLES THERAPY), families (see FAMILY THERAPY), or members of a group (see GROUP THERAPY). There are many types of psychotherapy, but generally they fall into four major categories: PSYCHODYNAMIC PSYCHOTHERAPY, COGNITIVE THERAPY or BEHAVIOR THERAPY, HUMANISTIC THERAPY, and INTEGRATIVE PSYCHOTHERAPY. The **psychotherapist** is an individual who has been professionally trained and licensed (in the United States by a state board) to treat mental, emotional, and behavioral disorders by psychological means. He or she may be a clinical psychologist, psychiatrist, counselor, social worker, or psychiatric nurse. Also called **therapy**; **talk therapy**. —**psychotherapeutic** *adj.*

**psychotherapy by reciprocal inhibition** a type of BEHAVIOR THERAPY in which emphasis is placed on weakening the bond between anxiety responses and anxiety-provoking stimuli by conditioning the anxiety response to an incompatible response, such as muscle relaxation. See RECIPROCAL INHIBITION; SYSTEMATIC DESENSITIZATION.

**psychotherapy integration** see INTEGRATIVE PSYCHOTHERAPY.

**psychotherapy matching** see MATCHING PATIENTS.

**psychotherapy research** the use of scientific methods to describe, explain, and evaluate psychotherapeutic techniques, processes, and effectiveness.

**psychotic** *adj.* of, relating to, or affected by PSYCHOSIS or a PSYCHOTIC DISORDER.

**psychotic disorder** any of a number of severe mental disorders, regardless of etiology, characterized by gross impairment in REALITY TESTING. The accuracy of perceptions and thoughts is incorrectly evaluated, and incorrect inferences are made about external reality, even in the face of contrary evidence. Specific symptoms indicative of psychotic disorders are delusions, hallucinations, and markedly disorganized speech, thought, or behavior; individuals may have little or no insight into their symptoms. Some examples of psychotic disorders are SCHIZOPHRENIA, SCHIZOPHRENIFORM DISORDER, SCHIZOAFFECTIVE DISORDER, DELUSIONAL DISORDER, BRIEF PSYCHOTIC DISORDER, and psychotic disorders due to a substance (see SUBSTANCE-INDUCED PSYCHOTIC DISORDER) or to a medical condition.

**psychotic episode** a period during which an individual exhibits psychotic symptoms, such as hallucinations, delusions, and disorganized speech. See also ACUTE PSYCHOTIC EPISODE.

**psychotic feature** any clinical symptom that entails a marked loss of contact with reality, notably including delusions, hallucinations, disorganized speech, or disorganized behavior. See MOOD-CONGRUENT PSYCHOTIC FEATURE; MOOD-INCONGRUENT PSYCHOTIC FEATURE.

**psychoticism** *n.* a dimension of personality in EYSENCK'S DIMENSIONS characterized by aggression, impulsivity, aloofness, and antisocial behavior, indicating a susceptibility to psychosis and psychopathic disorders (see ANTISOCIAL PERSONALITY DISORDER). It was originally developed as a factor for distinguishing between normal individuals and those with schizophrenia or bipolar disorders, using tests of judgment of spatial distance, reading speed, level of proficiency in mirror drawing, and adding rows of numbers.

**psychotogenic** **1.** *adj.* describing a drug-induced state resembling psychosis, marked, for example, by sensory illusions or distortions, hallucinations, delusions, and behavioral and emotional disturbances. **2.** *n.* an agent, such as a hallucinogen, that induces such a state. Also called **psychotogen**.

**psychotomimetic** **1.** *adj.* tending to induce hallucinations, delusions, or other symptoms of psychosis. **2.** *n.* one of a group of drugs originally used in laboratory experiments to determine if they could induce psychoses, or states mimicking psychoses, on the basis of their effects. The group includes LSD and AMPHETAMINES. Also called **psychomimetic**.

**psychotoxic** *adj.* denoting or relating to agents that cause brain damage, such as excess alcohol, certain drugs and heavy metals, volatile solvents, and pesticides.

**psychotropic drug** see PSYCHOACTIVE DRUG.

**PT** abbreviation for PHYSICAL THERAPY.

**PTA** **1.** abbreviation for PARENT TEACHERS ASSOCIATION. **2.** abbreviation for POSTTRAUMATIC AMNESIA.

**PTC** abbreviation for psychophysical TUNING CURVE.

**P-technique factor analysis** a method in EXPLORATORY FACTOR ANALYSIS for understanding the major underlying dimensions of variables for a given person over time. In this approach, a single individual or unit is measured repeatedly on a broad range of variables, the variables are correlated over the series of occasions sampled, and the correlation factor is analyzed. For example, a set of memory tests may be administered to a person at several points in his or her life; P-technique factor analysis could then be used to identify dimensions of change or patterns of covariation among the variables across occasions. Also called **P factor analysis**. Compare Q-TECHNIQUE FACTOR ANALYSIS; R-TECHNIQUE FACTOR ANALYSIS.

**Ptolemaic theory** see GEOCENTRIC THEORY.

**ptosis** *n.* (*pl.* **ptoses**) the sinking or dropping of an organ or part of the body, especially drooping of the eyelid. This may be caused by injury to the third cranial (oculomotor) nerve or the eye muscles. It is also a characteristic sign of MYASTHENIA GRAVIS and HORNER'S SYNDROME. —**ptotic** *adj.*

**PTP** abbreviation for POSTTETANIC POTENTIATION.

**PTSD** abbreviation for POSTTRAUMATIC STRESS DISORDER.

**ptyalism** *n.* **1.** the excessive production of saliva. Normal production of the parotid, submaxillary, and sublingual salivary glands is between 1,000 and 1,500 ml per day for an adult human. Ptyalism may be associated with epilepsy, encephalitis, certain medications, high blood pressure, intense emotion, or high anxiety. Also called **sialorrhea**. **2.** a condition in which saliva production is normal but the person is unable to swallow the saliva as fast as it is secreted, as in cases of parkinsonism, bulbar or pseudobulbar paralysis, and bilateral facial-nerve palsy.

**pubertas praecox** see PRECOCIOUS PUBERTY.

**puberty** *n.* the stage of development when the genital organs reach maturity and secondary SEX CHARACTERISTICS begin to appear, signaling the start of ADOLESCENCE. It is marked by ejaculation of sperm in the male, onset of menstruation and development of breasts in the female, and, in both males and females, growth of pubic hair and increasing sexual interest. See also PRECOCIOUS PUBERTY; PERSISTENT PUBERTISM. —**pubertal** *adj.*

**puberty rite** the initiation into adult life of a pubescent member of a community through ceremonies, cultural lore indoctrination, and similar customs. For young men in traditional societies, this may involve a physical and psychological ordeal in which they experience pain, hardship, and fear. For young women in traditional cultures, this rite often involves seclusion, spiritual activities, and special ceremonies. See RITE OF PASSAGE.

**pubescence** *n.* the period or process of reaching puberty. —**pubescent** *adj.*

**pubescent growth spurt** the rapid development of bone and muscle in response to increased secretion of growth hormone at PUBERTY. There is usually a dramatic increase in height and weight, accompanied by develop-

ment of the reproductive organs and secondary SEX CHARACTERISTICS. Also called **adolescent growth spurt**.

**public adoption** see ADOPTION.

**publication bias** the tendency for study results that are published in journals or other outlets to differ from study results that are not published. In particular, published studies are more likely to show positive or statistically significant findings. Thus, when conducting a META-ANALYSIS, it is important to gather the full range of available research, both published and unpublished, to ensure that the analysis does not provide unrepresentatively large EFFECT SIZES. See FILE-DRAWER PROBLEM.

**publication ethics** the principles and standards associated with the process of publishing the results of scientific research or scholarly work in general. These include such requirements as giving the appropriate credit and authorship status to those who have earned it; ensuring that appropriate citations are given to ideas, methodology, or findings from another study; not submitting the same article to more than one journal simultaneously; and not submitting results for republication without indicating that they have already been published elsewhere.

**Publication Manual of the American Psychological Association** a reference book offering guidelines on how to present written material in the behavioral and social sciences clearly and effectively. Based on the special requirements of psychology but applicable to sociology, business, economics, nursing, social work, criminology, and other disciplines as well, the *Publication Manual* describes the editorial style established by the American Psychological Association (APA) and used in all of the books and journals that it publishes (i.e., APA STYLE). Besides guidance on the content and organization of a manuscript, the *Publication Manual* offers direction on such points as grammar and the mechanics of writing, the uniform use of punctuation and abbreviations, the construction of tables and figures, the selection of headings, the citation and formatting of references, and the presentation of statistics. The forerunner of the *Publication Manual* was a brief article published in the February 1929 issue of the APA journal *Psychological Bulletin*. A revised and expanded version of these instructions was published as a first edition of the *Publication Manual* in 1952. The second edition was published in 1974, the third in 1983, the fourth in 1994, the fifth in 2001, and the sixth in 2010. The first electronic version was made available in 2013.

**public distance zone** the DISTANCE ZONE adopted by people in highly formal, official, or ceremonial interactions. The public distance zone is defined as an area between 3.5 and 7.5 m (11½–24½ ft) from a person. Compare INTIMATE ZONE; PERSONAL DISTANCE ZONE; SOCIAL ZONE. See also PROXEMICS.

**public health approach** a community-based approach to mental and physical health in which agencies and organizations focus on enhancing and maintaining the well-being of individuals by ensuring the existence of the conditions necessary for them to lead healthy lives. The approach involves such activities as monitoring community health status; identifying and investigating health problems and threats to community health; ensuring the competency of health care providers and personnel; disseminating accurate information and educating individuals about health issues; developing, modifying, and enforcing policies and other regulatory measures that sup-

port community health and safety; and ensuring the accessibility of quality health services. The approach involves various levels of disease and disorder prevention (primary, secondary, tertiary), the expansion and appropriate use of the scientific knowledge base, and the development and utilization of partnerships within and among communities.

**public health nurse** a REGISTERED NURSE or NURSE PRACTITIONER who has received additional training in social and public health sciences and services. Public health nurses are usually employed by government health departments and engaged in educational, informational, and preventive activities.

**public health services** 1. services intended to protect and improve community health. 2. in some countries, health services provided by the state and financed mainly by general taxation.

**public mental hospital** a hospital for patients with mental disorders that is organized and run by the state, the county, or the U.S. Department of Veterans Affairs. Compare PRIVATE MENTAL HOSPITAL.

**public residential facility** any residential setting directly operated by state or local government for individuals with intellectual or developmental disabilities. The term generally refers to large institutions, such as developmental centers (formerly called TRAINING SCHOOLS or state schools), but the number of smaller residential settings, such as COMMUNITY RESIDENCES, that are publicly operated now greatly exceeds the number of remaining large public facilities.

**public self** information about the self, or an integrated view of the self, that is conveyed to others in actions, self-descriptions, appearance, and social interactions. An individual's public self may vary depending on the target or audience of such impressions. The public self is often contrasted with the PRIVATE SELF, which may be similar to or different from the self one reveals to others. See also SOCIAL IDENTITY; SOCIAL SELF.

**public self-consciousness** see SELF-CONSCIOUSNESS.

**public service psychology** an area of psychology defined by the activities of psychologists employed in public sector agencies (e.g., community mental health centers, state hospitals, correctional facilities, police and public safety agencies) and by the psychological condition of people served by these agencies. Particular interests include advocacy, access to services, education and training, public policy formulation, research and program evaluation, and prevention efforts.

**public sociology** a multidisciplinary, practice-oriented specialization in the field of sociology that works with individuals and community groups to develop problem-focused research projects that offer concrete help in generating needed social change. Formerly called **clinical sociology**.

**public-speaking anxiety** fear of giving a speech or presentation in public because of the expectation of being negatively evaluated or humiliated by others. This is a common fear, associated with SOCIAL PHOBIA.

**public territory** a public space temporarily used by a person or group (e.g., park bench, bus seat). Compare PRIMARY TERRITORY; SECONDARY TERRITORY. See PROXEMICS.

**PUBS** abbreviation for PERCUTANEOUS UMBILICAL CORD BLOOD SAMPLING.

**pubdental nerve** a combined sensory and motor nerve that carries fibers to the muscles and skin of the perineal region from branches of the second, third, and fourth sacral nerves (see SPINAL NERVE). It terminates as the dorsal nerve of the penis or clitoris.

**pubdendum** *n.* (*pl.* **pubdenda**) human external genitalia, especially those of the female. See VULVA. —**pubdental** *adj.*

**puer aeternus** the ARCHETYPE of eternal youth. [Latin, “eternal boy”; introduced by Carl JUNG]

**puerilism** *n.* immature, childish behavior.

**puerperal disorder** a disorder occurring in a woman during the puerperium, which extends from the termination of labor to the return of the uterus to its prepregnant condition. Symptoms include psychotic and depressive reactions and, occasionally, manic episodes or delirious states precipitated by biological, psychosocial, or environmental factors. See POSTPARTUM DEPRESSION; POSTPARTUM PSYCHOSIS.

**puerperium** *n.* (*pl.* **puerperia**) see POSTPARTUM PERIOD. —**puerperal** *adj.*

**Puerto Rican syndrome** see MAL DE PELEA.

**Pulfrich effect** an illusion of depth that occurs when a swinging pendulum is viewed by one eye normally, but through a dimming filter by the other eye. The difference in the timing of the visual signals created by this situation is interpreted by the brain as BINOCULAR DISPARITY, and the pendulum appears to be traveling in an ellipse rather than back and forth. Also called **Pulfrich phenomenon**. Compare MACH-DVORAK STEREOILLUSION. [Carl Pulfrich (1858–1927), German scientist]

**pull model** a psychological theory emphasizing how positive experience draws a person to establish meaning or to set goals. Compare PUSH MODEL.

**pull-out program** an educational plan in which students who spend most of the day in traditional classrooms are, for a portion of the day, taken to a separate class for specialized work, either above or below the standard of instruction in their regular classrooms. See also OPPORTUNITY CLASS.

**pulmonary embolism** the lodging of a blood clot or other obstructing material (see EMBOLISM) in a pulmonary artery with consequent obstruction of blood supply to the lung tissue. The clot most commonly derives from DEEP VEIN THROMBOSIS.

**pulse** *n.* **1.** the pressure waves caused by rhythmic contraction and relaxation of the walls of arteries as blood is pumped from the heart. The pulse, which can be detected manually at superficial arteries, provides a measure of the heart rate. The strength of the pulse at various points in the body (e.g., the ankle) gives an indication of the adequacy of circulation. **2.** an increase followed by a decrease in magnitude of a signal.

**pulvinar** *n.* a large nucleus in the brain that forms the dorsal posterior region of the THALAMUS. It has afferent and efferent connections with the CINGULATE CORTEX and is also connected to the SUPERIOR COLLICULUS. It has a role in eye movements.

**pun** *n.* an expression that makes deliberate use of verbal AMBIGUITY, generally for humorous effect; an example is “That’s the psychologist who went for a walk and fell into a

depression.” Many puns exploit the phenomenon of homophony, in which words sounding the same (or nearly the same) have different meanings. See also POLYSEMY.

**punch-drunk** *adj.* see DEMENTIA PUGILISTICA.

**punctate sensitivity** the variable distribution of sense receptors in the skin, with the result that some points are more sensitive to certain types of stimuli than others. On most parts of the skin, pain spots are more densely distributed than touch, cold, and warm spots, in that order.

**punctuated equilibrium** a theory of EVOLUTION proposing that periods of rapid change, resulting in the development of new species, are separated by longer periods of little or no change. Proposed in 1972 by U.S. paleontologists Niles Eldredge (1943– ) and Stephen Jay Gould (1941–2002), the theory subsequently inspired similar models of change as applied to other processes. In a model of group development, for example, U.S. behavioral scientist Connie J. Gersick proposed in 1988 that groups go through three stages of development: (a) a preliminary stage of setting deep structures (i.e., establishing how the group will be organized and what activities it will carry out); (b) an equilibrium period during which the deep structures are maintained; and (c) a revolutionary period of rapid change (usually resulting from environmental pressures) during which the deep structures are undone and superseded by new ones.

**pungent** *adj.* denoting one of the seven classes of odorants in the STEREOCHEMICAL SMELL THEORY.

**punishment** *n.* **1.** a physically or psychologically painful, unwanted, or undesirable event or circumstance imposed as a penalty on an actual or perceived wrongdoer. **2.** in OPERANT CONDITIONING, the process in which the relationship, or CONTINGENCY, between a response and some stimulus or circumstance results in the response becoming less probable. For example, a pigeon’s pecks on a key may at first occasionally be followed by presentation of food; this will establish some probability of pecking. Next, each peck produces a brief electric shock (while the other conditions remain as before). If pecking declines as a result, then punishment is said to have occurred, and the shock is called a **punisher**. —**punish** *vb.*

**punishment and obedience orientation** see PRE-CONVENTIONAL LEVEL.

**punitive damages** a sum of money a defendant is ordered to pay to the plaintiff in a civil lawsuit when the goal of the court is to punish the defendant for malicious or evil acts and to deter others from engaging in similar conduct. Also called **exemplary damages**. Compare COMPENSATORY DAMAGES.

**punitive parenting** a parent’s habitual use of punishment to teach or control a child, often involving harsh or coercive practices such as yelling at, threatening, pushing, grabbing, hitting, or verbally disparaging the child.

**pupil** *n.* the aperture through which light passes on entering the eye. It is located immediately in front of the LENS. The size of the opening is controlled by a circle of muscle (the IRIS) innervated by fibers of the autonomic nervous system.

**pupillary reflex** the automatic change in size of the pupil in response to light changes. The pupil constricts in response to bright light and dilates in dim light. Also called **light reflex**. See also ACCOMMODATION.

**pupillary-skin reflex** see CUTANEOUS-PUPILLARY REFLEX.

**pupillometry** *n.* **1.** the scientific measurement of the pupil of the eye, using a **pupillometer** (or **coreometer**) to measure the pupil's diameter. Also called **pupillometrics**. **2.** a research method in which pupillary responses to stimuli (usually visual images) are measured in order to determine the participant's interest in the stimuli. [devised by U.S. psychologist Ekhard Hess (1916–1986)]

**puppetry therapy** the use of puppets as a projective form of PLAY THERAPY. See also PROJECTIVE PLAY.

**puppy love** a type of ROMANTIC LOVE that flourishes during adolescence but is often unstable and transient. Puppy love is regarded as marking a step toward emotional maturation.

**Purdue Pegboard Test** see PEGBOARD TEST.

**pure alexia** see ALEXIA.

**pure color** a sensation of color induced by monochromatic light, that is, light that contains a single wavelength.

**pure consciousness** awareness without content. It is a central concept in VEDANTA philosophy.

**pure research** see BASIC RESEARCH.

**pure science** see BASIC SCIENCE.

**pure-stimulus act** a behavioral response that does not move an organism toward its goal but that serves solely as a stimulus for other responses. It operates by activating proprioceptive stimuli that in turn initiate the appropriate goal-directed response. Also called **pure-stimulus response**. [first defined in 1930 by Clark L. HULL]

**pure tone** a sound whose instantaneous SOUND PRESSURE is a sinusoidal function of time. A pure tone has only one frequency component. Also called **simple tone**; **sinusoid**. Compare COMPLEX TONE.

**pure-tone audiometry** see AUDIBILITY RANGE; AUDIOGRAM.

**pure word deafness** a type of AUDITORY AGNOSIA in which an individual is unable to understand spoken language but can comprehend nonverbal sounds and read, write, and speak in a relatively normal manner. The syndrome is considered “pure” in the sense that it is relatively free of the language difficulties encountered in the APHASIAS.

**purging** *n.* the activity of expelling food that has just been ingested, usually by vomiting or the use of laxatives. Purging often occurs in conjunction with an eating binge in ANOREXIA NERVOSA or BULIMIA NERVOSA; its purpose is to eliminate or reduce real or imagined weight gain.

**purging disorder** a disturbance in which individuals feel a loss of control after eating only a small amount of food and recurrently vomit up or otherwise expel their meals. It is differentiated from BULIMIA NERVOSA by the absence of bingeing. Studies indicate that purging disorder affects between 1.1% and 5.3% of women in their lifetimes and that the typical age of onset is late adolescence (18–20 years old). The condition is associated with a greater release of the hormone CHOLECYSTOKININ, which controls feelings of fullness, and lower levels of the protein LEPTIN, which conveys information about body-fat levels. [originally described in 2005 by clinical psychologist Pamela K. Keel and colleagues]

**Purkinje afterimage** see BIDWELL'S GHOST. [Jan Evangelista **Purkinje** (also spelled Purkyně; 1787–1869), Czech physiologist and physician]

**Purkinje cell** a type of large, highly branched cell in the CEREBELLAR CORTEX of the brain that receives incoming signals about the position of the body and transmits signals to spinal nerves for coordinated muscle actions. [Jan Evangelista **Purkinje**]

**Purkinje figures** the observation of one's own network of retinal blood vessels, best seen by shining a bright light through the sclera at the margin of the eye. [Jan Evangelista **Purkinje**]

**Purkinje–Sanson images** three reflected images of a fixated object produced by the surface of the cornea and the front and back of the lens. [Jan Evangelista **Purkinje**; Louis Joseph **Sanson** (1790–1841), French surgeon]

**Purkinje shift** a visual phenomenon in which colors appear to change with the level of illumination. A rose, for example, may appear bright red and its leaves bright green at the beginning of twilight, then gradually change to a black flower with light gray leaves as the level of daylight declines. The Purkinje shift affects the brilliance of the red end of the spectrum before the blue end. [Jan Evangelista **Purkinje**]

**purple** *n.* a color that results from mixing short and long wavelengths of light. See EXTRASPECTRAL HUE.

**purpose** *n.* **1.** the reason for which something is done or for which something exists. **2.** a mental goal or aim that directs a person's actions or behavior. **3.** persistence or resolution in pursuing such a goal.

**purposeful behavior** behavior with a specific goal, as opposed to aimless or random behavior. See GOAL-DIRECTED BEHAVIOR.

**purpose in life** the mental sense of a goal or aim in the process of living or in existence itself. This concept is of special significance in EXISTENTIAL PSYCHOTHERAPY, in which its development is considered to be central to the treatment of anxiety, depression, and related negative emotional states.

**purposeless hyperactivity** a symptom of certain brain or mental disorders manifest as prolonged periods of excessive activity that has no purpose.

**purposive accident** an apparent accident that in fact was caused deliberately. It may have been motivated by psychological factors, such as unacknowledged wishes or needs. Also called **intentional accident**. See PARAPRAXIS.

**purposive behaviorism** a cognitive theory of learning postulating that behavioral acts have a goal or purpose that selects and guides the behavioral sequence until the goal or purpose is attained. Purposive behaviorism incorporates the gestalt concepts of FIELD THEORY and contrasts with behavioral learning theories, which reduce behavior to smaller units of learned stimuli and responses. See also S–S LEARNING MODEL. [proposed by Edward C. TOLMAN]

**purposive psychology** an approach to psychology that makes the primary assumption that organisms usually have conscious goals that motivate and organize their behavior. See also HORMIC PSYCHOLOGY; PURPOSIVE BEHAVIORISM; TELEOLOGY.

**purposive sampling** a SAMPLING method that focuses on very specific characteristics of the units or individuals



chosen. For example, a researcher investigating a specific type of amnesia may select for study only those individuals who have specific lesions in their brains. Although the final subset of cases is extreme and not random, valuable information nonetheless may be obtained from their study. See **NONPROBABILITY SAMPLING**.

**purposivism** *n.* any approach that emphasizes goals or purposes to explain actions or behavior. See **PURPOSIVE BEHAVIORISM**.

**pursuitemeter** *n.* **1.** any instrument that measures the ability of a test participant to follow a moving target. **2.** an older term for a **PURSUIT ROTOR**.

**pursuit rotor** a device to test **VISUAL-MOTOR COORDINATION** that consists of a small target embedded in a disk. The participant attempts to keep a stylus above the target, which moves as the disk rotates at varying speeds.

**push-down stack** a model of memory that compares its storage procedures to stacks of cafeteria trays in spring-loaded compartments. New items in memory are like trays added to the top of the stack, with other items being pushed down to accommodate them. Access to memory items is only from the "top." The model originated in computing but is now often applied to **SHORT-TERM MEMORY** in humans.

**push model** a psychological theory emphasizing how negative experience impels a person to establish meaning or to set goals. Compare **PULL MODEL**.

**push switch** a single- or multiple-button switch that can be activated by direct pressure from almost any body part and is therefore operable by users with disabilities.

**putamen** *n.* a part of the lenticular nucleus in the **BASAL GANGLIA** of the brain. It receives input from the motor cortex and is involved in control of movements.

**putrid** *adj.* denoting one of the seven classes of odorants in the **STEREOCHEMICAL SMELL THEORY**.

**puzzle box** in experimental research, a box in which a nonhuman animal must manipulate some type of device, such as a latch, to escape from the box or to get a reward. It was originally used in 1898, in the form of the **Thorndike Puzzle Box** (a wooden box with slatted sides and a door that could be opened by the animal inside), by Edward L. **THORNDIKE** in studying animal learning and intelligence.

**p value** *n.* see **PROBABILITY LEVEL**.

**PVS** abbreviation for **PERSISTENT VEGETATIVE STATE**.

**PWS** abbreviation for **PRADER-WILLI SYNDROME**.

**pycnodysostosis (pyknodysostosis)** *n.* an autosomal recessive, lysosomal storage disease caused by mutation of the **CTSK** gene and characterized by moderately short stature (affected individuals rarely reach an adult height of 5 ft); increased bone density; underdeveloped fingertips with absent or small nails; delays in the closing of skull sutures; an abnormal collarbone (clavicle); and distinctive facial features, including a large head with a small face and chin, underdeveloped facial bones, a high forehead, and dental abnormalities.

**Pygmalion effect** a consequence or reaction in which the expectations of a leader or superior engender behavior from followers or subordinates that is consistent with these expectations: a form of **SELF-FULFILLING PROPHECY**. For example, raising manager expectations of the performance of subordinate employees has been found to enhance the per-

formance of those employees. Compare **UPWARD PYGMALION EFFECT**.

**pygmalionism** *n.* the act of falling in love with one's own creation. The term is derived from Greek mythology, in which Pygmalion fell in love with a statue of Aphrodite that he had sculpted.

**pygmyism** *n.* a constitutional hereditary anomaly consisting of a dwarfed but well-proportioned body, roughly equivalent to the primordial **nanosomia body type**. This body build is typical for certain groups of people, particularly in central Africa. Communities of similar small people have been described in myths and the literature of ancient Europe.

**pyknic type** a body type characterized by a short, thick-set, stocky physique. According to **KRETSCHMER TYPOLOGY**, such individuals tend to be jovial, extraverted, and subject to mood swings (in extreme cases, manic depressive). See also **CONSTITUTIONAL TYPE**.

**pyknodysostosis** *n.* see **PYCNODYSTOSIS**.

**pyknolepsy** *n.* see **CHILDHOOD ABSENCE EPILEPSY**.

**pyloric stenosis** see **STENOSIS**.

**pyr-** combining form see **PYRO-**.

**pyramid** *n.* a bulge on the front of the **MEDULLA OBLONGATA** where fibers of motor neurons from higher centers cross from one side of the brain to the opposite side of the spinal cord. See also **PYRAMIDAL TRACT**.

**pyramidal cell** a type of large neuron that has a roughly pyramid-shaped **CELL BODY** and is found in the cerebral cortex. See **CORTICAL LAYERS**.

**pyramidal tract** the primary pathway followed by motor neurons that originate in the motor area of the cortex, the premotor area, the somatosensory area, and the frontal and parietal lobes of the brain. Fibers of the pyramidal tract communicate with fibers supplying the peripheral muscles. Because of the contralateral relationship between left and right brain hemispheres and motor activity on the opposite sides of the body, pyramidal-tract fibers cross in the **PYRAMIDS** of the medulla oblongata. The pyramidal tract includes the **CORTICOSPINAL TRACT**, and the two terms are occasionally used synonymously. Also called **pyramidal motor system**; **pyramidal system**. See also **EXTRAPYRAMIDAL TRACT**.

**pyramidotomy** *n.* the surgical process of cutting the pyramidal (motor) tract in the brain.

**pyridostigmine** *n.* an **ANTICHOLINERGIC DRUG** used in the treatment of myasthenia gravis. U.S. trade name (among others): **Mestinon**.

**pyriform area (piriform area)** a pear-shaped region of the **RHINENCEPHALON**, at the base of the medial temporal lobe of the brain, that contains clumps of **STELLATE CELLS** and **PYRAMIDAL CELLS**. Part of the **OLFACTORY CORTEX**, it receives **OLFACTORY TRACTS** of the second order as well as input from the inferior temporal lobe and relays impulses to the **HIPPOCAMPAL FORMATION**. Also called **pyriform lobe**.

**pyro-** (**pyr-**) combining form **1.** fire or burning (e.g., **PYROMANIA**). **2.** fever (e.g., **PYROGEN**).

**pyrogen** *n.* any agent that causes an increase in body temperature. —**pyrogenic** *adj.*

**pyrolagnia** *n.* the arousal of sexual excitement by watch-

ing or setting large fires or conflagrations. Also called **erotic pyromania**.

**pyromania** *n.* an impulse-control disorder characterized by (a) repeated failure to resist impulses to set fires and watch them burn, without monetary, social, political, or

other motivations; (b) an extreme interest in fire and things associated with fire; and (c) a sense of increased tension before starting the fire and intense pleasure, gratification, or release while committing the act.

**p-zombie** short for philosophical ZOMBIE.

# Qq

**q** **1.** symbol for STUDENTIZED RANGE STATISTIC. **2.** symbol for the probability of failure in a BINARY TRIAL:  $q = 1 - p$ .

**Q** **1.** see COCHRAN Q TEST **2.** see YULE'S Q. **3.** symbol for a specific QUARTILE (e.g.,  $Q_1$ , first quartile;  $Q_3$ , third quartile).

**QALYs** acronym for QUALITY ADJUSTED LIFE YEARS.

**qat** *n.* see KHAT.

**Q data** questionnaire data: information about an individual gathered from the observations, judgments, and evaluations of that person as provided via subjective self-report inventories—and therefore also known as **S data** (self data)—or questionnaires. See also L DATA; O DATA; T DATA.

**qEEG** abbreviation for QUANTITATIVE ELECTROENCEPHALOGRAPH.

**Q factor analysis** see Q-TECHNIQUE FACTOR ANALYSIS.

**qi** *n.* see CHI.

**qigong** *n.* a Chinese health maintenance and self-healing practice that consists of coordination of specific breathing patterns with a variety of postures and body movements. Various forms are often taught as an auxiliary to Chinese martial arts.

**Q methodology** a set of research methods used to study how people think or feel about a topic. It includes, among other methods, Q-TECHNIQUE FACTOR ANALYSIS, which attempts to identify shared ways of thinking; and Q SORTS, in which participants are given statements about people and topics and asked to sort them into categories. Compare R METHODOLOGY.

**QoL-AD** abbreviation for QUALITY OF LIFE IN ALZHEIMER'S DISEASE SCALE.

**Q-Q plot** abbreviation for QUANTILE-QUANTILE PLOT.

**Q sort** a data-collection procedure, often used in personality measurement, in which a participant or independent rater sorts a broad set of stimuli into categories using a specific instruction set. The stimuli are often short descriptive statements (e.g., of personal traits) printed on cards. Examples of the instruction set are "describe yourself," "describe this child," and "describe your friend." In the classic or **structured Q sort**, raters are constrained to use a predetermined number of stimuli in each category. Often, general categories are used to reflect the NORMAL DISTRIBUTION, with raters assigning fewer stimuli to the extreme categories and many more stimuli to the middle categories. See Q METHODOLOGY.

**QT** abbreviation for QUICK TEST.

**Q-technique factor analysis** a type of FACTOR ANALYSIS used to understand the major dimensions or "types" of people by identifying how they perceive different variables. Instead of describing how variables group together, as in R-TECHNIQUE FACTOR ANALYSIS, this approach examines how people group together, with a correlation of people across a broad range of variables. For example, types of students could be identified based on how participants describe themselves academically (e.g., "hard working," "procrasti-

nating"); individual descriptors of academic behavior (e.g., "Plans projects in advance of due dates") would have FACTOR LOADINGS on each of the underlying person factors. Also called **inverse factor analysis**; **Q factor analysis**; **Q-technique factoring**. Compare P-TECHNIQUE FACTOR ANALYSIS.

**Q test** see COCHRAN Q TEST.

**QTL** abbreviation for QUANTITATIVE TRAIT LOCI.

**Quaalude** *n.* a trade name for METHAQUALONE.

**quack** **1.** *n.* an unqualified person who makes false claims about, or misrepresents his or her ability or credentials in, medical, mental, or behavioral diagnosis and treatment. **2.** *adj.* describing a treatment for which false or exaggerated claims are made. —**quackery** *n.*

**quadrant** *n.* **1.** one of four divisions of a two-dimensional  $x$ - $y$  plot of psychological variables. The quadrants correspond to positive scores on both dimensions (upper right corner of plot), negative scores on both dimensions (lower left corner of plot), and positive scores on one dimension and negative scores on the other dimension (upper left corner and lower right corner, respectively, of the plot). **2.** one of four divisions of the visual field.

**quadrantanopia** *n.* loss of vision in one fourth, or one quadrant, of the visual field. **Homonymous quadrantanopia** is the loss of vision in both (upper or lower) quadrants of the same half (right or left) of the visual field of each eye (e.g., left upper quadrantanopia); it is caused by postchiasmatic brain injury (see POSTCHIASMATIC VISUAL DEFICIT). Also called **quadrantopia**; **quadrantanopsia**; **quadrantic hemianopia**.

**quadrant sampling** a method for selecting units of analysis (e.g., participants, organizations) from different areas of a space. The space is divided into four sections and units are drawn from each. In psychology, units may be drawn from psychological space, such as personality variables that are thought of as arrayed in two-dimensional space. See QUADRANT.

**quadrature** *n.* the numerical computation of an integral of a function, either by traditional rules or by an adaptive process involving approximation. It is used extensively during estimation in modeling approaches, such as ITEM RESPONSE THEORY and GENERALIZED LINEAR MODELS.

**quadruparesis** *n.* muscle weakness or partial paralysis in all four limbs, associated with neurological injury or disorder. Also called **tetraparesis**.

**quadruplegia** *n.* paralysis of all four limbs, resulting from damage to the spinal cord or brain. Also called **tetraplegia**. —**quadruplegic** *adj.*

**qualia** *pl. n. (sing. quale)* **1.** characteristics or qualities that determine the nature of a mental experience (sensation or perception) and make it distinguishable from other such experiences, so that, for example, the experiencer differentiates between the sensations of heat and cold. Qualia bear some conceptual relationship to the empiricist notion of PRIMARY QUALITIES and SECONDARY QUALITIES; in some

systems, however, they take on the quality of basic or fundamental units of experience. Other thinkers, primarily those in the materialist tradition, reject the notion of qualia as an unnecessary construct with little explanatory value. **2.** the phenomenal, conscious states or feelings specific to each emotion. The ineffable phenomenal states of anger, happiness, fear, sadness, and so on are qualia of AFFECT.

**qualitative** *adj.* referring to a variable, study, or analysis that involves a method of inquiry based on descriptive data without the use of numbers. Compare QUANTITATIVE.

**qualitative analysis** the investigation of open-ended material and narratives by researchers or raters who describe dominant themes that emerge in the data. In many cases, specialized computer programs are used to identify these themes with researcher-provided search terms. A major component of describing the data is trying to understand the reasons behind the observed themes. Compare QUANTITATIVE ANALYSIS.

**qualitative data** information that is not expressed numerically, such as descriptions of behavior, thoughts, attitudes, and experiences. If desired, qualitative data can often be expressed quantitatively through CODIFICATION. Compare QUANTITATIVE DATA.

**qualitative evaluation** an evaluation method that yields narratives gathered primarily from unstructured methods of data collection, naturalistic observation, and existing records. As an initial or divergent phase of PROGRAM EVALUATION, it seeks to allow maximum opportunity to frame EVALUATION OBJECTIVES. This approach is usually associated with a GOAL-FREE EVALUATION rather than a GOAL-BASED EVALUATION. Compare QUANTITATIVE EVALUATION.

**qualitative observation** a formal description of a phenomenon that takes into account the context in which that phenomenon occurs but does not rely on numbers in the description.

**qualitative research** a method of research that produces descriptive (non-numerical) data, such as observations of behavior or personal accounts of experiences. The goal of gathering this QUALITATIVE DATA is to examine how individuals can perceive the world from different vantage points. A variety of techniques are subsumed under qualitative research, including CONTENT ANALYSES of narratives, in-depth INTERVIEWS, FOCUS GROUPS, PARTICIPANT OBSERVATION, and CASE STUDIES, often conducted in naturalistic settings. Also called **qualitative design; qualitative inquiry; qualitative method; qualitative study**. Compare QUANTITATIVE RESEARCH.

**qualitative variable** a descriptive characteristic or attribute, that is, one that cannot be numerically ordered. Examples are gender, eye color, and preferred sport. Compare QUANTITATIVE VARIABLE.

**quality** *n.* **1.** a characteristic or feature of something, be it physical or abstract. See PRIMARY QUALITY; SECONDARY QUALITY. See also QUALIA. **2.** the essential character or nature of something.

**quality adjusted life years (QALYs)** a measure that combines the quantity of life, expressed in terms of survival or life expectancy, with the quality of life. The value of a year of perfect health is taken as 1; a year of ill health is worth less than 1; death is taken as 0. The measure provides a method to assess the benefits to be gained from medical procedures and interventions.

**quality adjusted survival analysis** in controlled clinical trials, a type of SURVIVAL ANALYSIS that not only predicts time to an event (e.g., number of years to death, time to relapse) but also recognizes aspects of the treatment that affect a patient's quality of life. For example, the analysis would identify a treatment condition (e.g., introduction of a new drug) that might lead to longer but much lower quality of life for the patient.

**quality assurance** in health administration or other areas of service delivery, a systematic process that is used to monitor and provide continuous improvement in the quality of health care services. It involves not only evaluating the services in terms of effectiveness, appropriateness, and acceptability but also offering feedback and implementing solutions to correct any identified deficiencies and assessing the results.

**quality circle** a form of PARTICIPATIVE MANAGEMENT in which a small group of employees are given the task of improving the quality and reducing the costs of the goods or services produced in their jobs and resolving any other production and productivity problems. Employees in a quality circle are typically given autonomy in how they approach this task and may be trained in STATISTICAL PROCESS CONTROL. See also SCANLON PLAN.

**quality control** processes associated with research, production, or services that are designed to reduce the number of defective measurements and products.

**quality of care** the extent to which health services are consistent with professional standards and increase the likelihood of desired outcomes.

**quality of life** the extent to which a person obtains satisfaction from life. The following are important for a good quality of life: emotional, material, and physical well-being; engagement in interpersonal relations; opportunities for personal (e.g., skill) development; exercising rights and making self-determining lifestyle choices; and participation in society. Enhancing quality of life is a particular concern for those with chronic disease or developmental and other disabilities, for those undergoing medical or psychological treatment, and for the aged.

**Quality of Life in Alzheimer's Disease Scale (QoL-AD)** a 13-item self-report questionnaire in which older adults with Alzheimer's disease or their caregivers rate, on a scale of 1 (*poor*) to 4 (*excellent*), the patients' quality of life along several dimensions: their physical health; energy level; mood; living situation; memory; relationships with family, spouse, and friends; feelings about themselves; ability to do chores; ability to have fun; concerns about their financial situation; and life as a whole. Total scores range from 13 to 52. [developed in the 1990s by U.S. psychologist Rebecca G. Logsdon and colleagues]

**quality of worklife (QWL)** the extent to which a person obtains satisfaction from his or her job and feels a sense of ORGANIZATIONAL COMMITMENT. Several factors are important for a good quality of worklife, including salary, benefits, safety, and efficiency, as well as variety and challenge, responsibility, contribution, and recognition.

**quality weighting** the WEIGHTING of each of the studies in a META-ANALYSIS by the quality of its design, execution, and analysis.

**quantal hypothesis (quantal theory)** see NEURAL QUANTUM THEORY.

**quantification** *n.* the process of expressing a concept or

variable in numerical form, which may aid in analysis and understanding.

**quantifier** *n.* in linguistics, a DETERMINER used to express the notion of quantity, such as *many*, *most*, *some*, or *all*.

**quantile** *n.* a value in a series of values in ascending order below which a given percentage of values lies; for example, a 50% quantile (also called a MEDIAN) is the point at which 50% of the values fall below that value (and 50% above). Other types of quantile are QUANTILES, dividing the series into four equal-sized groups; DECILES, dividing it into 10 groups; and PERCENTILES (or centiles), dividing it into 100 groups. Also called **fractile**.

**quantile–quantile plot (Q–Q plot)** a plot of the QUANTILES of one set of data against the quantiles of a second set, used to determine if the two data sets follow a common distribution. A 45° line on the plot shows where a perfect match of distributions would be.

**quantitative** *adj.* involving the use of a numerical measurement system to analyze data. Compare QUALITATIVE.

**quantitative analysis** the investigation of data empirically using numerical variables. Quantitative analysis includes both DESCRIPTIVE STATISTICS—such as summaries of MEANS and STANDARD DEVIATIONS of variables—and INFERENCE STATISTICS—such as ANALYSIS OF VARIANCE, REGRESSION ANALYSIS, FACTOR ANALYSIS, and HIERARCHICAL LINEAR MODELS. Compare QUALITATIVE ANALYSIS.

**quantitative data** information expressed numerically, such as test scores or measurements of length or width. These data may or may not have a real zero, but they have order and often equal intervals. Compare QUALITATIVE DATA.

**quantitative electroencephalograph (qEEG)** a version of the electroencephalograph that generates numerical results that can be statistically analyzed. See ELECTROENCEPHALOGRAPHY.

**quantitative evaluation** an evaluation method that yields numerical indices gathered primarily from formal (objective) methods of data collection, systematic and controlled observation, and a prescribed research design. As a final or convergent phase of PROGRAM EVALUATION, it seeks to provide precise answers to already defined EVALUATION OBJECTIVES. This approach is usually associated with a GOAL-BASED EVALUATION rather than a GOAL-FREE EVALUATION. Compare QUALITATIVE EVALUATION.

**quantitative psychology** the study of methods and techniques for the measurement of human attributes, the statistical and mathematical modeling of psychological processes, the design of research studies, and the analysis of psychological data. Researchers in this area develop new methodologies and evaluate existing methodologies under particular conditions (e.g., with small samples).

**quantitative research** a method of research that relies on measuring variables using a numerical system, analyzing these measurements using any of a variety of statistical models, and reporting relationships and associations among the studied variables. For example, these variables may be test scores or measurements of reaction time. The goal of gathering this QUANTITATIVE DATA is to understand, describe, and predict the nature of a phenomenon, particularly through the development of models and theories. Quantitative research techniques include experiments and surveys. Also called **quantitative design**; **quantita-**

**tive inquiry**; **quantitative method**; **quantitative study**. Compare QUALITATIVE RESEARCH.

**quantitative score** a number that represents the number of correctly fulfilled requirements for a given test or class.

**quantitative semantics** see CONTENT ANALYSIS.

**quantitative trait loci (QTL)** locations in the GENOME containing a number of genes that contribute to variation in a given quantitative (continuously distributed) trait, such as height.

**quantitative variable** a characteristic or attribute that can be measured numerically using a score obtained from any of a variety of data sources. Examples are age, height, and weight. Compare QUALITATIVE VARIABLE.

**quantum** *n.* (*pl.* **quanta**) **1.** in physics, a unit of radiant energy. **2.** in neuroscience, the minimal amount of neurotransmitter released by a neuron at a given time.

**quantum mind** an extension of NEURAL QUANTUM THEORY proposing that quantum-level neuronal events are a basic mechanism of consciousness. Also called **quantum hypothesis of consciousness**.

**quantum theory** see NEURAL QUANTUM THEORY.

**quartile** *n.* one of the three values in a series of values that divide it into equal-sized fourths. For example, the **first** (or **lower**) **quartile** of a distribution is the data value below which are the lowest 25% of scores, the **second quartile** is the data value below which are 50% of scores, and the **third** (or **upper**) **quartile** is the data value below which are 75% of scores (or, conversely, above which are 25% of scores). These values provide information to researchers about the relative spread of the distribution. See Q; QUANTILE.

**quartile deviation** a measure of DISPERSION that is defined as the value halfway between the first and third quartiles (i.e., half the INTERQUARTILE RANGE). Also called **semi-interquartile range**.

**quartimax rotation** in FACTOR ANALYSIS, an ORTHOGONAL ROTATION that maximizes the variance across the rows of the factor matrix by raising the loadings to the fourth power; the effect is to make large loadings especially large and small loadings especially small. The objective is to increase the interpretability of a factor solution by satisfying the SIMPLE STRUCTURE ideal.

**quasi-experimental control group** in a QUASI-EXPERIMENTAL DESIGN, any group of participants who are assigned to a condition in which the treatment is not introduced. These individuals will receive the standard of care, receive a placebo, or participate in an activity that involves them in the study but does not include the treatment in any way.

**quasi-experimental design** an experimental design in which assignment of participants to an EXPERIMENTAL GROUP or to a CONTROL GROUP cannot be made at random for either practical or ethical reasons; this is usually the case in FIELD RESEARCH. Assignment of participants to conditions is usually based on self-selection (e.g., employees who have chosen to work at a particular plant) or selection by an administrator (e.g., children are assigned to particular classrooms by a superintendent of schools). Such designs introduce a set of assumptions or threats to INTERNAL VALIDITY that must be acknowledged by the researcher when interpreting study findings. A study using this design

is called a **quasi-experiment**. Examples include studies that investigate the responses of large groups to natural disasters or widespread changes in social policy.

**quasi-experimental research** research in which the investigator cannot randomly assign units or participants to conditions, cannot generally control or manipulate the INDEPENDENT VARIABLE, and cannot limit the influence of extraneous variables. FIELD RESEARCH typically takes the form of quasi-experimental research. Also called **nonexperimental research**. See QUASI-EXPERIMENTAL DESIGN.

**quasi-*F* ratio** in ANALYSIS OF VARIANCE and REGRESSION ANALYSIS, a substitute for the *f* RATIO that can sometimes be obtained when the denominators for an exact *F* ratio cannot be completed. The quasi-*F* ratio is obtained by determining the MEAN SQUARED ERROR using certain estimated components of variation when these cannot be calculated directly.

**quasigroup** *n.* a collective with some, but not all, of the defining features of a true GROUP.

**quasi-independence** *n.* in a CONTINGENCY TABLE, the situation in which only a subset of entries or frequencies are independent or uninfluenced by one another. Entries may not be independent for a variety of reasons: They may be invalid, missing, or not counted in the analysis.

**quasi-independent variable** in experimental design, any of the personal attributes, traits, or behaviors that are inseparable from an individual and cannot reasonably be manipulated. These include gender, age, and ethnicity. Such attributes may be modeled and treated as statistically independent but are not subject to RANDOM ASSIGNMENT, as are INDEPENDENT VARIABLES.

**quasi-interval scale** a rating scale that classifies responses by using ordered options but that lacks equal distances between all scale points. For example, some response items could show equal distances between scale points, whereas for other items respondents could have a difficult time differentiating among options, leading to compression or stretching between scale points. See INTERVAL SCALE.

**quasi-likelihood function** a formula used to obtain estimates for count or binary data that show more DISPERSION than the statistical model can handle. An advantage of quasi-likelihood models is that they permit an increased flexibility in the data types and research situations to which they may be applied. A limitation is that the function does not derive from a known population distribution.

**quasineed** *n.* in the social psychology of Kurt LEWIN, a tension state that initiates goal-directed activity and that has an origin in intent or purpose rather than in a biological deficit.

**quasi-observation** *n.* **1.** the process of collecting data about a person from a close source, rather than directly from the subject. An example is asking an individual to report on the job satisfaction of his or her partner. **2.** the use of mechanical means, such as video surveillance or audio-taping, to record behaviors as a substitute for real-time observation and questioning by a researcher. In marketing research, an example would be the use of surveillance cameras to monitor shopper behavior in stores. This would cost less than paying a trained researcher to observe and interview shoppers in situ. There is also the advantage that such data can be viewed, stored, and analyzed at the researcher's convenience.

**quasirandom** *adj.* see PSEUDORANDOM.

**quasirandom sampling** see SYSTEMATIC SAMPLING.

**quasi-vegetative state** see MINIMALLY CONSCIOUS STATE.

**quaternity** *n.* Carl JUNG's fourfold concept of personality, in which there are four functions of the ego: feeling, thinking, intuiting, and sensing (see FUNCTIONAL TYPES). For Jung, the quaternity is an ARCHETYPE exemplified in myriad ways, such as the four points of a compass and the four points of a cross.

**quazepam** *n.* a BENZODIAZEPINE used as a HYPNOTIC agent. It is of medium potency and is highly lipid soluble, enabling rapid penetration of the BLOOD-BRAIN BARRIER and resulting in rapid onset of effects. Because its metabolic products are eliminated slowly, quazepam may accumulate in the body, leading to unwanted daytime sedation. U.S. trade name: **Doral**.

**queer** *adj., n.* controversial slang, in the main pejorative, referring to gays and lesbians or relating to homosexual orientation. The original and still common use of the word, to describe anything that is odd or strange, was extended to refer to gays in the late 19th and throughout much of the 20th century, when it acquired a predominantly negative connotation. During the late 1960s and onward (see SEXUAL REVOLUTION), it was appropriated by some members within the gay community as a term of identification that carried no negative connotation and, indeed, became a label of pride and self-respect. This usage is not embraced, however, by all members of the gay community.

**queer rights movement** see GAY LIBERATION.

**querulent** *adj.* quarrelsome, complaining, irritable, and suspicious.

**questionnaire** *n.* a set of questions or other prompts used to obtain information from a respondent about a topic of interest, such as background characteristics, attitudes, behaviors, personality, ability, or other attributes. A questionnaire may be administered with pen and paper, in a face-to-face interview, or via interaction between the respondent and a computer or website.

**quetiapine** *n.* an ATYPICAL ANTIPSYCHOTIC used for the management of psychosis and schizophrenia. As with conventional antipsychotics, its therapeutic effects are in part related to its ability to block D2 dopamine receptors (see DOPAMINE-RECEPTOR ANTAGONIST); however, it differs from the older agents in its ability to also block 5-HT<sub>2</sub> SEROTONIN RECEPTORS. It is also approved for treatment of bipolar disorder and (in its extended-release formulation) as an adjunct to antidepressant drugs for unipolar depression. Sedation is a common adverse effect; thyroid dysfunction, weight gain, and ELECTROCARDIOGRAPHIC EFFECTS are more rarely observed. U.S. trade name: **Seroquel**.

**queue** *n.* a file of people who are waiting for some service, commodity, or opportunity. Although the members of the queue are often strangers who will likely not meet again, they nonetheless comply with social norms that determine the order in which members will receive service.

**quick-and-dirty** *adj.* describing a research design or data analysis that is admitted to be informal and imperfect. The researcher who adopts such an approach recognizes that there is a more refined way to set up the experiment or to analyze the findings. In research, a quick-and-dirty approach is more informal than a PILOT STUDY; in data analy-

sis, it is regarded as a first peek at data from a specific analysis.

**Quick Test (QT)** a 50-item intelligence test used for screening purposes and for individuals with severe disabilities who may respond to test items by pointing or nodding without using words. Participants are presented with a set of four black-and-white drawings and must indicate which one best represents a target word. The words vary from *easy* to *hard*, and each has an assigned approximate difficulty level. [developed in 1962 by U.S. psychologists Robert Bruce Ammons (1920–1999) and Carol H. Ammons (1927– )]

**quick trajectory** see TRAJECTORIES OF DYING.

**quid pro quo** an advantage given in return for something done or promised (from Latin, literally: “one thing for another”). The phrase has come to be associated with a form of SEXUAL HARASSMENT in which sexual demands are made with the explicit or implicit suggestion that compliance will have positive consequences (e.g., a job promotion), whereas failure to comply could have the opposite effect (e.g., termination of employment).

**Quincke's disease (Quincke's edema)** see ANGIOEDEMA. [Heinrich Irenaeus **Quincke** (1842–1922), German physician]

**Quinian bootstrapping (Quinean bootstrapping)** a theory that humans build complex concepts out of primitive ones through a BOOTSTRAPPING process. According to this idea, infants learn conceptual symbols separately and later relate these symbols to one another, which leads them to infer larger concepts. For instance, young children eventually understand that numbers match up to the sequentially occurring words *one*, *two*, *three*, and so on, and this allows them to make the conceptual leap to understanding that numbers have a sequential order that constitutes counting. In time, these concepts become robust enough to

allow comprehension of a variety of complex phenomena. [coined by U.S. developmental psychologist Susan E. Carey (1942– ) after U.S. philosopher Willard Van Orman **Quine** (1908–2000)]

**quintile** *n.* one of four values in a score distribution that divides it into five equal parts. For example, the first quintile of a distribution is the value below which are the lowest 20% of scores. See QUANTILE.

**quota control** in survey methodology, an approach that imposes a limit on the number of respondents that are obtained either in the total sample or in substantively meaningful subgroups, such as those defined by gender or ethnicity. The approach is efficient because it does not over-use resources, such as respondent time or good will, by obtaining more individuals than are needed for a study. It also allows a researcher to obtain a desired balance of sample sizes across groups for statistical testing. Most computerized surveys include an automatic quota control function.

**quota sampling** a method of forming a sample in which a prespecified number of individuals with certain background characteristics, such as a particular age, race, ethnicity, sex, or education, are selected for inclusion. Often, participants are recruited as they arrive; once the quota for a given demographic group is filled, the researcher stops recruiting subjects from that group. A researcher who uses this approach can obtain a final study sample that has the same proportional characteristics as the target population, enabling statistical testing to be performed on a subset of cases that is appropriately representative of the larger group of interest. See DELIBERATE SAMPLING. See also QUOTA CONTROL.

**quotient hypothesis** an adaptation of WEBER'S LAW suggesting that the quotients or ratios of two successive DIFFERENCE THRESHOLDS in a given sensory series are equal.

**QWL** abbreviation for QUALITY OF WORKLIFE.

# Rr

**r** symbol for SAMPLE CORRELATION COEFFICIENT, which is typically in the form of a PRODUCT-MOMENT CORRELATION COEFFICIENT.

**r<sup>2</sup>** symbol for COEFFICIENT OF DETERMINATION.

**R** abbreviation for reasoning. See PRIMARY ABILITY.

**R** symbol for MULTIPLE CORRELATION COEFFICIENT.

**R<sup>2</sup>** symbol for COEFFICIENT OF MULTIPLE DETERMINATION.

**R<sup>2</sup><sub>adj</sub>** symbol for ADJUSTED R<sup>2</sup>.

**rabbit-duck figure** an ambiguous figure that appears to be either the head of a duck or the head of a rabbit, but never both simultaneously.

**rabies** *n.* an infectious viral disease of the central nervous system that can be transmitted to humans, usually through the bite of an infected animal (e.g., raccoon). It causes pain, fever, excessive salivation, agitation, and paralysis or contractions of muscles, particularly those of the respiratory tract. Aversion to water is a major symptom, especially in later stages of the disease, due to painful spasms associated with swallowing. Unless vaccine is administered before symptoms appear, death occurs within 2 to 10 days. Rabies was previously called **hydrophobia**.

**race** *n.* a socially defined concept sometimes used to designate a portion, or “subdivision,” of the human population with common physical characteristics, ancestry, or language. The term is also loosely applied to geographic, cultural, religious, or national groups. The significance often accorded to racial categories might suggest that such groups are objectively defined and homogeneous; however, there is much heterogeneity within categories, and the categories themselves differ across cultures. Moreover, self-reported race frequently varies owing to changing social contexts and an individual’s possible identification with more than one race. See also ETHNIC IDENTITY; RACISM. —**racial** *adj.*

**race norming** in personnel selection, the use of different cutoff scores for applicants from different racial groups. Race norming has been declared illegal in U.S. federal civil rights legislation. See also BANDING.

**rachischisis** *n.* a congenital fissure of the spinal column, as in SPINA BIFIDA.

**racial and ethnic minority psychology** see ETHNIC PSYCHOLOGY.

**racial discrimination** the differential treatment of individuals because of their membership in a particular racial group. Discrimination is in most cases the behavioral manifestation of PREJUDICE and therefore involves unfair, negative, hostile, or injurious treatment. See also RACISM.

**racial identity** an individual’s sense of being defined, in part, by membership in a particular racial group. The strength of this sense depends on the extent to which an individual has processed and internalized the psychological, sociopolitical, cultural, and other contextual factors related to membership in the group. Given the socially constructed nature of racial categories, racial identifica-

tions can change over time in different contexts. For example, a mixed-race person might identify as mixed race in one context and Black in another. See also ETHNIC IDENTITY.

**racial memory** thought patterns, feelings, and traces of experiences held to be transmitted from generation to generation and to have an influence on individual minds and behavior. Carl JUNG and Sigmund FREUD both embraced the concept of a phylogenetic heritage (see PHYLOGENY) but focused on different examples. Freud cited religious rituals designed to relieve feelings of anxiety and guilt, which he explained in terms of the OEDIPUS COMPLEX and his PRIMAL-HORDE THEORY. Jung cited images, symbols, and personifications that spontaneously appear in different cultures, which he explained in terms of the ARCHETYPES of the COLLECTIVE UNCONSCIOUS. Also called **racial unconscious**.

**racial prejudice** see RACISM.

**racial socialization** the transmission by parents, caregivers, and other influential people of information, values, and perspectives about their race to children of their race, with the goals of instilling pride in their racial heritage and providing strategies for coping with racism, discrimination, and other barriers to success in mainstream society. This term is usually used in research with African Americans. See also ETHNIC SOCIALIZATION.

**racial unconscious** see RACIAL MEMORY.

**racism** *n.* a form of PREJUDICE that assumes that the members of racial categories have distinctive characteristics and that these differences result in some racial groups being inferior to others. Racism generally includes negative emotional reactions to members of the group, acceptance of NEGATIVE STEREOTYPES, and RACIAL DISCRIMINATION against individuals; in some cases it leads to violence. See AVERSIVE RACISM; EVERYDAY RACISM; INSTITUTIONALIZED RACISM; MODERN RACISM. See also ETHNOCENTRISM. —**racist** *adj., n.*

**radex theory of intelligence** a PSYCHOMETRIC THEORY OF INTELLIGENCE postulating that the organization of mental abilities forms a radial order of complexity (or **radex**). The radex comprises two parts: (a) a simplex, which is the relative distance from the center of a circle, with abilities that are closer to the center of the circle therefore being closer to the construct of general intelligence, which is at dead center; and (b) a circumplex, which is the relative distance around the circle, with abilities that are more highly correlated therefore being located closer to each other. Thus, the system identifies abilities through a set of polar coordinates (rather than the Cartesian coordinates used by other systems). [proposed by U.S. psychologist Louis Guttman (1916–1997)]

**radial glia** a type of nonneuronal cell (GLIA) that forms early in development, spanning the width of the emerging cerebral hemispheres to guide migrating neurons.

**radial maze** a type of maze that has a central starting point with several arms (typically six to eight) extending from the center. A nonhuman animal might be required to



learn to find food only in particular arms or to search systematically through each arm without entering the same arm twice. Radial mazes have been used extensively to study SPATIAL MEMORY and learning. See also SUNBURST MAZE.

**radial nerve** the combined sensory and motor nerve that innervates the medial (inner) side of the forearm and hand, including the thumb. Its fibers are derived from the fifth through eighth cervical SPINAL NERVES and the first thoracic spinal nerve, and they pass through the BRACHIAL PLEXUS.

**radiation** *n.* **1.** energy transmitted in the form of waves, such as electromagnetic radiation (e.g., heat, light, microwaves, short radio waves, ultraviolet rays, X-rays), or in the form of a stream of nuclear particles (e.g., alpha particles, beta particles, gamma rays, electrons, neutrons, protons). Such waves or particles are used for diagnostic, therapeutic, or experimental purposes (see RADIATION THERAPY). **2.** in neuroscience, the spread of excitation to adjacent neurons. **3.** more generally, the outward spread of something from a central point.

**radiation necrosis** tissue death due to exposure to radiation.

**radiation therapy** the use of radiation (e.g., X-rays) in the treatment of diseases. Radiotherapy is used mainly in the destruction of cancer cells by implanting RADIOACTIVE ISOTOPES in the body of the patient or delivering a known dose of radiation to a specific tissue area. Side effects may include fatigue, soreness and redness of the irradiated area, nausea and vomiting, loss of appetite, and a decreased white blood cell count. Also called **radiotherapy**.

**radical behaviorism** the view that behavior, rather than consciousness and its contents, should be the proper topic for study in psychological science. This term is often used to distinguish classical BEHAVIORISM, as originally formulated in 1913 by John B. WATSON, from more moderate forms of NEOBEHAVIORISM. However, it has evolved to denote as well the form of behaviorism later proposed by B. F. SKINNER, which emphasizes the importance of reinforcement and its relationship to behavior (i.e., the environmental determinants of behavior). Skinner conceded the existence of private events, such as thinking, feeling, and imagining, but believed them to be irrelevant, viewing them not as causes of behavior but as behavior in need of explanation or as private stimuli that function according to the same laws as public stimuli. See BEHAVIOR ANALYSIS; DESCRIPTIVE BEHAVIORISM.

**radical empiricism** **1.** a metaphysical position propounded by William JAMES in 1904 holding that reality consists not of subject and object (mind and matter) but of pure experience. The position is therefore one of NEUTRAL MONISM. **2.** the associated position, also propounded by William James, that the whole of human experience is the legitimate domain for psychological investigation. This is in contrast to the tendency of certain schools of psychology, such as STRUCTURALISM, to define the subject much more narrowly. The methodological implication of radical empiricism is that psychology should not be restricted to a single method, but that it should employ methods appropriate to the study of any phenomenon that forms part of human experience. **3.** the general position that (a) empirical methods provide the only reliable sources of knowledge and (b) only propositions that can be tested by such methods have real meaning. See EMPIRICISM; LOGICAL POSITIVISM; POSITIVISM.

**radical feminism** a branch of feminist thought that holds as its main tenets that (a) the oppression of women is pandemic, the most fundamental of all historical instances of oppression, and thus a paradigm case of oppression; (b) because the oppression of women is systemic and ubiquitous, sweeping social change is the only remedy radical enough to overcome it; (c) traditional gender roles are constraining to both sexes and ought to be overcome; (d) biology should not determine the destiny or shape the lives of women; and (e) consciousness raising, in which women come to see their personal problems as symptomatic, is the beginning of liberation. These tenets have been adopted in one form or another by many strains of FEMINISM.

**radical hysterectomy** see HYSTERECTOMY.

**radicalism** *n.* **1.** any position that goes to the heart of an idea or issue. A radical criticism is one that strikes at the most fundamental aspect of its target; a radical theory is one that challenges the fundamental assumptions and implications of rival theories. **2.** a political or social position that calls for extreme or fundamental change to remedy a perceived problem. Compare REFORMISM. —**radical** *adj.*

**radical therapy** any clinical intervention that focuses on the harmful psychological effects of social problems on individuals and that encourages individuals to help themselves by changing society. This approach was actively advanced by some psychologists and psychiatrists in the 1970s and 1980s.

**radiculitis** *n.* inflammation of a SPINAL ROOT, particularly the portion between the spinal cord and the intervertebral canal. Symptoms commonly include pain or weakness or loss of sensation in the part of the body served by the affected spinal nerve.

**radiculopathy** *n.* any disorder of a SPINAL ROOT. Radiculopathies are often due to vertebrae compressing the nerve roots, as in the condition popularly known as SLIPPED DISK.

**radioactive isotope** an isotope of a chemical element that emits radiation during its decay to a stable form. Different isotopes of an element all have the same number of nuclear protons but different numbers of neutrons. The radiation emitted by a radioactive isotope consists of alpha or beta particles or gamma rays, which are produced as the isotope decays into simpler atoms and loses energy while gaining stability. Radioactive isotopes are widely used in diagnostic, research, and therapeutic techniques; they affect photographic film, produce an electric charge in the surrounding air, produce fluorescence with certain other substances, and have the ability to destroy or alter cells or microorganisms. Also called **radioisotope**.

**radioactive tracer** a chemical compound labeled with a RADIOACTIVE ISOTOPE, such as <sup>45</sup>Ca (calcium) or <sup>14</sup>C (carbon), so that its metabolic pathway can be traced through body tissues. Radioactive tracers may be used for diagnostic, therapeutic, or research purposes. For example, in tobacco research, nicotine molecules can be tagged with radioactive tracers, and the path of the alkaloid can be traced through the lungs and bloodstream.

**radiography** *n.* the technique of producing negative-image film records (**radiographs** or **radiograms**) using radiation, usually X-rays or gamma rays. It is widely used as a diagnostic aid. See also RADIOLOGY. —**radiographer** *n.* —**radiographic** *adj.*

**radioimmunoassay (RIA)** *n.* an immunological technique to measure the concentration of a substance of in-

terest (e.g., a hormone) in a sample of blood or a tissue. A mixture of the substance and a form of the substance tagged with a RADIOACTIVE ISOTOPE are allowed to react with an antibody specific to that substance. The amount of radioactivity that is bound by the antibody inversely reflects the amount of substance in the sample: The greater the concentration of the substance in the sample, the less radioactivity will be bound.

**radioisotope** *n.* see RADIOACTIVE ISOTOPE.

**radiology** *n.* the medical discipline or specialty in which radiographic imaging techniques (see RADIOGRAPHY) are used to diagnose disease (diagnostic radiology) and radioactive substances and other forms of radiation are used to treat disease (therapeutic radiology). The latter is more commonly referred to as RADIATION THERAPY. —**radiological** *adj.* —**radiologist** *n.*

**radiotherapy** *n.* see RADIATION THERAPY.

**RAE** abbreviation for ROTATIONAL AFTEREFFECT.

**rage** *n.* intense, typically uncontrolled anger. It is usually differentiated from HOSTILITY in that it is not necessarily accompanied by destructive actions but rather by excessive expressions. In nonhuman animals, rage appears to be a late stage of AGGRESSION when normal deterrents to physical attack, such as SUBMISSIVE SIGNALS, are no longer effective. It generally includes rapid respiration; thrusting and jerking of limbs; and clawing, biting, and snarling.

**rage disorder** any disturbance characterized by one or more episodes of extreme anger and aggression, such as any clinical disorder in which episodes of rage are a primary symptom (e.g., INTERMITTENT EXPLOSIVE DISORDER).

**railway lines illusion** see PONZO ILLUSION.

**railway spine** see ERICHSEN'S DISEASE.

**raloxifene** see ANTITESTOSTERONE.

**rami communicantes** the nerve fibers that connect the ganglia of the SYMPATHETIC CHAIN to spinal nerves. They include both the gray rami communicantes (see GRAY RAMUS) and the WHITE RAMI COMMUNICANTES.

**ramp movement** a slow, sustained movement that is thought to be generated in the BASAL GANGLIA. Also called **smooth movement**.

**ramus** *n.* (*pl.* **rami**) **1.** a branch of a blood vessel or a nerve. **2.** any of the large branches of a SPINAL NERVE after it emerges from the spinal column, notably the anteriorly directed **ventral ramus** and the posteriorly directed **dorsal ramus**. These distribute motor and sensory nerve fibers to other, smaller nerves. **3.** any of the short nerve branches that arise from the ventral ramus and communicate with sympathetic ganglia (see RAMI COMMUNICANTES).

**Rana pipiens** a species of frog used in studies of neurophysiology and neuroanatomy.

**random** *adj.* **1.** without order or predictability. **2.** determined by chance alone, as in RANDOM SAMPLING or a RANDOM ERROR.

**random activity** behavior that has no apparent goal or specific eliciting stimulus but may have an intrinsic purpose.

**random assignment** in experimental design, the assignment of participants or units to the different conditions of an experiment entirely at random, so that each

unit or participant has an equal likelihood of being assigned to any particular condition. In clinical trials, this decreases the CONFOUNDING of the treatment factor with other factors by making the treatment and control groups approximately comparable in all respects except for the treatment. Also called **random allocation**; **randomization**. See also RANDOMIZED DESIGN.

**random classification** see IDIOSYNCRATIC CLASSIFICATION.

**random control** a control condition for CLASSICAL CONDITIONING in which the conditioned stimulus and the unconditioned stimulus are presented with equal probability but independently of each other. Such an arrangement results in a zero CONTINGENCY.

**random-digit dialing (RDD)** a survey strategy in which participants are contacted randomly by telephone. Usually the researcher selects the area code(s) and then uses a computer program to select the last digits at random. This increases the likelihood of contacting participants with unlisted numbers. A concern with this strategy is that nonresponders may differ from responders in ways that introduce bias. The approach also assumes that potential respondents have telephones that are in service.

**random-dot stereogram** a type of STEREOGRAM consisting of two images, each composed of black and white dots (or squares). Many of the dots are identical in both images, but a subset of dots in one image is offset horizontally. The images appear to consist of random dots, but when the separate images are simultaneously presented to the separate eyes, they are fused by the visual system, and the horizontal disparity of the subset of dots is interpreted as stereoscopic depth. [first devised in 1959 by Béla JULESZ]

**random effect** an effect arising from an INDEPENDENT VARIABLE in an experimental design whose values or levels are drawn randomly from some larger (conceptual) population of levels that could (in principle) have been selected. For example, a health researcher investigating the relationship between exercise and weight may select a few levels of daily exercise for study (e.g., 0 hours, between 0 and 1 hour, between 1 and 2 hours, between 2 and 3 hours) from a wide range of possible options. Results involving a random effect can be generalized to values beyond those observed and modeled in the study analysis. Also called **random factor**. Compare FIXED EFFECT.

**random-effects analysis of variance** a statistical procedure in which the variability of an outcome (typically a continuously measured variable) is accounted for by several different factors or predictors, each of which reflects a sampling of possible factor levels. The focus in a random-effects analysis of variance is on identifying differences in the mean values obtained on an outcome variable at the different levels of the predictors sampled. Compare FIXED-EFFECTS ANALYSIS OF VARIANCE.

**random-effects model** any statistical procedure or experimental design that involves RANDOM EFFECTS. For example, a researcher wishing to investigate the effects of temperature on the frequency of aggressive behavior could not easily examine each temperature value and so instead examines a random sample of such values and their effects. Although random-effects models tend to be less powerful than FIXED-EFFECTS MODELS, they enable generalization to levels of the independent variable not actually employed in the study. Also called **random model**. Compare MIXED-EFFECTS MODEL.

**random error** error that is due to chance alone. Random errors are nonsystematic and occur arbitrarily when unknown or uncontrolled factors affect the variable being measured or the process of measurement. Such errors are generally assumed to form a NORMAL DISTRIBUTION around a TRUE SCORE. Also called **variable error**. See also ABSOLUTE ERROR; CONSTANT ERROR. Compare SYSTEMATIC ERROR.

**random event generator (REG)** see RANDOM NUMBER GENERATOR.

**random factor** see RANDOM EFFECT.

**random-interval schedule (RI schedule)** in conditioning, an arrangement in which the first response after an interval has elapsed is reinforced, the duration of the interval varies randomly from reinforcement to reinforcement, and a fixed probability of reinforcement over time is used to reinforce a response. For example, if every second the probability that reinforcement would be arranged for the next response was .1, then the random-interval schedule value would be 10 seconds (i.e., RI 10 seconds).

**randomization** *n.* see RANDOM ASSIGNMENT.

**randomization test** an inferential approach that combines observed data across all participants and experimental conditions and then randomly sorts the data into new samples (groups). A test of STATISTICAL SIGNIFICANCE is performed, and the value obtained is compared with the value that was obtained when the data were in their original form. This process is repeated many times. For example, suppose there were 1,000 recalculated mean differences between the experimental (E) and control (C) groups, derived from 1,000 permutations. Comparison of the 1,000 recalculated means to the original means provides an exact probability of getting the original means. If 25% of the mean differences between the E and C group permutations differ by as much as or more than the difference between the original E and C means, then the probability value for the original mean difference is  $p = .25$ . A randomization test is a NONPARAMETRIC approach; that is, it does not make assumptions about the distribution of the data. Also called **permutation test**.

**randomized block design (RBD)** an approach to assigning participants to treatment conditions in which meaningful discrete strata within the sample (e.g., gender, experience) are used to identify homogeneous subsamples; individuals from each subsample or "block" are then assigned randomly to the different conditions. In this way, participants are initially matched on a "blocking variable" that the researcher wishes to control. The acknowledgment of heterogeneity within the sample enables the researcher to reduce within-group variance and to use that information when evaluating treatment effects. The variable on which participants are stratified is assessed prior to the study.

**randomized clinical trial (RCT)** an experimental design in which patients are randomly assigned to a group that will receive an experimental treatment, such as a new drug, or to one that will receive a comparison treatment, a standard-of-care treatment, or a PLACEBO. The RANDOM ASSIGNMENT occurs after recruitment and assessment of eligibility but before the intervention. There may be multiple experimental and comparison groups, but each patient is assigned to one group only. Also called **randomized controlled trial**. Compare NONRANDOMIZED CLINICAL TRIAL.

**randomized design** any of various experimental de-

signs in which individual participants are assigned to different conditions (groups) using a purely chance process, such as rolling a die. A crucial assumption underlying randomized designs is that any systematic differences between treatment groups will be due to the experimental conditions themselves and not to any other unmeasured factors. Also called **randomized group design**. Compare NONRANDOMIZED DESIGN.

**randomized-response technique (RRT)** a procedure for reducing SOCIAL DESIRABILITY bias when measuring sensitive attitudes (e.g., racial attitudes) or behaviors (e.g., drug use, eating behavior) at an aggregate group level. Respondents are presented with a pair of questions that have dichotomous response options (e.g., *agree* or *disagree*, *yes* or *no*), one question being the target question (sensitive question) and the other an innocuous filler question. They are instructed to roll a die (or use a similar randomization procedure) to determine which question they should answer; they then answer that question but do not tell the interviewer which one it is. The ambiguity regarding which question has been answered is assumed to reduce participants' concerns about the social desirability of their answers. Despite the fact that the interviewer does not know which question each person has answered, PROBABILITY THEORY can be used to estimate the distribution of responses to the target question in the population.

**random mating** mating behavior without MATE SELECTION. Many early BEHAVIORAL ECOLOGY theories were based on the idea of random mating, but it is now recognized that most animals select specific mates and often show ASSORTATIVE MATING.

**random model** see RANDOM-EFFECTS MODEL.

**random noise** see NOISE.

**random number generator (RNG)** a device or system used to produce a patternless output of numbers. These random digits have various experimental uses, including the RANDOM ASSIGNMENT of participants to treatment conditions, thereby taking the decision of assignment out of the hands of the researcher. Additionally, in parapsychology experiments, RNGs are used to test the supposed ability of certain psychics to influence random systems by mental intention (see PSYCHOKINESIS). Most current RNGs operate by computer program; strictly speaking, such programs produce a pseudorandom output because the algorithms that they use rely on a nonrandom system. Also called **random event generator (REG)**.

**random observation** any observation that results from a chance process (such as a flip of a coin), is uncontrolled, or is not part of a schedule or pattern of organized observation.

**random process** a process that relies on chance alone, such that outcomes may be analyzed according to their probability but not otherwise predicted. See STOCHASTIC.

**random-ratio schedule (RR schedule)** in conditioning, an arrangement in which the number of responses required for each reinforcement varies randomly from reinforcement to reinforcement. It is usually arranged by having the same probability of reinforcement for each response regardless of the history of reinforcement for prior responses. For example, a random-ratio 100 schedule would result from a reinforcement probability of .01 for any given response.

**random sampling** a process for selecting a SAMPLE of

study participants from a larger potential group of eligible individuals, such that each person has the same fixed probability of being included in the sample and some chance procedure is used to determine who specifically is chosen. A group selected in this way is known as a **random sample**. The main value of this form of PROBABILITY SAMPLING is its positive impact on GENERALIZABILITY and EXTERNAL VALIDITY.

**random selection** a procedure for RANDOM SAMPLING of a set of participants or units from a larger set that relies on the use of a chance process to minimize risk of researcher bias, either conscious or nonconscious.

**random variable** a variable that takes on different values according to a chance process. These values cannot be predicted with certainty and are assumed to vary across studies; however, their frequency can be described in terms of probability. Also called **stochastic variable**. Compare FIXED VARIABLE.

**random variation** differences in a DEPENDENT VARIABLE that are due to chance rather than to the factors being studied. Causes of random variation in test results may include respondent factors, such as health, motivation, attention, concentration, and fatigue; situational factors, such as room temperature, noise, and working environment; and respondent-by-situation factors, such as a respondent not being prepared for a specific rating task. Researchers try to estimate the extent to which random variation may be involved in the study to understand the true impact of the factors being assessed. See also CHANCE DIFFERENCE.

**random walk** a series of values plotted over time that reflects the workings of a chance process, such that each value has an unpredictable relationship to the preceding value and the series has no definable pattern. The concept is used in many research settings, including simulation studies and models of price movements on the stock market. Compare MARKOV CHAIN. See also STOCHASTIC.

**random walk model** a model of reaction time and accuracy in which the evidence mounts in discrete steps, causing one to incline toward or away from alternative response criteria. A response is made when the evidence, or "walk," reaches one of the criteria.

**R & T play** abbreviation for ROUGH-AND-TUMBLE PLAY.

**range** *n.* a measure of DISPERSION obtained by subtracting the lowest score in a distribution from the highest score. For example, if the highest score on a test is 100 and the lowest score is 10, then the range is  $(100 - 10) = 90$  points. Because it describes a raw discrepancy between the low and high scores, range is generally perceived as less informative than other measures of dispersion, such as the STANDARD DEVIATION.

**range effect** in VISUAL PURSUIT, a tendency to make movements too large when the target motion is small and too small when the target motion is large.

**range fractionation** a hypothesis of perception of stimulus intensity, stating that a wide range of intensity values can be encoded by a group of cells, each of which is a specialist for a particular range of stimulus intensities.

**range of attention** the span or spread of attention. See ATTENTION SPAN; SCOPE OF ATTENTION.

**range of audibility** see AUDIBILITY RANGE.

**range of motion (ROM)** the degree of movement of a

joint that can be achieved without tissue damage, such as how far a person can turn his or her neck. It is determined by the contour of the joint, the restraining bones, and the ligaments of the capsule surrounding the joint.

**range restriction** see RESTRICTION OF RANGE.

**rank** *1. n.* a relative position along an ordered continuum. See RANK ORDER. *2. vb.* to arrange items in a graded order, such as from highest to lowest value. In a peer nomination study, for example, a child might be asked to order individuals in a class from *most disruptive to least disruptive*. See also ORDINAL DATA. *3. n.* the maximum number of linearly independent row vectors or column vectors in a CORRELATION MATRIX: These values are always equal. For example, a  $10 \times 10$  correlation matrix of personality scores might have a rank of 6, indicating that there are less than 10 independent pieces of information present in the 10 scores.

**rank biserial correlation coefficient** an index of association between a DICHOTOMOUS VARIABLE and an ORDINAL VARIABLE. Its interpretation is the same as for other standardized measures of association. For example, a researcher might relate experimental condition (experimental vs. control group) to an ordinal measure of task performance. Compare POINT BISERIAL CORRELATION COEFFICIENT. See BISERIAL CORRELATION COEFFICIENT.

**rank correlation coefficient** a numerical index reflecting the degree of relationship between two variables that have each been arranged in ascending or descending order of magnitude (i.e., ranked). It does not reflect the association between the actual values of the variables but rather that between their relative positions in the distribution. For example, placement in a marathon race could be correlated with the runners' heights, but in this case the two variables—race outcome and height—would take the form *first place, second place*, and so on, and *tallest, next tallest*, and so on, respectively (rather than actual times run in the race and specific heights in feet and inches). Two of the most commonly used such indexes are the SPEARMAN CORRELATION COEFFICIENT and KENDALL'S TAU. Also called **rank-order correlation coefficient**.

**ranked data** see ORDINAL DATA.

**ranked distribution** a set of values on a variable sorted in magnitude from lowest to highest. The entries in a CUMULATIVE FREQUENCY table are an example of a ranked distribution.

**Rankian therapy** see WILL THERAPY.

**ranking experiment** a study in which the researcher asks participants to make a series of comparisons among stimuli (such as pictures, words, or emotions) so that the stimuli can be ordered on some dimension of interest (e.g., size, preference, cost, importance). For example, a researcher conducting a marketing study might ask respondents to indicate their preferences among certain products by ranking them from *most likely to buy to least likely to buy*, or by comparing two products at a time and indicating which would be preferred.

**ranking method** *1.* in industrial and organizational settings, a method of evaluating jobs for the purpose of setting wages or salaries; jobs are ranked according to their overall value to the company. The advantage of the method is that it is fast and simple; the disadvantage is that such whole-job comparisons tend to be subjective and become more difficult as the number of jobs in the organization in-

creases. Compare CLASSIFICATION METHOD; FACTOR-COMPARISON METHOD; JOB-COMPONENT METHOD; POINT METHOD. **2.** an EMPLOYEE COMPARISON TECHNIQUE in which the employees in a selected group are ranked from the highest to the lowest on one or more CRITERION DIMENSIONS.

**rank order** the arrangement of a series of items (e.g., scores, individuals) in order of magnitude on a particular criterion.

**rank-order data** see ORDINAL DATA.

**rank-order method** a procedure in which a participant sorts various study stimuli (e.g., cards, pictures, words, people) from highest to lowest on a dimension of interest. See RANKING EXPERIMENT.

**rank-order scale** see ORDINAL SCALE.

**rank-order statistic test** any NONPARAMETRIC TEST that allows researchers to evaluate hypotheses related to group differences or associations between ranked variables. Such tests make use of a RANK CORRELATION COEFFICIENT, such as the SPEARMAN CORRELATION COEFFICIENT or KENDALL'S TAU.

**rank regression** a type of REGRESSION ANALYSIS in which independent variables are used to predict the rank (as opposed to the actual value) of a dependent or response variable. This approach is particularly useful for distributions of errors that lack NORMALITY in their end values. See NONPARAMETRIC REGRESSION.

**rank-sum test** any NONPARAMETRIC TEST that involves combining the data points from two or more samples in a single data set and ranking these values in ascending order. See MANN-WHITNEY U TEST; WILCOXON-MANN-WHITNEY TEST; WILCOXON RANK-SUM TEST.

**rank transformation** a class of TRANSFORMATION in which a participant's score on a variable is replaced by the rank position of the score relative to the other scores in the data set. For example, an instructor might modify an original distribution of exam scores for a class into a listing that is ordered from highest to lowest. Rank transformations serve as the basis for a wide variety of NONPARAMETRIC TESTS.

**rape** *n.* the nonconsensual oral, anal, or vaginal penetration of an individual by another person with a part of the body or an object, using force or threats of bodily harm or taking advantage of the individual's inability to deny consent. In the United States, laws defining rape vary by state, but the crime of rape is no longer limited to female victims, to vaginal penetration, or to forcible situations, and the exclusion of spouses as possible perpetrators of rape has been dropped.

**rape counseling** provision of guidance and support for victims of rape and sexual assault. **Rape crisis centers** offer expert counseling for the psychological trauma that individuals typically experience following a sexual attack; both the affected individuals and their families are counseled. Community education and prevention outreach programs are increasingly included in this area of counseling.

**rape-trauma syndrome** the symptoms of POSTTRAUMATIC STRESS DISORDER (PTSD) experienced by an individual who has been sexually assaulted (the term was coined prior to the wide acceptance and use of the more inclusive concept of PTSD). The symptoms, which may include fear of being alone, phobic attitudes toward sex, VAGINISMUS,

erectile dysfunction, or repeated bathing, may persist for a year or more.

**raphe nucleus** a group of SEROTONERGIC neurons in the midline of the brainstem that project widely to the spinal cord, thalamus, basal ganglia, and cerebral cortex. Raphe nuclei are involved in alertness and sleep-wake states. Also called **nucleus of the raphe**; **raphe**.

**rapid alternating movements** changing hand positions rapidly in a sequenced pattern as a measure of motor control and coordination (i.e., cerebellar functioning). Failure to perform this task is called DYSDIADOCHOKINESIS.

**rapid cycling** mood disturbance that fluctuates over a short period, most commonly between manic and depressive symptoms. In *DSM-IV-TR* and *DSM-5*, the term is a specifier applied to BIPOLAR DISORDER characterized by four or more mood episodes over a 12-month period; the episodes must be separated by symptom-free periods of at least 2 months or must be delimited by switching to an episode of opposite polarity (e.g., a major depressive episode switches to a manic, mixed, or hypomanic episode). [coined in 1974 by U.S. psychiatrists David L. Dunner and Ronald R. Fieve]

**rapid eye movement (REM)** the large, sweeping eye movements behind closed lids that occur during REM SLEEP.

**rapid neuroleptization** see MEGADOSE PHARMACOTHERAPY.

**rapid sequential visual presentation (RSVP)** in psychophysical testing, a methodology in which a series of visual stimuli, such as shapes or words, are presented in a very short time span, often just a few milliseconds per item.

**rapport** *n.* a warm, relaxed relationship of mutual understanding, acceptance, and sympathetic compatibility between or among individuals. The establishment of rapport with a client in psychotherapy is frequently a significant mediate goal for the therapist in order to facilitate and deepen the therapeutic experience and promote optimal progress and improvement.

**rapprochement** *n.* **1.** generally, a state of cordial relations between individuals or groups. **2.** in the theory of SEPARATION-INDIVIDUATION of Hungarian-born U.S. child psychoanalyst Margaret Schönberger Mahler (1897–1985), a subphase, after about 18 months of age, in which the child makes active approaches to the mother. This contrasts with the preceding subphase in which the child struggles with the first efforts of psychological individuation from the mother.

**Rapunzel syndrome** *n.* see TRICHOPHAGIA.

**RAS** abbreviation for RETICULAR ACTIVATING SYSTEM.

**Rasch model** in ITEM RESPONSE THEORY, a model in which only one parameter, item difficulty, is specified. This is thought to be a parsimonious way to describe the relation between an item response and an underlying dimension and is thus preferred in some cases. Also called **one-parameter model**. See TWO-PARAMETER MODEL; THREE-PARAMETER MODEL. [proposed in 1960 by Danish statistician Georg Rasch (1901–1980)]

**rate coding** a type of neural plotting of the frequency at which ACTION POTENTIALS occur. Compare TEMPORAL CODING.

**rate dependence effect** see LAW OF INITIAL VALUES.

**rate dependency** in behavioral pharmacology, the phe-

nomenon in which the magnitude or direction (or both) of a drug's effect on response rate depends on the response rate observed when the drug is not present. Typically, low response rates are increased by a drug, and high rates are either increased less or decreased.

**rate law** the principle that the strength of a stimulus is indicated by the rate of firing of the nerve impulses it elicits.

**rate of change** the amount of change in a variable per unit time divided by the value of the variable before the change. If a score rises from 20 to 30 in unit time, for example, the rate of change is  $(30 - 20)/20 = 10/20 = 0.5$ .

**rater reliability** see INTERRATER RELIABILITY.

**rating** *n.* a score assigned to a person or object on a numerical scale (e.g., 1 to 5) or a verbal scale (e.g., *very good* to *very poor*). See RATING SCALE.

**rating error** an incorrectly assigned RATING. Errors of this kind may be due to several types of bias, including END-AVERSION BIAS, HALO EFFECTS, and PRIMACY EFFECTS. For example, if a rater always describes the first of two targets in more favorable terms, then a primacy effect may account for these assigned responses.

**rating scale** an instrument that is used to assign scores to people or items along some numerical dimension, such as agreement with an attitude statement or frequency of occurrence. Rating scales can be classified according to the number of points along the dimension that is being assessed (e.g., a 5-point scale, 7-point scale) and the way in which the response labels are ordered along the dimension. See BIPOLAR RATING SCALE; LIKERT SCALE; SEMANTIC DIFFERENTIAL.

**rating scale judgment task** a signal detection task in which participants assign confidence ratings to their *yes* or *no* responses. Each rating category defines a different response criterion relative to which the evidence is judged, allowing a RECEIVER-OPERATING CHARACTERISTIC CURVE to be constructed efficiently.

**ratio data** numerical values that indicate magnitude and have a true, meaningful zero point. Ratio data represent exact quantities of the variables under consideration, and when arranged consecutively they have equal differences among adjacent values (regardless of the specific values selected) that correspond to genuine differences between the physical quantities being measured. Income provides an example: The difference between an income of \$40,000 and \$50,000 is the same as the difference between \$110,000 and \$120,000, and an income of \$0 indicates a complete and genuine absence of earnings. Ratio data are continuous in nature (i.e., able to take on any of an infinite variety of amounts) and of the highest MEASUREMENT LEVEL, surpassing INTERVAL DATA, ORDINAL DATA, and NOMINAL DATA in precision and complexity.

**ratio IQ** see IQ.

**rational** *adj.* **1.** pertaining to REASONING or, more broadly, to higher thought processes. **2.** based on, in accordance with, or justifiable by accepted principles of reasoning or logic. Compare IRRATIONAL; NONRATIONAL. **3.** capable of or exhibiting reason. **4.** influenced by reasoning rather than by emotion. —**rationally** *adv.*

**rational addiction** a controversial theory that addicts regulate their substance-focused behavior based on cost-benefit analyses. These analyses ostensibly take into ac-

count current monetary and future addiction costs and then weigh them against the benefits of the drug-induced high. [proposed by U.S. economists Kevin M. Murphy and Gary S. Becker (1930–2014)]

**rational authority** see AUTHORITY.

**rational-economic man** a construct introduced in the work of Scottish economist Adam Smith (1723–1790): The rational-economic man makes decisions based on the rational analysis of potential and desired outcomes and acts in his (or her) own rational self-interest. This assumption lies behind the classical economic theories of capitalism and the classical political philosophies of liberalism. Its influence can also be seen in psychology, most theories and models of which assume a human being capable of reason and highly motivated to act out of self-interest. Recent research suggests that people are often ruled more by emotional and cognitive biases than by rational self-interest when making economic and other decisions. See EUDEMONISM; HEDONISM. See also BEHAVIORAL ECONOMICS; BOUNDED RATIONALITY.

**rational emotive behavior therapy (REBT)** a form of COGNITIVE BEHAVIOR THERAPY based on the concept that an individual's self-defeating beliefs influence and cause negative feelings and undesirable behaviors. Specifically, a person's problems are seen as the result of turning healthy desires for success, approval, and pleasure into demands (e.g., "I must achieve outstandingly well in one or more important respects or I am an inadequate person"). Because of its emphasis on thinking, feeling, and acting as integrated and holistic processes, REBT uses a variety of cognitive, emotional, and behavioral techniques to directly and emphatically interrupt clients' irrational beliefs and encourage them to think and act in more effective, self-enhancing (i.e., rational) ways. Originally called **rational therapy (RT)** and subsequently **rational emotive therapy (RET)**, it became known by its current name during the 1990s. See also ABCDE TECHNIQUE; ABC THEORY. [developed in 1955 by Albert ELLIS]

**rationalism** *n.* **1.** any philosophical position holding that (a) it is possible to obtain knowledge of reality by reason alone, unsupported by experience, and (b) all human knowledge can be brought into a single deductive system. This confidence in reason is central to classical Greek philosophy, notably in its mistrust of sensory experience as a source of truth and the preeminent role it gives to reason in epistemology. However, the term *rationalist* is chiefly applied to thinkers in the Continental philosophical tradition initiated by René DESCARTES, most notably Baruch SPINOZA and Gottfried Wilhelm LEIBNIZ. Rationalism is usually contrasted with EMPIRICISM, which holds that knowledge comes from or must be validated by sensory experience. Psychoanalytical approaches, humanistic psychology, and some strains of cognitive theory are heavily influenced by rationalism. **2.** in religion, a perspective that rejects the possibility or the viability of divine revelation as a source of knowledge. **3.** in general, any position that relies on reason and evidence rather than on faith, intuition, custom, prejudice, or other sources of conviction. —**rationalist** *adj., n.*

**rationality** *n.* **1.** the quality of being reasonable or RATIONAL or of being open to reason. **2.** a rational action, belief, or desire.

**rationality of emotions** the proposition that emotions show an implacable logic, in that they follow from APPRAISALS made by the individual as inevitably as logical

conclusions follow from axioms and premises. This view, which counters the traditional idea that emotions and reason are in opposition to one another, is linked to the work of U.S. psychologist Richard S. LAZARUS and Swiss-born Canadian-British philosopher Ronald B. De Sousa (1940– ).

**rationalization** *n.* an EGO DEFENSE in which apparently logical reasons are given to justify unacceptable behavior that is motivated by unconscious instinctual impulses. In psychoanalytic theory, such behavior is considered to be a DEFENSE MECHANISM. Examples are “Doesn’t everybody cheat?” or “You have to spank children to toughen them up.” Rationalizations are used to defend against feelings of guilt, maintain self-respect, and protect oneself from criticism. In psychotherapy, rationalization is considered counterproductive to deep exploration and confrontation of the client’s thoughts and feelings and their effect on behavior. —**rationalize** *vb.*

**rational knowledge** knowledge gained through reason or arrived at by logical argument.

**rational learning** MEANINGFUL LEARNING that involves a clear understanding of the learned material and the relationships between its components.

**rationally based persuasion** see COGNITIVELY BASED PERSUASION.

**rational problem solving** problem solving based on reasoning that is generally agreed to be correct, optimal, or logical.

**rational psychology** an approach to the study and explanation of psychological phenomena that emphasizes philosophy, logic, and deductive reason as sources of insight into the principles that underlie the mind and that make experience possible. This approach is in sharp contrast to that of EMPIRICAL PSYCHOLOGY. See also PHILOSOPHICAL PSYCHOLOGY. [proposed by Laurens Perseus HICKOK]

**rational soul** in the thought of ARISTOTLE, the type of soul possessed by human beings. Unlike the VEGETATIVE SOUL and the SENSITIVE SOUL, the rational soul has the capacity for rational thought. See also NOUS.

**rational suicide** a controversial concept that ending one’s own life can be a reasoned, understandable response to a situation such as terminal illness, severe pain, or mental deterioration.

**rational thinking** thinking according to logical rules, which is considered by many theorists to be a central part of intelligence.

**rational type** in the ANALYTIC PSYCHOLOGY of Carl JUNG, one of the two major categories of FUNCTIONAL TYPE: It comprises the THINKING TYPE and the FEELING TYPE. Compare IRRATIONAL TYPE.

**ratio reinforcement** in OPERANT CONDITIONING, reinforcement presented after a prearranged number of responses, in contrast to reinforcement delivered on the basis of a time schedule only. In such schedules (e.g., FIXED-RATIO SCHEDULE, PROGRESSIVE-RATIO SCHEDULE), the rate of reinforcement is a direct function of the rate of responding. Also called **ratio schedule of reinforcement**. Compare INTERVAL REINFORCEMENT.

**ratio scale** a measurement scale having a true zero (i.e., zero on the scale indicates an absence of the measured attribute) and a constant ratio of values. Thus, on a ratio scale an increase from 3 to 4 (for example) is the same as

an increase from 7 to 8. The existence of a true zero point is what distinguishes a ratio scale from an INTERVAL SCALE.

**ratio strain** in operant-conditioning experiments, the occurrence of long periods of inactivity in the experimental animal when FIXED-RATIO SCHEDULES are very large.

**ratio variable** a variable that is measured with a RATIO SCALE (e.g., height, weight). See RATIO DATA.

**Rat Man** a landmark case that Sigmund FREUD described in “Notes Upon a Case of Obsessional Neurosis” (1909). The name was applied to a patient of Freud’s, a 30-year-old lawyer whose obsessional fear of rats was traced to repressed death wishes toward his father generated by oedipal conflicts. One example of the patient’s obsession was his belief that a rat that appeared to come out of his father’s grave had eaten the corpse; another was a fantasy that a rat had been placed in his father’s anus and had eaten through his intestines. Freud’s analysis of these reactions laid the groundwork for the psychoanalytic interpretation of obsessional neurosis. See also OEDIPUS COMPLEX.

**rauwolfia derivative** any of a group of alkaloids obtained from plants of the genus *Rauwolfia*, primarily *R. serpentina*, the ancient Hindu snakeroot. They have sedative and antihypertensive actions and have been used in neuropsychopharmacology since about 1000 BCE by Hindu healers. The genus was named for 16th-century German botanist Leonhard Rauwolf, who reported its tranquilizing effect in 1575 while traveling in India. The prototype drug of the group is **reserpine**, which acts by depleting stores of catecholamine neurotransmitters in the central and peripheral nervous systems. Rauwolfia derivatives were initially used in the management of psychosis but were erroneously thought to induce depression and therefore abandoned for this use in the 1950s.

**Raven’s Progressive Matrices** a nonverbal test of mental ability consisting of abstract designs, each of which is missing one part. The participant chooses the missing component from several alternatives to complete each design. The test comprises 60 designs arranged in five groups of 12; the items within each group become progressively more difficult. Scales of different levels of difficulty are available for children and adults, but all require some degree of logic and analytic ability. The test, published in 1938, is often viewed as the prototypical measure of general intelligence. A version of this test, **Raven’s Colored Progressive Matrices**, comprises 36 designs printed on colored backgrounds and arranged in three groups of 12. Designed especially for children and older adults, the items within each group become progressively more difficult but overall are simpler and easier to solve than those on the standard matrices. [John C. **Raven** (1902–1970), British psychologist]

**RAVLT** abbreviation for REY AUDITORY VERBAL LEARNING TEST.

**raw data** the original measurements on a variable as collected by the researcher, prior to data cleaning, RECODING, TRANSFORMATIONS, and quantitative or qualitative analysis. For example, a survey may ask respondents to enter their annual income in dollars: The figures supplied by respondents would be the raw data. For the purposes of analysis, however, the data may be cleaned to account for improbable entries or individuals who prefer not to answer and recoded to create a smaller set of income categories.

**raw score** a participant’s score on a test before it is converted to other units or another form or subjected to quan-

titative or qualitative analysis. For example, a score may be transformed into a percentage (e.g., 45 correct answers out of 50 = 90%) or into a standardized metric such as a Z SCORE (mean of 0; standard deviation of 1) or a T SCORE (mean of 50; standard deviation of 10). Also called **unstandardized score**.

**Rayleigh equation** a statement of the proportion of red and green stimuli needed for a normal human eye to perceive yellow. Observers who are red-weak or green-weak require different proportions than normal observers. [John William Strutt, Baron **Rayleigh** (1842–1919), British physicist]

**Rayleigh scattering** the scattering of sunlight by molecules in the atmosphere. The amount of scattering is dependent on the wavelength of the light, with short wavelengths producing stronger scattering than long wavelengths. The blue color of the sky is caused by the relatively large amount of Rayleigh scattering of short-wavelength light by the Earth's atmosphere. [Lord **Rayleigh**]

**Raynaud's disease** a disorder characterized by episodes of painful vasoconstriction of the blood vessels in the extremities, especially the fingers and toes. The attacks, usually lasting up to 15 minutes, are precipitated by cold exposure or, in one third of cases, by emotional stress. **Raynaud's phenomenon** refers to similar symptoms caused by another disease—for example, rheumatoid arthritis—or by toxic agents, such as vinyl chloride. Drug therapy and behavioral treatment (with thermal biofeedback) have proven effective in relieving the attacks. [identified in 1854 by Maurice **Raynaud** (1834–1881), French physician]

**Razadyne** *n.* a trade name for GALANTAMINE.

**$r_b$**  symbol for BISERIAL CORRELATION COEFFICIENT.

**RBC theory** abbreviation for RECOGNITION BY COMPONENTS THEORY.

**RBD 1.** abbreviation for RANDOMIZED BLOCK DESIGN. **2.** abbreviation for REM BEHAVIOR DISORDER.

**$r_{bis}$**  symbol for BISERIAL CORRELATION COEFFICIENT.

**$R_c$**  symbol for CANONICAL CORRELATION COEFFICIENT. A further subscript may be added to show which canonical variates are being correlated.

**rCBF (RCBF)** abbreviation for REGIONAL CEREBRAL BLOOD FLOW.

**RCFT** abbreviation for Rey COMPLEX FIGURE TEST.

**RCMAS** abbreviation for Revised CHILDREN'S MANIFEST ANXIETY SCALE.

**RCT** abbreviation for RANDOMIZED CLINICAL TRIAL.

**RdA** abbreviation for READING AGE.

**RDC** abbreviation for RESEARCH DIAGNOSTIC CRITERIA.

**RDD 1.** abbreviation for RANDOM-DIGIT DIALING. **2.** abbreviation for REGRESSION-DISCONTINUITY DESIGN.

**reach envelope** in ergonomics, the area that an operator can reach from a seated or standing position. It is used in WORKSPACE DESIGN to determine the placement of displays and tools to be used by the operator.

**reactance theory** a model stating that in response to a perceived threat to—or loss of—a behavioral freedom, a person will experience **psychological reactance** (or, more simply, **reactance**), a motivational state characterized by distress, anxiety, resistance, and the desire to restore that

freedom. According to this model, when people feel coerced into a certain behavior, they will react against the coercion, often by demonstrating an increased preference for the behavior that is restrained, and may perform the behavior opposite to that desired. [proposed in 1966 Jack W. BREHM]

**reaction** *n.* a response to a stimulus.

**reactional biography 1.** in employment interviews, an applicant's account of his or her employment history or other experience that sheds significant light on how he or she reacted to workplace events. A skillful interviewer will attempt to elicit such information in addition to the factual data; similarly, a skillful interviewee will know how to present his or her experiences in terms of positive lessons learned or challenges overcome. **2.** in the INTERBEHAVIORAL PSYCHOLOGY of Jacob Robert KANTOR, an organism's history of interactions with and responses to environmental stimuli, which influences that organism's subsequent psychological development and behavior.

**reaction formation** in psychoanalytic theory, a DEFENSE MECHANISM in which unacceptable or threatening unconscious impulses are denied and are replaced in consciousness with their opposite. For example, to conceal an unconscious prejudice, an individual may preach tolerance; to deny feelings of rejection, a mother may be over-indulgent toward her child. Through the symbolic relationship between the unconscious wish and its opposite, the outward behavior provides a disguised outlet for the tendencies it seems to oppose.

**reaction potential** in HULL'S MATHEMATICO-DEDUCTIVE THEORY OF LEARNING, the probability that a stimulus will facilitate a particular response. It is a multiplicative function of an organism's HABIT STRENGTH and DRIVE STRENGTH.

**reaction time (RT)** the time that elapses between the onset or presentation of a stimulus and the occurrence of a specific response to that stimulus. There are several types, including SIMPLE REACTION TIME and CHOICE REACTION TIME. Reaction time can be used to assess various psychological constructs. To assess negative affect, for example, a researcher might measure the time between presentation of various words with emotional connotations and a participant's indication that each word is either "positive" or "negative." Also called **response latency**; **response time**.

**reaction type 1.** any of the categories into which a psychiatric syndrome can be classified in terms of its predominant symptoms. For example, Adolf MEYER distinguished affective, delirious, deteriorated, disguised-conflict, organic, and paranoid reaction types. See SCHIZOPHRENIC REACTION. **2.** in reaction-time experiments, a particular type of SET, or readiness of the participant or participants: motor (prepared to respond), sensory (prepared to receive a stimulus), or mixed.

**reactivation of memory** the RETRIEVAL of a memory, which may be triggered by stimuli or environmental conditions similar to those present when the memory was originally formed. See also PRIMING.

**reactive** *adj.* associated with or originating in response to a given stimulus or situation. For example, a psychotic episode that is secondary to a traumatic or otherwise stressful event in the life of the individual would be considered reactive and generally associated with a more favorable prognosis.



sis than an ENDOGENOUS episode unrelated to a specific trigger.

**reactive aggression** see AGGRESSION.

**reactive attachment disorder** in *DSM-IV-TR*, a disorder of infancy and early childhood characterized by disturbed and developmentally inappropriate patterns of social relating that are not due to intellectual disability or pervasive developmental disorder. It is evidenced either by persistent failure to initiate or respond appropriately in social interactions (inhibited type) or by indiscriminate sociability without appropriate selective attachments (disinhibited type). There must also be evidence of inadequate care (e.g., neglect of the child's basic physical or emotional needs, frequent changes of primary caregiver), which is assumed to be responsible for the disorder. In *DSM-5*, the term refers only to the inhibited type; the disinhibited type is now termed **disinhibited social engagement disorder**. Also called **attachment disorder**.

**reactive coping** a stress-management strategy that involves efforts to deal with a past or present stressful situation (e.g., marital dissolution, losing one's job) by compensating for or accepting the associated harm or loss. Reactive coping may also involve efforts to readjust goals, find benefit, or search for meaning. One of four types of coping proposed by German psychologists Ralf Schwarzer (1943– ) and Nina Knoll, reactive coping may be problem-focused, emotion-focused, or social-relation-focused. See also ANTICIPATORY COPING; PREVENTIVE COPING; PROACTIVE COPING.

**reactive depression** a MAJOR DEPRESSIVE EPISODE that is precipitated by a distressing event or situation, such as a career or relationship setback. Also called **exogenous depression**. Compare ENDOGENOUS DEPRESSION.

**reactive disorder** an older name for a mental condition that is apparently precipitated by severe environmental pressure or a traumatic event.

**reactive inhibition** in HULL'S MATHEMATICO-DEDUCTIVE THEORY OF LEARNING, a tendency for response magnitude to decrease with increasing practice or fatigue.

**reactive jealousy** a form of JEALOUSY in response to a specific, actual threat to the future of a relationship. Compare SUSPICIOUS JEALOUSY.

**reactive mania** a HYPOMANIC EPISODE or MANIC EPISODE that is precipitated by an external event.

**reactive measure** a measure that alters the response under investigation. For example, if participants are aware of being observed, their reactions may be influenced more by the observer and the fact of being observed than by the stimulus object or situation to which they are ostensibly responding. Compare UNOBTRUSIVE MEASURE.

**reactive psychosis** see SITUATIONAL PSYCHOSIS.

**reactive schizophrenia** an acute form of schizophrenia that develops in response to precipitating environmental factors, such as extreme stress. The prognosis is generally more favorable than for PROCESS SCHIZOPHRENIA. [proposed in 1959 by U.S. psychologists Norman Garmezy (1918–2009) and Eliot H. Rodnick (1911–1999)]

**reactivity** *n.* the condition in which a participant being observed is changed in some way by the act of observation. Within an experimental setting, reactivity is viewed as a threat to INTERNAL VALIDITY because the change in behavior

is not due to the experimental manipulation. See also REACTIVE MEASURE.

**readability level 1.** the level at which a child is able to read successfully. It is a relative measure of skill, identified in terms of grade level. Also called **reading level. 2.** the potential ease with which a passage can be read and understood, based on factors such as legibility of the printed page, vocabulary, sentence length and structure, human interest, and general intelligibility.

**readership-survey technique** a research method used in advertising to determine how thoroughly a consumer has read the copy in a print advertisement. The consumer is shown a list of products, brand names, or company names. If the consumer claims to have seen an advertisement for any of them in a particular magazine or newspaper, he or she is asked to recall information about the content of the advertising copy. See also RECOGNITION TECHNIQUE.

**readiness** *n.* **1.** a state of preparedness to act or to respond to a stimulus. See MENTAL SET; PREFERENCE; PREPARATORY ADJUSTMENT. **2.** a state of receptivity to an experience or activity, such as school readiness or readiness to change substance use behaviors.

**readiness potential (RP)** an electrical brain potential that precedes volitional muscular movement. It is detectable some 500 to 600 ms before motion occurs. Also called **Bereitschaftspotential (BP)**. See PREDECISIONAL NEGATIVE SHIFT. See also LATERALIZED READINESS POTENTIAL; EVENT-RELATED POTENTIAL. [first reported in 1964 by German neurologists Hans Helmut Kornhuber and Lüder Deecke (1938– )]

**readiness test** a test designed to predict how well an individual is prepared to profit from instruction in a particular field, especially reading, mathematics (arithmetic, algebra, geometry), and foreign languages.

**reading age (RdA)** the reading abilities of a student as reflected in a scale stating the age group to which the student's reading abilities are equivalent. A child who reads well may have a reading age significantly above his or her chronological age.

**reading delay** inability to read at the ability level typical for a given age.

**reading disability** difficulty understanding the associations between letters and sounds. It is associated with neurological damage or impairment, typically in language processing and visual reasoning areas of the brain.

**reading disorder** in *DSM-IV-TR*, a LEARNING DISORDER that is characterized by a level of reading ability substantially below that expected for a child of a given age, intellectual ability, and educational experience. The reading difficulty—which involves faulty oral reading, slow oral and silent reading, and often reduced comprehension—interferes with achievement or everyday life and is not attributable to neurological impairment, sensory impairment, intellectual disability, or environmental deprivation. In *DSM-5*, the disorder has been subsumed within a category labeled **specific learning disorder** and is no longer considered a distinct entity. Also called **developmental reading disorder**.

**reading epilepsy** a type of REFLEX EPILEPSY in which reading precipitates a seizure.

**reading ladder 1.** a means of advancing a student's

reading abilities to a higher level, beginning with easy reading and progressing in a prescribed order through increasingly difficult material. This process was developed to encourage students to expand their reading skills. **2.** a list of titles on a similar theme arranged in order of difficulty, with the easiest at the bottom and the most difficult at the top.

**reading level** see READABILITY LEVEL.

**reading machine** a device for individuals with visual impairment that uses an optical scanner and character-recognition software and a SPEECH SYNTHESIZER to convert printed text into speech. Reading machines can be stand-alone units or can be created by adding the appropriate components to a computer.

**reading quotient** a child's reading ability as determined by dividing READING AGE test scores by chronological age.

**reading readiness** the development of the prerequisite skills and abilities for reading, such as auditory and visual discrimination and cognitive abilities.

**reading retardation** the state of having a reading achievement level 2 or more years below the MENTAL AGE.

**reading span** **1.** the amount of written or printed material that a person can apprehend during a single FIXATION of the eye during reading. The greater the reading span, the fewer times the eye needs to stop along a line of text. A span of 7 to 10 characters is considered typical. Also called **eye span**; **recognition span**. See also EYE-VOICE SPAN. **2.** in memory tests, the number of words a person can remember on being asked to recall the last word of each sentence in a passage that he or she has just read.

**readmission** *n.* the admission to a hospital, clinic, or other institution of a patient who has been admitted previously for the same or a related condition. Also called **rehospitalization**. See also REVOLVING-DOOR PHENOMENON. —**readmit** *vb.*

**reafference** *n.* sensory signals that occur as a result of the movement of the sensory organ. For example, when the eye moves, the image of a stationary stimulus moves across the retina. This reafferent signal of motion is compared by the brain to that which would be expected as a result of the intended movement, and adjustments are made as necessary. Compare PREAFFERENCE. See also BRAIN COMPARTOR; COROLLARY DISCHARGE. —**reafferent** *adj.*

**reafference principle** a concept developed to explain the regulation and interaction of internal signals and sensory signals in directing and coordinating bodily movements. It requires storage of a copy of each spontaneous activation of a motor unit by the processing unit (see COROLLARY DISCHARGE). This copy fixes the reference value of the parameters required to execute the movement, which guides the response until the REAFFERENCE from a sensory unit to the processing unit indicates an accordance with the reference value or set point. The reafference principle has also been used to explain some perceptual phenomena. For example, a corollary discharge signal from neural units controlling how the eye moves has been hypothesized to be used in combination with reafferent motion signals from the retina to determine the motion of objects in the world. See also PREAFFERENCE.

**Real** *n.* the realm of nature or reality; one of three aspects of the psychoanalytic field defined by French psychoanalyst Jacques Lacan (1901–1981). The Real is posited to be

unknown and unknowable—in effect, unreal—because all that individuals ultimately possess are images and symbols. The other realms are the IMAGINARY and the SYMBOLIC.

**real-ideal self congruence** the degree to which the characteristics of a person's ideal self match his or her actual characteristics. The discrepancy (or incongruence) between the two, when large enough, creates psychological pain; it is theorized to be a motivating force for entering psychotherapy and is the focus of treatment in CLIENT-CENTERED THERAPY. In research studies, it can be measured by having participants sort cards describing themselves as they would like to be and as they are (see SELF-IDEAL Q SORT).

**realism** *n.* **1.** the philosophical doctrine that objects have an existence independent of the observer. Compare IDEALISM. See also NAIVE REALISM. **2.** the older philosophical doctrine that UNIVERSALS, such as general terms and abstract ideas, have a greater genuine reality than the physical particulars to which they refer, as in so-called PLATONIC IDEALISM. Compare NOMINALISM. **3.** in literature and the visual and performing arts, any mode of representation that seeks to present human experience and society in a way that is true to life. The quest for verisimilitude usually involves both a sensitive, complex delineation of the psychology of characters and a detailed description of social contexts. The term *realism* is particularly applied to a broad movement of this kind in 19th-century fiction, as represented by the work of French novelists Honoré de Balzac (1799–1850) and Gustave Flaubert (1821–1880); Russian novelists Ivan Turgenev (1818–1883), Fyodor Dostoevsky (1821–1881), and Leo Tolstoy (1828–1910); and American novelist William Dean Howells (1837–1920). Literary NATURALISM is usually considered an offshoot of literary realism. —**realist** *adj., n.*

**realism factor** in psychological aesthetics, the dimension of artistic style that involves accurate representation of objects. See ABSTRACT-VERSUS-REPRESENTATIONAL DIMENSION.

**realistic anxiety** anxiety in response to an identifiable threat or danger. This type of anxiety is considered a normal response to danger in the real world and serves to mobilize resources to protect the individual from harm. Also called **objective anxiety**.

**realistic group conflict theory** a conceptual framework predicated on the assumption that intergroup tensions will occur whenever social groups must compete for scarce resources (e.g., food, territory, jobs, wealth, power, natural resources) and that this competition fuels prejudice and other antagonistic attitudes that lead to conflicts such as rivalries and warfare. Also called **realistic conflict theory**.

**realistic job preview (RJP)** see JOB PREVIEW.

**realistic thinking** thinking that is based or focused on the objective qualities and requirements that pertain in different situations. Realistic thinking permits adjustment of thoughts and behavior to the demands of a situation; it depends on the ability to interpret external situations in a fairly consistent, accurate manner. See also REALITY TESTING.

**reality** *n.* in philosophy, that which genuinely exists, usually in contrast to that which only seems to exist. See ABSOLUTE REALITY; OBJECTIVE REALITY. See also ACTUAL. —**real** *adj.*

**reality awareness** the perception of external objects as different from the self and from each other. Also called **reality contact**.

**reality confrontation** an activity in which a therapist raises the possibility that the patient has misconstrued events or the intentions of others.

**reality monitoring** a specific aspect of SOURCE MONITORING that refers to the process of discriminating between external (real) and internal (imagined) events. A failure or impairment in this process is said to account for such phenomena as FALSE MEMORY and hallucinations. [coined by U.S. psychologist Marcia K. Johnson (1943– )]

**reality orientation** an intervention originally developed for the rehabilitation of cognitively impaired veterans and now often used for individuals with dementia to decrease their confusion, increase their awareness of time, place, and self, and improve their overall cognitive, behavioral, and social functioning. It is usually applied in residential settings (e.g., long-term care facilities), with practitioners continually reminding the individual who and where he or she is; what day, month, or year it is; and what is happening at a given moment in time or is about to take place. Clocks, calendars, newspapers, family photographs, and the like are often used to facilitate this process.

**reality principle** in classical psychoanalytic theory, the regulatory mechanism that represents the demands of the external world and requires the individual to forgo or modify instinctual gratification or to postpone it to a more appropriate time. In contrast to the PLEASURE PRINCIPLE, which is posited to dominate the life of the infant and child and govern the ID, or instinctual impulses, the reality principle is posited to govern the EGO, which controls impulses and enables people to deal rationally and effectively with the situations of life.

**reality testing** any means by which an individual determines and assesses his or her limitations in the face of biological, physiological, social, or environmental actualities or exigencies. It enables the individual to distinguish between self and nonself and between fantasy and real life. Defective reality testing is the major feature of psychosis.

**reality therapy** treatment that focuses on an individual's ineffective or maladaptive behavior and the development of the ability to cope with the stresses of reality and take greater responsibility for the fulfillment of his or her needs (i.e., discover what he or she really wants and the optimal way of achieving it). To these ends, the therapist plays an active role in examining the client's daily activities, suggesting healthier, more adaptive ways for the client to behave. Reality therapy tends to be of shorter duration than traditional psychotherapies. [developed by U.S. psychiatrist William Glasser (1925–2013)]

**real-life test** a period during which people seeking SEX REASSIGNMENT are required to live as the sex with which they identify, usually for 1 or 2 years, before any surgical procedures are performed. It involves changing names as well as clothing, hair, and other aspects of physical appearance. The real-life test is used to determine if the individual will be able to cope with, and benefit from, sex-reassignment surgery.

**real limit** the lower or upper value for a continuous variable measured on a RATIO SCALE. For example, a test score of 95 has the **lower real limit** of 94.5 and the **upper real**

**limit** of 95.4 since any value within that range will equal 95 when rounded to a whole number.

**real self** an individual's true wishes and feelings and his or her potential for further growth and development. See also ACTUAL SELF; TRUE SELF. [defined by Karen D. HORNEY]

**real-simulator model** an experimental design in which some participants are instructed to simulate hypnosis while other participants are genuinely experiencing it. The experimenter is usually unaware of which participants are experiencing the state and which are simulators. [originated by Martin T. ORNE]

**real-time amplification** a technique of AUDITORY FEEDBACK to improve voice quality and diction, in which individuals speak into a microphone attached to an amplifier that feeds back voice and speech patterns without time lapse. The amplifier filters out background noises outside of the bandwidth (typically set to 100–80,000 Hz), allowing the speaker to experience optimal auditory feedback as he or she is talking in real time.

**reason** **1.** *n.* consecutive thought, as in deduction or induction. Although at one time reason was considered a mental faculty, this meaning is typically not intended in current usage. See DEDUCTIVE REASONING; INDUCTIVE REASONING. **2.** *n.* in philosophy, the intellect (or NOUS) regarded as the source of true knowledge. See RATIONALISM. **3.** *n.* soundness of mind. **4.** *n.* a statement offered to justify an action or decision or to explain the occurrence of an event. **5.** *vb.* see REASONING.

**reasonable accommodations** adjustments made within an employment or educational setting that allow an individual with a physical, cognitive, or psychiatric disability to perform essential functions. These adjustments might include installing ramps in an office cafeteria for wheelchair accessibility, altering the format of a test for a person with learning disabilities, or providing a sign language interpreter for a person with hearing loss. Provisions for reasonable accommodations must be made by employers and educators according to the 1990 Americans With Disabilities Act and the 1973 Rehabilitation Act. See UNDUE HARDSHIP.

**reasonable doubt** see BEYOND REASONABLE DOUBT.

**reasonable person standard** in law, a standard often used to judge the appropriateness of a person's actions by comparing them against the actions of a hypothetical reasonable person in the same situation. This standard is often invoked in cases involving allegations of negligence.

**reasoned action model** see THEORY OF REASONED ACTION.

**reasoning** *n.* **1.** thinking in which logical processes of an inductive or deductive character are used to draw conclusions from facts or premises. See DEDUCTIVE REASONING; INDUCTIVE REASONING. **2.** the sequence of arguments or proofs used to establish a conclusion in this way. —**reason** *vb.*

**reasoning test** a test of skills in inductive thinking, deductive thinking, or both. Examples include number series and classification of words (induction) as well as various kinds of syllogisms (deduction). See INDUCTIVE REASONING; DEDUCTIVE REASONING.

**reassociation** *n.* in HYPNOANALYSIS, a process of reviewing a forgotten or inhibited traumatic event so that the ex-

perience will be integrated with the individual's personality and consciousness.

**reassurance** *n.* a supportive technique used in many forms of psychotherapy and counseling to encourage a client to explore new relationships and feelings and to diminish the client's anxiety during this process.

**rebelliousness** *n.* resistance to authority, especially parental authority or its equivalent. —**rebellious** *adj.*

**rebirthing** *n.* 1. the therapeutic use of continuous, focused breathing and reflection, initially under the guidance of a rebirthing practitioner (a **rebirther**), to release tension, stress, and intense emotions and attain a state of deep peace and total relaxation that leads to personal growth and positive changes in health, consciousness, and self-esteem (i.e., a personal and spiritual "rebirth"). This type of therapy is increasingly being termed **breathwork** or **rebirthing breathwork**. [developed in the 1970s by California-based New Age guru Leonard Orr (1937– )] 2. a highly controversial form of therapy, now largely discredited (both scientifically and ethically), in which an individual attempts to reexperience being born (e.g., through hypnotic AGE REGRESSION) in order to resolve supposed pre- and perinatal conflicts and emotions and to develop a new attitude about life.

**rebound phenomenon** 1. an effect in which an activity or occurrence previously suppressed or prevented increases once the restrictions imposed on it are removed. The term is used particularly to denote the temporary reappearance of symptoms following abrupt discontinuation of a medication used for treatment. An example is **rebound insomnia**, in which the discontinuation of hypnotic agents, particularly short-acting BENZODIAZEPINES, results in a transitory return of insomnia, possibly of increased severity. Also called **rebound effect**. 2. a test that demonstrates loss of the ability of the cerebellum to control coordinated movement: If the individual extends the forearm against resistance and the resistance is suddenly removed, the hand or fist will snap back toward the chest. Also called **Holmes's phenomenon**.

**reboxetine** *n.* a drug that inhibits the reuptake of norepinephrine but has little or no effect on neurotransmission of serotonin, dopamine, acetylcholine, or histamine. It was the first selective norepinephrine reuptake inhibitor developed for clinical use as an antidepressant. It is not available in the United States.

**REBT** abbreviation for RATIONAL EMOTIVE BEHAVIOR THERAPY.

**rebus writing** the use of symbols to represent the sounds of language. If each phonetic sound is assigned its own unique symbol, the number of symbols needed within a writing system is substantially reduced.

**recall** 1. *vb.* to transfer prior learning or past experience to current consciousness; that is, to retrieve and reproduce information; to remember. 2. *n.* the process by which this occurs. See also FREE RECALL; RECALL METHOD.

**recall bias** the type of BIAS that often occurs when an individual reports a past behavior or event. Although such retrospective reporting may have accurate features, it also tends to include inaccurate aspects, such as a systematic undercount or overcount of the frequency with which a certain behavior occurred. This type of distortion has ramifications in survey methodology and eyewitness testimony.

**recall method** a technique of evaluating memory in

terms of the amount of learned material that can be correctly reproduced, as in an essay exam or in reproducing a list of words. Recall can be tested immediately after learning (see IMMEDIATE RECALL TEST) or after various delay intervals. Also called **recall test**. Compare RECOGNITION METHOD.

**recall score method** a technique in which the capacity to remember is given a numerical value according to the number of items or the proportion of items that can be recalled. Some memory tests, such as the CALIFORNIA VERBAL LEARNING TEST, produce recall scores that can be compared with normative values.

**recall test** see RECALL METHOD.

**recapitulation theory** 1. the hypothesis that the stages of embryological development of an organism mirror the morphological stages of evolutionary development characteristic of the species; that is, ONTOGENY recapitulates PHYLOGENY. The theory was abandoned early in the 20th century when embryology showed no consistent correspondence between ontogeny and phylogeny. [proposed by German biologist Ernst H. Haeckel (1834–1919)] 2. the extension of the principle of recapitulation to a child's mental and behavioral development. [proposed by G. Stanley HALL]

**receiver** *n.* 1. in COMMUNICATION THEORY, a device or process, such as a radio receiver or the sensory apparatus of hearing, that translates a signal into an intelligible message. In psychological applications of INFORMATION THEORY, the human being has sometimes been treated as a receiver; this analogy has motivated various aspects of research (e.g., the ability to cope with noise). 2. in TELEPATHY experiments, the participant who attempts to receive information transmitted by the SENDER. See also PERCIPIENT.

**receiver-operating characteristic curve (ROC curve)** in a detection, discrimination, or recognition task, the relationship between the proportion of correct *yes* responses (hit rate) and the proportion of incorrect *yes* responses (false-alarm rate). This is plotted on a graph to show an individual's sensitivity on the particular task: The axes are hit and false-alarm rates, points are marked to denote the different rates obtained under different conditions, and the points are connected to form a smooth arc. For example, a ROC curve may be used to indicate how well a person detects a specific tone in the presence of noise. A single quantitative INDEX of performance may be calculated from the curve as well. Also called **isosensitivity function**; **response-operating characteristic curve**. See also D PRIME.

**receiving hospital** a health facility that is equipped and staffed to handle new patients requiring diagnosis and preliminary treatment, such as people with a suspected mental disorder.

**recency effect** a memory phenomenon in which the most recently presented facts, impressions, or items are learned or remembered better than material presented earlier. This effect can occur in both formal learning situations and social contexts. For example, it can result in inaccurate ratings of a person's abilities due to the inordinate influence of the most recent information received about that person. Also called **law of recency**; **principle of recency**; **recency error**. Compare NEGATIVE RECENCY; PRIMACY EFFECT.

**receptive amimia** see AMIMIA.

**receptive amusia** see AMUSIA.

**receptive aphasia** see APHASIA; WERNICKE'S APHASIA.

**receptive character** in the psychoanalytic theory of Erich FROMM, a passive, dependent, and compliant, or conforming, personality type. It is roughly equivalent to the oral-receptive personality (see ORAL PERSONALITY) or the passive-dependent personality (see DEPENDENT PERSONALITY DISORDER) described by others. Such an individual is said to be of a **receptive orientation**.

**receptive field** the spatially discrete region and the features associated with it that can be stimulated to cause the maximal response of a sensory cell. In vision, for example, the receptive field of a retinal ganglion cell is the area on the retina (containing a particular number of photoreceptors) that evokes a neural response. An auditory neuron has a receptive field that can be described either by the range of tones to which it responds or by the receptors that cause this response. Also called **receptor field**.

**receptive language** the language perceived and mentally processed by a person, as opposed to that which he or she originates. A person's receptive language skills may differ markedly from his or her EXPRESSIVE LANGUAGE skills.

**receptive vocabulary** an individual's vocabulary as defined by the words that he or she can understand rather than the words that he or she normally uses. Also called **passive vocabulary**; **recognition vocabulary**. Compare PRODUCTIVE VOCABULARY.

**receptivity** *n.* the period of time when a female is responsive to sexual overtures from a male, typically (but not exclusively) around the time of ovulation. Receptivity has a connotation of passive female acceptance or tolerance of male sexual overtures. In contrast, PROCEPTIVITY conveys active solicitation of males by females. —**receptive** *adj.*

**receptor** *n.* **1.** the cell in a sensory system that is responsible for stimulus TRANSDUCTION. Receptor cells are specialized to detect and respond to specific stimuli in the external or internal environment. Examples include the RETINAL RODS and RETINAL CONES in the eye and the HAIR CELLS in the cochlea of the ear. Also called **receptor cell**. **2.** a SENSE ORGAN, such as the eye or the ear. See also NEURORECEPTOR.

**receptor adaptation** the tendency of a receptor to stop responding to a constant stimulus.

**receptor cell** see RECEPTOR.

**receptor field** see RECEPTIVE FIELD.

**receptor molecule** see NEURORECEPTOR.

**receptor potential** the electric potential produced by stimulation of a receptor cell, which is roughly proportional to the intensity of the sensory stimulus and may be sufficient to trigger an ACTION POTENTIAL in a neuron that is postsynaptic to the receptor. Also called **generator potential**.

**receptor site** a region of specialized membrane on the surface of a cell (e.g., a neuron) that contains receptor molecules that receive and react with particular messenger molecules (e.g., neurotransmitters).

**recessive allele** the version of a gene (see ALLELE) whose effects are manifest only if it is carried on both members of a HOMOLOGOUS pair of chromosomes. Hence, the trait determined by a recessive allele (the **recessive trait**) is apparent only in the absence of another version of that same

gene (the DOMINANT ALLELE). The term **autosomal recessive** is used to describe patterns of inheritance in which characteristics are conveyed by recessive alleles. For example, Tay–Sachs disease is an autosomal recessive disorder.

**recidivism** *n.* relapse. The term typically denotes the repetition of delinquent or criminal behavior, especially in the case of a habitual criminal, or **repeat offender**, who has been convicted multiple times. —**recidivist** *n., adj.* —**recidivistic** *adj.*

**recidivism rate** the frequency with which delinquent or criminal behavior recurs or patients relapse. It is sometimes used as a marker of the effects of interventions; for example, the percentage of people who commit rape following treatment intended to reduce the likelihood of committing this crime would indicate the effectiveness of the treatment.

**recipient factors** characteristics of a person receiving a persuasive message that influence the extent to which he or she is persuaded. Recipient factors include such characteristics as intelligence, self-esteem, and NEED FOR COGNITION.

**reciprocal** *n.* the number that when multiplied by another number gives a result of 1. The reciprocal of  $x$  is therefore  $1/x$  and that of  $1/x$  is  $x$ . So, for example,  $1/4$  is the reciprocal of 4.

**reciprocal altruism** a form of HELPING behavior that is sustained when one individual (A) helps another (B) and at some future time B helps A or A's offspring. The requirements of reciprocal altruism are (a) that the participants are able to identify each other individually, (b) that they are able to remember past actions and who helped whom, (c) that the cost to the helper is less than the gain to the recipient, and (d) that there is a mechanism to protect against CHEATING. GAME THEORY provides a theoretical system for understanding reciprocal altruism. See also ALTRUISM.

**reciprocal determinism** a concept that opposes exclusive emphasis on environmental determination of responses and asserts that a reciprocal relationship exists among environment, behavior, and the individual. That is, instead of conceptualizing the environment as a one-way determinant of behavior, reciprocal determinism maintains that the environment influences behavior, behavior influences the environment, and both influence the individual, who also influences them. This concept is associated with SOCIAL LEARNING THEORY.

**reciprocal inhibition** **1.** a technique in BEHAVIOR THERAPY that aims to replace an undesired response (e.g., anxiety) with a desired one by COUNTERCONDITIONING. It relies on the gradual substitution of a response that is incompatible with the original one and is potent enough to neutralize the anxiety-evoking power of the stimulus. See also SYSTEMATIC DESENSITIZATION. [devised by Joseph WOLPE] **2.** in neuroscience, the inhibition of one SPINAL REFLEX when another is elicited. [proposed by Charles Scott SHERRINGTON] **3.** a neural mechanism that prevents opposing muscles from contracting at the same time. **4.** the inability to recall two associated ideas or items because of their interference with each other.

**reciprocal innervation** the principle of MOTOR NEURON activity stating that when one set of muscles receives a signal for a reflex action, the antagonistic set of muscles receives a simultaneous signal that inhibits action. See RECIPROCAL INHIBITION.

**reciprocal liking** the attraction and cordial attitude that people have to others who are attracted to them.

**reciprocal punishment** a punishment that fits the crime. For example, a child who consistently neglects to feed his or her pet might be punished by forgoing a meal. In this way, the child gains insight into the consequences of the act. Compare EXPIATORY PUNISHMENT.

**reciprocal relationship** **1.** a correlation between two variables such that the value of one variable is the RECIPROCAL of the value of the other. For example, if a researcher is studying the average time taken to complete a task, then tasks completed per unit time (e.g., 2 per hour) have a reciprocal relationship with unit time taken per task (0.5 hours). **2.** the situation in which two variables can mutually influence one another; that is, each can be both a cause and an effect.

**reciprocal roles** the characteristic behavior patterns displayed by occupants of a particular position in a group or society in response to the behavior patterns of occupants of other positions.

**reciprocal-teaching procedure** an instructional process designed to facilitate dialogue between a teacher and student or among groups of students to increase reading comprehension. The teacher and students take turns leading the dialogue using four cognitive strategies: summarization, generation of questions, clarification, and prediction.

**reciprocal transformation** a TRANSFORMATION of raw data that involves (a) replacing the original data units with their RECIPROCALs and (b) analyzing the modified data. It can be used with nonzero data and is commonly used when distributions have SKEWNESS or clear OUTLIERS. For example, if the original unit of a study variable is time, a researcher might transform the raw data to produce an analysis of rate. Unlike other transformations, a reciprocal transformation changes the order of the original data. Also called **inverse transformation**.

**reciprocity** *n.* **1.** the quality of an act, process, or relationship in which one person receives benefits from another and, in return, provides an equivalent benefit. **2.** in PIAGETIAN THEORY, see COMPENSATION. —**reciprocal** *adj.*

**reciprocity law** a general principle that the magnitude of sensation is the product of the duration of the stimulus multiplied by its intensity. BLOCH'S LAW is an example of this principle for vision. Also called **reciprocity principle**.

**reciprocity norm** the social standard that people who help others will receive equivalent benefits from them in return. The expectation of reciprocity is common in many interpersonal encounters and relationships. Compare SOCIAL JUSTICE NORM; SOCIAL RESPONSIBILITY NORM.

**recoding** *n.* **1.** the translation of material from one form into another. For example, to facilitate memory, a series of random digits (e.g., 239812389712) could be recoded as a series of four-digit prices (\$23.98, \$12.38, \$97.12), thereby making the series much easier to recall. See CHUNKING; ELABORATION. **2.** a manipulation of an original variable in a data set so that it can be used in a different way in future analysis (e.g., reverse keying items, collapsing many categories into a few). See also TRANSFORMATION. —**recode** *vb.*

**recognition** *n.* **1.** a sense of awareness and familiarity experienced when one encounters people, events, or ob-

jects that have been encountered before or when one comes upon material that has been learned in the past. See also RECOGNITION METHOD. **2.** the acknowledgment of an achievement by bestowing awards or words of praise.

**recognition by components theory (RBC theory)** the theory that perception and recognition of objects entail their decomposition into a set of simple three-dimensional elements called GEONS, together with the skeletal structure connecting them. [proposed by U.S. psychologist Irving Biederman (1939– )]

**recognition memory** the ability to identify information as having been encountered previously. For example, a few days after taking a foreign language vocabulary test, a student might recognize one of the test words on a homework assignment yet be unable to recall its meaning. Recognition memory pertains only to declarative knowledge—factual material that is deliberately and consciously accessed—rather than to nondeclarative knowledge or other implicitly known information. Although the HIPPOCAMPUS conventionally is associated with memory, functional magnetic resonance imaging (fMRI) studies have suggested that the PARIETAL CORTEX may play a role in recognition memory. Activity in the lateral parietal cortex is correlated with the subjective impression that an item is old; it also increases with the amount of information retrieved. Existing models of recognition view the assessment of old–new similarity as a core process, and DUAL PROCESS THEORIES in particular posit that recognition is driven by a fast, automatic response based on stimulus FAMILIARITY and a slower, deliberative RECOLLECTION that involves episodic components, such as where and when the stimulus was seen. Interestingly, individuals may “recognize” stimuli they in fact have never experienced before, as in FALSE MEMORIES and other phenomena.

**Recognition Memory Test (RMT)** a verbal and non-verbal memory test that is used to detect neuropsychological deficits. In the Recognition Memory for Words subtest of the RMT, participants are presented with 50 stimulus words, one every 3 seconds, and must respond whether they consider each pleasant or unpleasant. Following the presentation of all 50 stimuli, each word is presented again with a distractor item, and participants must choose which of the two words was presented previously. The procedure is the same for the Recognition Memory for Faces subtest, in which the stimuli used are photographs of unfamiliar faces. Also called **Warrington Recognition Memory Test**. [originally developed in 1984 by British neuropsychologist Elizabeth Kerr Warrington]

**recognition method** a technique of measuring the amount of material learned or remembered by testing a person's ability to later identify the content as having been encountered. During recognition testing, previously studied items are presented along with new items, or LURES, and the participant attempts to identify those items that were studied and those that were not. Also called **recognition test**. Compare RECALL METHOD.

**recognition span** see READING SPAN.

**recognition technique** a type of READERSHIP-SURVEY TECHNIQUE in which consumers are asked to recall information about a product they say they recognize from previous exposure to its advertisements. Consumers also may be asked questions about advertisements that have never appeared in order to determine their suggestibility or false-recognition level. See also PANTRY-CHECK TECHNIQUE.

**recognition test** see RECOGNITION METHOD.

**recognition threshold** the shortest exposure to a stimulus at which recognition of that stimulus can occur. The shortest exposure at which words, for example, will be recognized is typically between 10 and 40 ms.

**recognition vocabulary** see RECEPTIVE VOCABULARY.

**recognitory assimilation** a type of SENSORIMOTOR INTELLIGENCE characterized by the selective use of a SCHEME. For example, an infant applies a sucking scheme to a nipple for nursing and to various nonnutritive objects (e.g., a thumb) for comfort, to aid sleep, or for some other purpose.

**recollection** *n.* remembrance, particularly vivid and detailed memory of past events or information pertaining to a specific time or place. See REMEMBER—KNOW PROCEDURE.

**recombinant DNA** a DNA molecule containing a fragment that has been inserted by genetic RECOMBINATION or some similar process, such as by using the techniques of GENETIC ENGINEERING. Recombinant DNA laboratory techniques involve the creation of novel or modified pieces of genetic material, which can then be inserted in the chromosomes of other species. These techniques allow for the study of the expression of a particular gene or the development of strains of bacteria that can produce natural substances of therapeutic value.

**recombination** *n.* the exchange of genetic material between paired chromosomes during the formation of sperm and egg cells. It involves the breaking and rejoining of CHROMATIDS of homologous chromosomes in a process called **crossing over**. It results in offspring having combinations of genes that are different from those of either parent.

**recompensation** *n.* an increase in the ability of an individual to adapt to the environment and alleviate stressful situations.

**reconditioning therapy** a form of BEHAVIOR THERAPY in which the client is conditioned to replace undesirable responses with desirable responses. See also AVERSION THERAPY.

**reconsolidation** *n.* the neurobiological stabilization of a reactivated memory. Research suggests that reconsolidation is necessary each time a memory is reactivated and that, prior to reconsolidation, the memory is unstable and susceptible to being changed or lost.

**reconstituted family** see STEPFAMILY.

**reconstruction** *n.* **1.** in psychoanalysis, the revival and analytic interpretation of past experiences that have been instrumental in producing emotional disturbance. **2.** the logical recreation of an experience or event that has been only partially stored in memory. —**reconstruct** *vb.*

**reconstructive memory** the process of remembering conceived as involving the recreation of an experience or event that has been only partially stored in memory. When a memory is retrieved, the process uses general knowledge and SCHEMAS for what typically happens in order to reconstruct the experience or event. See CONSTRUCTIVE MEMORY; REPEATED REPRODUCTION.

**reconstructive psychological evaluation** see PSYCHOLOGICAL AUTOPSY.

**reconstructive psychotherapy** psychotherapy directed toward basic and extensive modification of an individual's character structure by enhancing his or her insight into personality development, unconscious con-

licts, and adaptive responses. Examples are Freudian PSYCHOANALYSIS, Adlerian INDIVIDUAL PSYCHOLOGY, Jungian ANALYTIC PSYCHOLOGY, and the approaches of Karen D. HORNEY and Harry Stack SULLIVAN.

**reconstructive surgery** the surgical specialty or procedure concerned with the restoration or rebuilding of or improvement in shape and appearance of body structures that are missing, defective, diseased, damaged, or not considered aesthetically pleasing. See also COSMETIC SURGERY; PLASTIC SURGERY; POSTRECONSTRUCTIVE SURGERY.

**record keeping** an essential aspect of therapy, in which clinical notes about patients or clients are preserved for future reference, training purposes, or both. The extent of detail in record keeping varies with the situation, but some degree of record keeping is deemed standard procedure for all clinicians.

**recovered memory** the subjective experience of recalling a prior traumatic event, such as sexual or physical abuse, that has previously been unavailable to conscious recollection. Before recovering the memory, the person may be unaware that the traumatic event occurred. The existence of the phenomenon is controversial, particularly in the area of recovered memories of childhood sexual abuse. Because such recoveries may occur while the person is undergoing therapy, there is debate about the role that the therapist may have in suggesting or otherwise arousing them. Also called **repressed memory**. See also DISSOCIATIVE BARRIERS; FALSE MEMORY; POSTTRAUMATIC AMNESIA; PSEUDOMEMORY.

**recovered memory therapy** a form of treatment specifically designed to elicit from the client forgotten or repressed memories of traumatic childhood events, such as sexual abuse. Therapeutic techniques include HYPNOSIS and GUIDED IMAGERY. The therapy is controversial, provoking accusations and even legal disputes about the veracity of the memories retrieved and about the clinical validity and efficacy of the methods used.

**recovery** *n.* **1.** consistent progress in the measurable return of abilities, skills, and functions following illness or injury. **2.** a state of ongoing sobriety following long-term substance abuse.

**Recovery, Inc.** a SELF-HELP GROUP for individuals with serious mental health problems that focuses on will-training techniques for controlling temperamental behavior and changing members' attitudes toward their problems. Founded in 1937 by U.S. neuropsychiatrist Abraham A. Low (1891–1954), it is one of the oldest self-help organizations in the world.

**recovery of function** partial or full restoration of an ability that has previously been impaired as a result of damage (through disease or trauma) to the central or peripheral nervous system or to an organ or body part.

**recovery ratio** see DISCHARGE RATE.

**recovery time** **1.** the time required for a neural unit (e.g., a neuron or muscle cell) to recover from a response before it is capable of responding again. See REFRACTORY PERIOD. **2.** the time required for a physiological process to return to a baseline state after it has been altered by the response to a stimulus. An example is the REFRACTORY PHASE of the sexual-response cycle.

**recreation** *n.* rejuvenating and pleasurable pastimes or sports. —**recreational** *adj.*

**recreational drug** any substance that is used in a non-therapeutic manner for its effects on motor, sensory, or cognitive activities or on emotional state.

**recreational therapy** the use of individualized recreational activities (arts and crafts, sports, games, group outings, etc.) as an integral part of the rehabilitation or therapeutic process for individuals with physical or psychological disabilities or illnesses.

**recruitment** *n.* **1.** in neurophysiology, an increase in the number of neurons that respond as a stimulus is maintained or increased in strength. **2.** in auditory perception, a rapid increase in loudness after a stimulus exceeds the auditory threshold. It is characteristic of SENSORINEURAL DEAFNESS.

**recruitment bias** see SAMPLING BIAS.

**rectal administration** the administration of a drug by rectal insertion, usually in the form of a SUPPOSITORY, for absorption via the rectal mucosa.

**rectal reflex** see DEFECATION REFLEX.

**rectangular distribution** see UNIFORM DISTRIBUTION.

**recumbent** *adj.* see POSTURE.

**recuperative theory** a traditional but contested theory that the function of sleep is to allow recovery from mental or physical fatigue, to regather resources, or to reestablish internal HOMEOSTASIS.

**recurrent** *adj.* occurring repeatedly or reappearing after an interval of time or a period of remission. It is often applied to disorders marked by chronicity, relapse, or repeated episodes (e.g., recurrent depressive symptoms).

**recurrent circuit** a network of neurons and synapses in which a nerve impulse can make a complete path back to its starting point. This occurs in both POSITIVE FEEDBACK circuits and NEGATIVE FEEDBACK circuits. See also SELF-EXCITING CIRCUIT.

**recurrent collateral inhibition** a negative-feedback system that prevents rapid, repeated firing of the same MOTOR NEURON. To accomplish this, one branch of an axon loops back toward the cell body of the neuron and communicates with an inhibitory RENSCHAW CELL. The Renshaw cell in turn inhibits the neuron.

**recurrent dream** a dream that occurs repeatedly. Sigmund FREUD saw recurrent dreams as punishment dreams—rather than WISH FULFILLMENT dreams—and linked them to a masochistic need for self-criticism arising from fantasies of excessive ambition. Carl JUNG regarded recurrent dreams as more revealing of the UNCONSCIOUS than single dreams, and he believed that in a dream series the later dreams often throw light on the earlier ones (see SERIAL INTERPRETATION). Other psychologists see recurrent dreams as an attempt to come to terms with disturbing experiences.

**recurring-figures test** a test of memory in which a person is shown a series of cards featuring generally nonsensical figures or geometric forms. Some figures appear on more than one card, and the participant must try to remember whether a figure has appeared on a previous card.

**recursion** *n.* in GENERATIVE GRAMMAR, a process in which certain grammatical rules can be repeatedly applied, with the output of each application being input to the next, in principle indefinitely. An example is the rule  $S \rightarrow S$  and  $S$ , where  $S$  denotes a sentence; the rule is recursive be-

cause it can be used to generate a potentially infinite string of sentences conjoined by *and*. A well-known example of recursion is the nursery rhyme “The House That Jack Built” (*This is the dog that worried the cat that killed the rat that ate the malt . . .*). —**recursive** *adj.*

**recursive** *adj.* describing a rule or procedure that is applied repeatedly for a finite number of times, with the output of each application becoming the input to the next. For example, a **recursive algorithm** might be used to help identify the set of predictors that relate maximally to the outcome variable.

**recursive model** a set of relationships in which the effects flow in one direction only and there are no feedback loops such that effects are sometimes also causes. In STRUCTURAL EQUATION MODELING, for example, a recursive model in which independent variables lead to dependent variables without feedback loops is generally more easily estimated. Compare NONRECURSIVE MODEL.

**red-green blindness** a form of color blindness in which certain shades of red and green are confused. See also DEUTERANOPIA.

**red-green responses** a concept of color vision in which certain retinal cone receptors have excitatory responses whereas others have inhibitory responses to the same wavelength of light. Because red and green are at opposite ends of the spectrum, it is assumed that a red excitatory response is accompanied by a green inhibitory response.

**reintegration** *n.* **1.** the process of reorganizing, or re-integrating, mental processes after they have been disorganized by a psychological condition, particularly a psychosis. **2.** more generally, restoration to health or to normal condition and functioning. **3.** the process of recovering or recollecting memories from partial cues or reminders, as in recalling an entire song when a few notes are played. **4.** the elicitation of a response by a part of the stimulus complex that was involved in the initial learning. Also called **reintegration**. —**reintegrative** *adj.*

**redirected behavior** actions that do not appear relevant to the context in which they are performed. See DISPLACEMENT BEHAVIOR.

**red nucleus** a NUCLEUS in the brainstem that receives input from the cerebellum and gives rise to the RUBROSPINAL TRACT. In lower vertebrates, it is important in the control of limb movement. In humans, it has a role in crawling in infancy.

**redout** *n.* a condition resulting from blood being pushed into the head and eyes by negative g-forces. Capillaries in the eyes engorge and some may burst, causing the visual field to appear red. Redout is experienced, for example, by fighter pilots. Compare BLACKOUT.

**red reflex** the red color reflected through a person's pupil when light is directed toward the retina along the LINE OF REGARD of the observer's eye. It occurs because the light is reflected by the vascular retina; the absence of a red reflex may indicate lens opacities (cataract) or retinal abnormalities.

**red sage** a bushy shrub, *Salvia miltiorrhiza*, whose roots are known to Chinese herbalists as *dan shen* and have traditionally been used (powdered or whole) to treat cardiac and vascular disorders, including heart attacks, stroke, and atherosclerosis. Red sage has been shown in some studies to decrease the clotting capability of blood; it should not be



taken in combination with prescribed blood thinners, as bleeding problems may result. Other studies suggest red sage may interfere with the development of scarlike fibers in the liver (associated primarily with chronic hepatitis and consumption of large quantities of alcohol) and may be effective in preventing the growth of cancer cells and the replication of the HIV virus, but these potential uses have not been confirmed. Side effects of red sage are mild and may include itching, stomach upset, and decreased appetite. The active compounds are miltirone and other diterpene quinones, which act as PARTIAL AGONISTS at the benzodiazepine–GABA receptor complex (see GABA<sub>A</sub> RECEPTOR). Because red sage is a partial agonist, it may enhance the sedative effects of drugs that are full BENZODIAZEPINE AGONISTS, leading to extreme drowsiness.

**reduced model** in the GENERAL LINEAR MODEL, a model that has fewer parameters than the most highly parameterized model in a set of models to be compared. Usually, the smaller model is said to be “nested” within the larger, more highly parameterized model.

**reductio ad absurdum** **1.** a form of valid logical argument in which either (a) a premise is disproved by showing that it leads to a contradiction and is thus absurd or (b) a premise is indirectly proved by showing that its negation leads to a contradiction and is thus absurd. **2.** in general language, a persuasive technique in which a position is presented in its most extreme or absurd form in order to discredit it. Such a move belongs more to SOPHISTRY than to logic. [Latin, literally: “reduction to the absurd”]

**reductionism** *n.* the strategy of explaining or accounting for some phenomenon or construct by claiming that, when properly understood, it can be shown to be some other phenomenon or construct, where the latter is seen to be simpler, more basic, or more fundamental. The term is mainly applied to positions that attempt to explain human culture, society, or psychology in terms of animal behavior or physical laws. In psychology, a common form of reductionism is that in which psychological phenomena are reduced to biological phenomena, so that mental life is presented as merely a function of biological processes. Compare EMERGENTISM. See also EPIPHENOMENON; IDENTITY THEORY; MATERIALISM.

**reduction to essence rule** in FUZZY TRACE THEORY, the assumption that people of all ages are biased to extract the gist from a message.

**redundancy** *n.* **1.** the property of having more structure than is minimally necessary. Biological systems or structures often have redundancy so that impairment or failure of a unit will not prevent adequate functioning of the whole. See also DISTRIBUTIONAL REDUNDANCY. **2.** in linguistics and information theory, the condition of those parts of a communication that could be deleted without loss of essential content. In this sense, redundancy includes not only obvious padding, such as repetitions, tautologies, and polite formulas, but also the multiple markings of a given meaning that are required by many conventions of grammar and syntax. For example, in the sentence *All three men were running*, the plurality of the subject is signaled four times: by *all*, *three*, and the plural forms *men* and *were*. It is largely owing to redundancies of this kind that one can so often guess the correct content of messages that have been only partially heard. Redundancy has been estimated to constitute roughly 50% of most written and spoken English. —**redundant** *adj.*

**redundancy analysis** a multivariate statistical model for examining the degree to which one set of variables or scores may maximally relate to a second such set. A researcher derives a number of weighted, linear combinations of interest from the first set of variables and examines the relation between these combinations and the variance in the second set. Redundancy analysis is an alternative to CANONICAL CORRELATION ANALYSIS.

**redundant coding** in ergonomics, coding a display or control on two or more physical dimensions, such as by both shape and color. Redundant coding enhances CONTROL DISCRIMINABILITY.

**redundant prepuce** an excessive growth of prepuce (foreskin). The condition may be pathological if the excess foreskin prevents the prepuce from being drawn back over the glans, which may be necessary to prevent inflammation from trapped smegma or urine.

**reduplicated babbling** babbling in which the same syllable is repeated (e.g., *ba-ba-ba-ba*). It is characteristic of infants between about 8 and 10 months of age.

**reduplicative paramnesia** a false memory or delusion characterized by the subjective certainty that a familiar person or place has been duplicated, such as the belief that the hospital where one is treated has been duplicated and relocated to another site. Patients may believe they are simultaneously in the two locations. This condition can be caused by a variety of neurological disorders. Brain lesions commonly involve the frontal lobes, the right hemisphere, or both. See also CAPGRAS SYNDROME.

**reeducation** *n.* **1.** training that focuses on replacing maladaptive cognitions, affects, or behaviors with healthier, more adaptive ones or on relearning forgotten skills. **2.** a form of psychological treatment in which the client learns effective ways of handling and coping with problems and relationships through a form of nonreconstructive therapy, such as RELATIONSHIP THERAPY, BEHAVIOR THERAPY, PERSUASION THERAPY, nonanalytic group therapy, or REALITY THERAPY. Also called **reeducative therapy**.

**reenactment** *n.* in some forms of psychotherapy, the process of reliving traumatic events and past experiences and relationships while also reexperiencing the original emotions associated with them. See also ABREACTION.

**reentrant** *adj.* in neuroscience, relating to or describing the two-way exchange of signals between neural arrays, enabling the integration of activity in different regions of the brain.

**reentry** *n.* **1.** the return of an individual to the community after experiencing life in an institution (e.g., psychiatric hospital, prison). **2.** the return of a mental health professional or other worker from a disaster site after assisting victims suffering from trauma and other forms of psychological stress.

**reevaluation counseling** a therapeutic approach involving COCOUNSELING between individuals. In the process, two people take turns counseling and being counseled. The process starts with one individual (acting as counselor) asking the other (acting as client) a provocative question and continues with other steps, such as asking the client to cite two or three minor upsets that have recently occurred. The client is encouraged to respond emotionally, to work through the emotions, and then to act as the counselor for the other person. Also called **reevaluation cocoun-**

**seling.** [developed in the 1950s by U.S. personal counselor Harvey Jackins (1916–1999)]

**reference distribution** see THEORETICAL DISTRIBUTION.

**reference group** a group or social aggregate that individuals use as a standard or frame of reference when selecting and appraising their own abilities, attitudes, or beliefs. Reference groups include formal and informal groups that the individual identifies with and admires, statistical aggregations of noninteracting individuals, imaginary groups, and even groups that deny the individual membership. See also ASPIRATIONAL GROUP; SOCIAL COMPARISON THEORY. Compare MEMBERSHIP GROUP.

**reference group theory** a general conceptual framework that assumes that individuals' attitudes, values, and self-appraisals are shaped, in part, by their identification with, and comparison to, REFERENCE GROUPS. A reference group theory of SELF-CONCEPT, for example, assumes that individuals compare their economic, intellectual, social, and cultural achievements to those attained by members of their reference group. Similarly, a reference group theory of values suggests that individuals adopt the values expressed by the majority of the members of their reference group. [proposed in 1942 by U.S. sociologist Herbert H. Hyman (1918–1985)]

**reference memory** in animal cognition, the representation of an association between objects, spatial locations, or other stimuli that remains consistent across several trials of an experimental session and is used to guide behavior. MATCHING TO SAMPLE and various other tasks involving simultaneous or successive DISCRIMINATION are commonly used to assess reference memory in nonhuman animals. For example, a pigeon presented with both a green and a red disk is rewarded with a food pellet for pecking the green one. If the green disk remains the correct choice across all trials in which the two objects are presented, the pigeon relies on reference memory to retain this information and choose the correct disk. Compare WORKING MEMORY. [initially described in 1978 by German-born U.S. psychologist Werner Konstantin Honig (1932–2001) and subsequently elaborated by U.S. physiological psychologist David Stuart Olton (1943–1994) and various colleagues]

**reference population** **1.** a subset of a TARGET POPULATION that serves as a standard against which research findings are evaluated. For example, consider an investigator examining the effectiveness of eating disorder prevention programs at 4-year colleges and universities in the United States. In such a situation, the educational institutions that have not implemented any program would serve as the comparison reference population. **2.** the target population itself.

**referent** *n.* in linguistics, the thing (or process or situation) in the external physical world to which a word or phrase refers. In the structuralist account of language (see STRUCTURALISM), verbal SIGNS (words) are held to consist of a SIGNIFIER (physical form) and signified (concept indicated by the signifier), with no need for any external referent.

**referential attitude** an expectancy attitude sometimes observed in certain individuals with schizophrenia or other forms of psychopathology who are seeking justification, via environmental aspects, for their IDEAS OF REFERENCE or DELUSIONS OF REFERENCE.

**referential signal** a communication signal given by a nonhuman animal that appears to provide information

about specific objects or events in the environment. Vervet monkeys have different types of calls specific to eagles, leopards, and snakes, three major predators. Many species of birds and monkeys have calls that are specific to the presence of food. Some researchers argue that referential signals are a form of symbolic communication and might be the primitive basis of words in language.

**referent power** a capacity to influence others that is based on their identification with, attraction to, or respect for the influencer.

**referral** *n.* **1.** the act of directing a patient to a therapist, physician, agency, or institution for evaluation, consultation, or treatment. **2.** the individual who is so referred. —**refer** *vb.*

**referred sensation** a sensation (e.g., pain, cold) that is localized (i.e., experienced) at a point different from the area stimulated. For example, when the elbow is struck, the mechanical stimulation of the nerve may cause tingling of the fingers.

***r* effect size** symbol for EFFECT-SIZE CORRELATION.

**reflectance** *n.* the ratio of the intensity of light reflected from a surface (reflected flux) to the intensity of light shining on a surface (incident flux). The **reflectance spectrum** of a surface describes the percentage of reflected photons at each wavelength in the visible spectrum.

**reflected appraisals** beliefs about how one is regarded by others based on the evaluative feedback that one receives from others. Some theories of self have treated reflected appraisals as the most important basis for SELF-CONCEPT, claiming that people learn about themselves chiefly from others. See LOOKING-GLASS SELF; SYMBOLIC INTERACTIONISM.

**reflected glare** see DIRECT GLARE.

**reflection–impulsivity** *n.* a dimension of COGNITIVE STYLE based on the observation that some people approach tasks impulsively, preferring to act immediately on their first thoughts or impressions, whereas others are more reflective, preferring to consider a range of alternatives before acting. This aspect of cognitive style—CONCEPTUAL TEMPO—can be assessed using the MATCHING FAMILIAR FIGURES TEST. Also called **reflectivity–impulsivity**. [first described in 1963 by Jerome KAGAN]

**reflection of feeling** a statement made by a therapist or counselor that is intended to highlight the feelings or attitudes implicitly expressed in a client's communication and to draw them out so that they can be clarified. Also called **reflection response**.

**reflection response** **1.** in the RORSCHACH INKBLOT TEST, a testee's response that an inkblot represents a bilateral reflection of one half of the card. That is, the image is perceived not as a single entity across both halves of the card but as two entities in the two halves, one entity being a mirror image of the other. **2.** see REFLECTION OF FEELING.

**reflective** *adj.* describing or displaying behavior characterized by significant forethought and slow, deliberate examination of available options. Compare IMPULSIVE. See REFLECTION–IMPULSIVITY. —**reflectivity** *n.*

**reflective abstraction** the ability to arrive at new knowledge by reflecting on knowledge one already possesses without the need for additional information. [postulated by Jean PIAGET]

**reflective consciousness** aspects of consciousness that enable it to refer to its own activities. Also called **self-consciousness**; **self-reflection**.

**reflective functioning** see MENTALIZATION.

**reflectivity–impulsivity** *n.* see REFLECTION–IMPULSIVITY.

**reflex** *n.* any of a number of automatic, unlearned, relatively fixed responses to stimuli that do not require conscious effort and that often involve a faster response than might be possible if a conscious evaluation of the input were required. An example is the PUPILLARY REFLEX. The concept of a reflex was first proposed by René DESCARTES, who supposed, before the distinction between sensory and motor nerves had been made, that the sensory impulses flowed to the spinal cord, where they were reflected back down to the muscles.

**reflex arc** a NEURAL CIRCUIT that is involved in a reflex. In its simplest form, it consists of an afferent, or sensory, neuron that conducts nerve impulses from a receptor to the spinal cord, where it connects directly or via an INTERNEURON to an efferent motor neuron that carries the impulses to an effector, that is, a muscle or gland. See also DISYNAPTIC ARC; MONOSYNAPTIC ARC; POLYSYNAPTIC ARC.

**reflex attention** see PRIMARY ATTENTION.

**reflex epilepsy** a type of epilepsy marked by seizures that are triggered by sensory input, such as sound, touch, or light (e.g., MUSICOGENIC EPILEPSY, PHOTOGENIC EPILEPSY).

**reflex inhibition** the reduction or prevention of a reflex because an incompatible reflex is occurring or has just occurred.

**reflex integration** the combining of two reflexes into a single, more complex response.

**reflexive behavior** responses to stimuli that are involuntary or free from conscious control (e.g., the salivation that occurs with the presentation of food) and therefore serve as the basis for CLASSICAL CONDITIONING. Compare PLANNED BEHAVIOR; VOLUNTARY BEHAVIOR.

**reflexivity** *n.* **1.** a bidirectional relationship of cause and effect. **2.** see STIMULUS EQUIVALENCE. **3.** in QUALITATIVE RESEARCH, the self-referential quality of a study in which the researcher reflects on the assumptions behind the study and especially the influence of his or her own motives, history, and biases on its conduct.

**reflex latency** the time that elapses between application of a stimulus and the start of a reflex response. See also CENTRAL REFLEX TIME.

**reflexogenous zone** an area of the body that when stimulated by particular stimuli elicits a particular reflex. For example, the sole of the foot is the reflexogenous zone for the BABINSKI REFLEX.

**reflexology** *n.* **1.** a school of psychology based on research dealing solely with the outwardly observed and fixed manifestations and reactions of the human being. It is credited to Vladimir M. BEKHTEREV, who taught that all behavior could be constructed from simple reflexes as the elementary units or building blocks. **2.** the physiological study of involuntary automatic responses to stimuli, particularly as they affect the behavior of humans and other animals. **3.** a form of COMPLEMENTARY AND ALTERNATIVE MEDICINE based on the principle that there are reflex points or zones in the feet and hands that correspond to every

part of the body and that manipulating and pressing on these points have a variety of beneficial health effects. —**reflexologist** *n.*

**reflex reserve** a repertoire of responses that are implanted and accumulate within an organism through reinforcement but are emitted only after reinforcement is withdrawn and extinction takes place. [proposed in 1938 by B. F. SKINNER]

**reflex strength** the potential strength of a response to a reflex stimulus (e.g., the potential for a STARTLE RESPONSE if an organism is touched), often measured by REFLEX LATENCY.

**reflex sympathetic dystrophy** overactivity of the SYMPATHETIC NERVOUS SYSTEM, which may occur following local injury, usually to a limb, that is associated with damage to nerves and blood vessels. It results in pain; limb disuse; shiny, thin skin; loss of hair; and bone demineralization.

**reformatory paranoia** a type of MEGALOMANIA expressed as a personality trait in individuals who concoct plans to reform the world and try to convince others to follow their ideas.

**reformism** *n.* any position that advocates change in an institution, law, practice, or theory without challenging its fundamental characteristics or tenets. Reformists accept the need for modernization and the correction of abuses but tend to decry violent or extreme change; their methods may include publicity, education, and lobbying. Compare RADICALISM. —**reformist** *n., adj.*

**refraction** *n.* **1.** the bending of light rays as they pass from one medium to another, such as from air into water. **2.** the bending of light as it passes through the cornea and lens of the eye so that it is focused on the retina. **3.** the clinical description of the efficacy of the refractive process for an individual eye.

**refractive error (refractive disorder)** a defect in the eye such that it does not refract, or bend, incident light into perfect focus on the retina, thus reducing visual acuity. Examples include ASTIGMATISM, HYPEROPIA, and MYOPIA. Correction requires the use of glasses, contact lenses, or surgery. Also called **error of refraction**.

**refractive index** (symbol: *n*) a measure of the extent to which a ray of light is bent (refracted) in passing from one transparent medium to another. The refractive index of a transparent medium is equal to the ratio of the speed of light in a vacuum to the speed of light in that medium. The value of *n* can vary with the wavelength of the light.

**refractory** *adj.* **1.** resistant to control, as in a disease or disorder that fails to respond to a typically efficacious therapy. **2.** in neurophysiology, describing a neuron or muscle cell that is unable to respond to a stimulus. See REFRACTORY PERIOD. **3.** stubborn, uncooperative, or unmanageable. —**refractoriness** *n.*

**refractory period** a period of inactivity after a neuron or muscle cell has undergone excitation. As the cell is being repolarized, it will not respond to any stimulus during the early part of the refractory period, called the **absolute refractory period**. In the subsequent **relative refractory period**, it will respond only to a stronger than normal stimulus.

**refractory phase** the period following orgasm during which further sexual arousal or orgasm is not possible. It

occurs only in the male SEXUAL-RESPONSE CYCLE; females can have immediate further arousal and multiple orgasms. The length of the refractory phase increases with age.

**reframing** *n.* a process of reconceptualizing a problem by seeing it from a different perspective. Altering the conceptual or emotional context of a problem often serves to alter perceptions of the problem's difficulty and to open up possibilities for solving it. In psychotherapy, for example, the manner in which a client initially frames a problem may be self-defeating. Part of the therapist's response might be to reframe the problem and the thoughts or feelings that the client associates with it, so as to provide alternative ways to evaluate it. Compare **RESTATEMENT**.

**refusal rate** the proportion of potentially eligible respondents for a survey or study who choose not to participate for a variety of reasons (e.g., survey takes too much time, respondent lacks interest in topic). The refusal rate must be taken into account when calculating the likely RESPONSE RATE for a survey. Also called **nonresponse rate**.

**refutability** *n.* see **FALSIFIABILITY**.

**refutation** *n.* in logic and philosophy, the act or process of showing that a statement, theory, or claim is false or invalid. In this sense, denying an argument or claim is not the same as refuting it. —**refute** *vb.*

**REG** abbreviation for random event generator. See **RANDOM NUMBER GENERATOR**.

**regeneration of nerves** see **NEURAL REGENERATION**.

**regenerative medicine** a branch of research and applied medicine that studies the body's capacities for and processes of self-healing, as well as the ability to create new tissues for transplant. See also **STEM CELL**.

**regimen** *n.* a particular course of action designed to achieve a specific goal. In medicine, it often refers to a detailed treatment program involving diet, exercise, rest, medication, and other therapeutic measures. Various forms of psychotherapy, such as **COGNITIVE BEHAVIOR THERAPY**, may also make use of regimens during the course of treatment. Such programs typically include a schedule and specify the components, methods, and duration of the program.

**regional cerebral blood flow (rCBF; RCBF)** the rate of flow of blood through a particular area of the brain, measured by **BRAIN IMAGING** techniques such as positron emission tomography and single photon emission computed tomography. It is used to assess the involvement of different brain regions in various cognitive functions.

**regional localization theory** the theory that the cerebral cortex has specialized regions that involve specific sensory and motor functions. Localization tends to become less specific in more frontal regions of the brain.

**register** *n.* a form of a language associated with specific social functions and situations or with particular subject matter. Examples include the different types of language considered appropriate for a scientific meeting, a kindergarten class, or a barroom story. Register differs from **DIALECT** in that it varies with social context rather than with the sociological characteristics of the user. See **ELABORATED CODE**.

**registered nurse (RN)** a professional nurse who has completed an accredited educational program and passed a state licensing examination. Registered nurses provide services such as observing and recording patient symptoms

and reactions, developing a treatment plan in consultation with the attending physician, administering medication, and educating the patient or family about self-care methods.

**Regitine** *n.* a trade name for **PHENTOLAMINE**.

**regression** *n.* a return to a prior, lower state of cognitive, emotional, or behavioral functioning. This term is associated particularly with psychoanalytic theory, denoting a situation in which the individual reverts to immature behavior or to an earlier stage of **PSYCHOSEXUAL DEVELOPMENT** when threatened with overwhelming external problems or internal conflicts. —**regress** *vb.* —**regressive** *adj.*

**regression analysis** any of several statistical techniques that are used to describe, explain, or predict (or all three) the variance in an outcome or **DEPENDENT VARIABLE** using scores on one or more predictor or **INDEPENDENT VARIABLES**. Regression analysis is a subset of the **GENERAL LINEAR MODEL**. It yields a **REGRESSION EQUATION** as well as an index of the relationship between the dependent and independent variables. For example, a regression analysis could show the extent to which 1st-year grades in college (outcome) are predicted by such factors as standardized test scores, courses taken in high school, letters of recommendation, and particular extracurricular activities.

**regression artifact** an experimental finding that has been distorted by extreme measurements and the associated influence of **REGRESSION TOWARD THE MEAN**.

**regression coefficient** in a **REGRESSION ANALYSIS**, the **WEIGHT** associated with a unit change in a specific independent (predictor) variable on the dependent (outcome) variable, given the relationship of that predictor to other independent variables already in the model. This value may be standardized (see **STANDARDIZATION**) with a variance equal to 1 (in which case, it is called a **BETA COEFFICIENT**), or it may be unstandardized and expressed in the units of the outcome variable being measured (in which case, it is called a **B coefficient**). Also called **regression weight**.

**regression constant** the value of a response or **DEPENDENT VARIABLE** in a **REGRESSION EQUATION** when its associated predictor or **INDEPENDENT VARIABLES** equal zero (i.e., are at baseline levels). Graphically, this is equivalent to the **Y-INTERCEPT**, or the point at which the **REGRESSION LINE** crosses the *y*-axis.

**regression diagnostics** a set of graphical and numerical techniques routinely used by researchers to check for **VIOLATIONS OF ASSUMPTIONS** in the application of **REGRESSION ANALYSIS** to particular data sets. For example, it is assumed that the relationship between the **INDEPENDENT VARIABLES** and the **DEPENDENT VARIABLE** is linear, that the variables have been measured accurately, and that any prediction errors resulting from the **REGRESSION EQUATION** are independent and normally distributed with equal variance and a mean of zero. If the data do not possess such characteristics, the analysis may not be appropriate and thus its results may not be valid. See **DIAGNOSTICS**; **RESIDUAL ANALYSIS**.

**regression-discontinuity design (RDD)** a type of **QUASI-EXPERIMENTAL DESIGN** in which a specific threshold value or **CUTOFF SCORE** is used to assign participants to treatment conditions. Theoretically, individuals near the threshold value are comparable and only differ on the basis

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of their treatment assignment, which enables a researcher to estimate treatment effects. For example, a researcher might use a regression-discontinuity design to investigate worker performance, assigning employees who work more than a certain number of hours to receive a reward while those below that threshold do not. The analysis of such a design involves examining the REGRESSION LINES for those receiving the treatment (i.e., receiving a reward) versus those not receiving the treatment (i.e., no reward). A continuous straight line for the two groups indicates no effect of reward on performance, whereas any break or jump (discontinuity) in the line across the groups indicates a treatment effect.

**regression effect** see REGRESSION TOWARD THE MEAN.

**regression equation** the mathematical expression of the relationship between a dependent (outcome or response) variable and one or more independent (predictor) variables that results from conducting a REGRESSION ANALYSIS. It often takes the form  $y = a + bx + e$ , in which  $y$  is the dependent variable,  $x$  is the independent variable,  $a$  is the INTERCEPT,  $b$  is the REGRESSION COEFFICIENT, and  $e$  is the ERROR TERM. Also called **regression formula**; **regression model**.

**regression in the service of the ego** in psychoanalytic theory, the adaptive circumvention of normal ego functioning in order to access primitive material (see PRIMARY PROCESS), often associated with the creative process. [first described by Swiss-born U.S. psychoanalyst Ernst Kris (1900–1957)]

**regression line** a straight or curved line fitting a set of data points and usually obtained by a LEAST SQUARES REGRESSION. A regression line is a graphic representation of the REGRESSION EQUATION expressing the hypothesized relationship between an outcome or DEPENDENT VARIABLE and one or more predictors or INDEPENDENT VARIABLES; it summarizes how well the proposed model actually fits the sample data obtained. Data points that do not fall exactly on the line indicate deviations in model fit.

**regression model** see REGRESSION EQUATION.

**regression sum of squares** (symbol:  $SS_{\text{regression}}$ ) a number indicating the amount of variance in a DEPENDENT VARIABLE that can be explained by the variance in one or more associated INDEPENDENT VARIABLES. It thus describes how well a particular model fits the observed data. For example, in LINEAR REGRESSION it is used to calculate a COEFFICIENT OF DETERMINATION or a COEFFICIENT OF MULTIPLE DETERMINATION, and in ANALYSIS OF VARIANCE it is used to determine the total SUM OF SQUARES and calculate an F RATIO. Compare ERROR SUM OF SQUARES.

**regression toward the mean** the tendency for extremely high or extremely low scores to become more moderate (i.e., closer to the MEAN) upon retesting over time. In experimental studies, this tendency threatens INTERNAL VALIDITY in that shifts of scores may occur for reasons unrelated to study manipulations or treatments. For example, regardless of the interventions a researcher is investigating to improve mathematics performance (e.g., extra study sessions, providing positive or negative reinforcement), low scoring students will tend to perform slightly better on the next math exam, whereas high scoring students will tend to perform slightly worse. RANDOM ASSIGNMENT to treatment and control conditions may be used to minimize the influence of regression toward the mean on experimental

results. Also called **regression effect**. See REGRESSION ARTIFACT.

**regression tree** a diagram displaying a set of conditions and their associations with a particular outcome variable as determined via a REGRESSION ANALYSIS. An initial node contains the outcome of interest (e.g., annual income under \$15,000), from which branches extend to additional nodes according to the values of a studied predictor variable (e.g., level of education). Further branches extend from these subnodes based on additional predictors (e.g., area of residence, type of employment), with the process continuing until no more predictors are available in the data set or until a predetermined number of nodes is obtained. Regression trees provide a convenient, visually appealing method for examining large amounts of data. See also CART ANALYSIS.

**regression weight** see REGRESSION COEFFICIENT.

**regressive reconstructive approach** a technique in psychotherapy in which the client is encouraged to reexperience traumatic situations with their full emotional intensity. Through such concurrent or subsequent mechanisms as TRANSFERENCE and INTERPRETATION, the approach is posited to help bring about development of greater emotional adaptation and maturity in the client.

**regress on** to determine the extent to which a given DEPENDENT VARIABLE ( $y$ ) can be explained or predicted by a number of INDEPENDENT VARIABLES ( $x$ s). For example, a researcher may be interested in learning how scores on a measure of relationship commitment vary as a function of age, relationship status, time in relationship, and shared experiences. That is, the researcher may regress  $y$  on  $x$ . See REGRESSION ANALYSIS.

**regret** *n.* an emotional response to remembrance of a past state, condition, or experience that one wishes had been different.

**regret theory** a model of decision making that states that people's fear of, and previous experience with, regretting poor choices plays a large role in motivating or deterring their behavior in situations involving uncertainty. For example, a person who regrets buying, on the advice of a good friend, a used car that subsequently requires expensive repairs likely will disregard the friend's advice in the future in order to avoid the potential for similar regret. Within this framework, regret is considered to have two distinct components—the wish that one had chosen differently and the self-recrimination involved in believing one made an error in judgment. Associated with BEHAVIORAL ECONOMICS, regret theory is a parallel to PROSPECT THEORY. See also ANTICIPATORY REGRET. [originally proposed in 1982 by British economists Graham C. Loomes (1950– ) and Robert Sugden (1949– )]

**regular** *adj.* in linguistics, denoting a word or a form of a word that conforms to the usual patterns of INFLECTION in a language. Compare IRREGULAR.

**regulation of consciousness** any activity aimed at managing or changing the state and contents of CONSCIOUSNESS, including pain avoidance, pleasure seeking, and variety seeking. Self-destructive activities, such as self-mutilation and chemical intoxication, have also been interpreted as efforts to regulate states of consciousness.

**regulatory behavior** the actions of an organism that are geared to maintaining physiological balance by meeting PRIMARY NEEDS.

**regulatory drive** any generalized state of arousal or motivation that helps preserve physiological HOMEOSTASIS and thus is necessary for the survival of the individual or organism, such as hunger and thirst. Compare NONREGULATORY DRIVE.

**regulatory focus theory** a conceptual framework for motivation and behavior that considers people to be fundamentally either promotion oriented or prevention oriented when making decisions and taking action in pursuit of a goal. According to the theory, promotion-focused self-regulation is concerned with nurturance and accomplishment needs and is focused on the pursuit of wishes and aspirations. As such, it results in sensitivity to positive outcomes and to relative pleasure from gains. Conversely, prevention-focused self-regulation is concerned with safety and security needs and is focused on meeting duties and obligations. As such, it results in sensitivity to negative outcomes and to relative pain from losses. One's disposition toward either obtaining gains or avoiding losses influences one's dominant motivations, which in turn affect one's behavioral choices. For example, in addressing the issue of smoking cessation, regulatory focus theory suggests that a smoker may be motivated either to approach desired end states (e.g., improved lung capacity) or to avoid undesired end states (e.g., illness). Thus, antismoking messages framed to match the smoker's particular regulatory focus should be more effective in convincing him or her to quit smoking than those that do not match. Indeed, regulatory focus theory has numerous implications for designing informative and persuasive messages. Other areas in which the theory has been applied include communication more generally, administration and organizational management, and athletic performance. [proposed in 1997 by U.S. psychologist E. Tory Higgins (1946– )]

**regulatory system** a group of interacting mechanisms that act to maintain HOMEOSTASIS or any other stable state in an organ or organism.

**REGWQ test** Ryan–Einot–Gabriel–Welsch multiple range test: a procedure used to evaluate if there are statistically significant differences between independent groups in a ONE-WAY ANALYSIS OF VARIANCE of a BALANCED DESIGN. It is one of many such MULTIPLE COMPARISON TESTS. Also called **Ryan's method**. [Thomas A. Ryan Jr., U.S. statistician; Israel Einot, Israeli statistician; K. Ruben Gabriel (1929–2003), German-born U.S. statistician; Roy E. Welsch, U.S. statistician]

**rehabilitation** *n.* the process of bringing an individual to a condition of health or useful and constructive activity, restoring to the fullest possible degree his or her independence, well-being, and level of functioning following injury, disability, or disorder. It involves providing appropriate resources, such as treatment or training, to enable such a person (e.g., one who has had a stroke) to redevelop skills and abilities he or she had acquired previously or to compensate for their loss. Compare HABILITATION.

**rehabilitation center** a facility devoted to restoring individuals with mental or physical disorders or impairments, including those with multiple problems, to an adequate level of functioning. Rehabilitation centers provide services such as vocational training, occupational and physical therapy, educational therapy, recreational therapy, and psychological therapy and counseling.

**rehabilitation counseling** a profession requiring specialized training to assess the needs of individuals with

physical, mental, or emotional disabilities, to provide (or facilitate the provision of) services designed to meet those needs, and to assist such individuals in achieving independent, productive lives. Among the services that **rehabilitation counselors** provide are diagnosis and treatment planning; mental health counseling; career counseling, job-placement services, and other vocational guidance or support; life care planning; assistive technology consultation; case management and service coordination; and advocacy for the rights of those with disabilities to have access to opportunity (in education or work), appropriate environmental accommodations (e.g., in housing, schools, offices), and community life.

**rehabilitation engineering** a discipline that integrates multiple areas of research and techniques from various fields to develop products, processes, and environments to improve the quality of life for people with disabilities. See also BIOENGINEERING.

**rehabilitation medicine** see PHYSICAL MEDICINE AND REHABILITATION.

**rehabilitation neuropsychology** a specialty area that studies and treats cognitive, behavioral, emotional, and social disturbances in individuals following stroke, traumatic brain injury, spinal cord injury, and other conditions involving neurological damage. The goal of **rehabilitation neuropsychologists** is to optimize the health, independence, and quality of life of their clients by (a) evaluating their EXECUTIVE FUNCTIONS and other abilities through observation of their behavior and administration of assessment instruments (e.g., NEUROPSYCHOLOGICAL TESTS); (b) providing cognitive retraining and other clinical interventions to facilitate skill reacquisition or substitution; (c) training and educating other professionals involved in their clients' treatment; (d) participating in the development of public policy and other programs to benefit their clients; and (e) advocating on behalf of their clients (e.g., with insurance providers). The field is cross-disciplinary in nature, having relevance to such areas as community psychology, clinical psychology, counseling psychology, family medicine, health psychology, neurology, and psychiatry. See also CLINICAL NEUROPSYCHOLOGY; COGNITIVE REHABILITATION.

**rehabilitation program** the overall system of rehabilitation services provided in support of an individual with an illness, injury, or physical or mental disability, disorder, or impairment. A program is typically customized to meet the specific needs of each individual and may include physical therapy, recreational therapy, occupational therapy, and psychotherapy; educational and vocational programs; and appropriate specialty services, such as SPEECH THERAPY and ORIENTATION AND MOBILITY TRAINING.

**rehabilitation psychology** a specialty branch of psychology devoted to the application of psychological knowledge and understanding to the study, prevention, and treatment of disabilities and chronic health conditions across the lifespan. Using a team-based approach, **rehabilitation psychologists** working in settings such as hospitals, inpatient and outpatient rehabilitation centers, nursing homes, and sports-injury centers consider the various factors (biological, psychological, social, environmental, and political) that affect functioning to help individuals attain optimal physical, psychological, and interpersonal independence. They also play a leading role in preventive care, caregiver support, and health care policy issues.

**rehabilitation team** a group of health care specialists who coordinate their efforts in the rehabilitation of patients on an individual basis. A rehabilitation team may include plastic surgeons, orthopedic surgeons, neurologists, psychologists, psychiatrists, physical therapists, occupational therapists, and others, depending on the needs of the patient.

**rehearsal** *n.* **1.** preparation for a forthcoming event or confrontation that is anticipated with some level of discomfort or anxiety. By practicing what is to be said or done in a future event the individual may lessen the stress of the event itself. Rehearsal may be carried out in psychotherapy with the therapist coaching or role-playing to help the individual practice for the event. See also BEHAVIOR REHEARSAL; MENTAL REHEARSAL; ROLE PLAY. **2.** the repetition of information in an attempt to maintain it longer in memory. According to the DUAL-STORE MODEL OF MEMORY, rehearsal occurs in SHORT-TERM MEMORY and may allow a stronger trace to then be stored in LONG-TERM MEMORY. Although rehearsal implies a verbal process, it is hypothesized to occur in other modalities as well. See also DEPTH-OF-PROCESSING HYPOTHESIS.

**rehospitalization** *n.* see READMISSION.

**Reichenbach phenomenon** an energy field allegedly emanating from crystals, magnets, and living things (both plants and animals). Adherents claim that it can be made visible by KIRLIAN PHOTOGRAPHY but is otherwise discernible only by certain "sensitive" individuals. The phenomenon was first described by the Austrian chemist and metallurgist Baron Karl von Reichenbach (1788–1869), who held it to be a manifestation of an all-pervading physical force that he named **Od** or **Odyle** after the Norse god Odin. Reichenbach considered this force to be distinct from electricity and magnetism but similar to the ANIMAL MAGNETISM of Franz Anton MESMER. These ideas later influenced the Austrian psychoanalyst Wilhelm Reich (1897–1957) and his theory of ORGONE energy. The Reichenbach phenomenon is now mainly cited by advocates of CRYSTAL HEALING. See also AURA; EFFLUVIUM.

**Reicher–Wheeler effect** see WORD-SUPERIORITY EFFECT. [Gerald M. Reicher (1939– ) and Daniel D. Wheeler (1942– ), U.S. psychologists]

**Reichian analysis** a highly controversial and largely discredited system of psychotherapy, developed by Austrian psychoanalyst Wilhelm Reich (1897–1957), in which ORGASTIC POTENCY is emphasized as the criterion of mental health. Notwithstanding the widespread judgment of the approach as alternative (see ALTERNATIVE PSYCHOTHERAPY) and unsupported by research, Reich made early contributions to psychology in his theories concerning character analysis, emotional catharsis, and authoritarianism.

**reification** *n.* treating an abstraction, concept, or formulation as though it were a real object or material thing. For instance, the statement *You can't fool nature* would be an example of reification if taken literally. In logical argument, reification is regarded as a FALLACY. Also called **objectification**.

**reiki** *n.* a complementary therapy that aims to promote physical, emotional, and spiritual healing through the therapist's placement of hands slightly off of or lightly touching the body, a technique that is believed to improve the flow of life energy in the patient. See also COMPLEMENTARY AND ALTERNATIVE MEDICINE. [Japanese, "universal life energy"]

**reincarnation** *n.* the doctrine found in some early Greek philosophy, in BUDDHISM and HINDUISM, and in some spiritualist traditions that the human psyche survives death and is reborn in other bodies (in most forms of the doctrine, in other human bodies). See FUTURE LIVES; METEMPSYCHOSIS.

**reinforce** *vb.* to enhance or increase the probability of a response by arranging a dependent relationship, or contingency, between the response and a REINFORCER.

**reinforced practice** a learning procedure in which participants receive incentives for performing specific desired behaviors. For example, children with a fear of the dentist may become more cooperative when praised and rewarded for allowing dental instruments in their mouths for several brief periods before the dentist actually begins work. The technique has been shown to be effective with a variety of behaviors in numerous experimental and real-world situations. The reinforcement need not be complex to be effective and may even be provided automatically, such as a computer screen showing a smiley face when a student presses the button for the correct answer to a study question. In OPERANT CONDITIONING, the term generally denotes the process of SHAPING.

**reinforcement** *n.* **1.** in OPERANT CONDITIONING, a process in which the frequency or probability of a response is increased by a dependent relationship, or contingency, with a stimulus or circumstance (the REINFORCER). See REINFORCEMENT CONTINGENCY. **2.** the procedure that results in the frequency or probability of a response being increased in such a way. **3.** in CLASSICAL CONDITIONING, the presentation of an unconditioned stimulus after a conditioned stimulus. See also NEGATIVE REINFORCEMENT; POSITIVE REINFORCEMENT; SCHEDULE OF REINFORCEMENT.

**reinforcement contingency** the contingency (relationship) between a response and a REINFORCER. The contingency may be positive (if the occurrence of the reinforcer is more probable after the response) or negative (if it is less probable after the response). Reinforcement contingencies can be arranged by establishing dependencies between a particular type of response and a reinforcer (as when a rat's lever presses are followed by presentation of food), or they can occur as natural consequences of a response (as when a door opens when pushed) or by accident (see ACCIDENTAL REINFORCEMENT). Also called **response–reinforcement contingency**.

**reinforcement counseling** a behavioral approach to counseling based on the idea that behavior is learned and can be predictably modified by various techniques that strengthen or weaken it through schedules of positive or negative reinforcement. See also REINFORCEMENT THERAPY.

**reinforcement delay** the time between a response and the occurrence of a REINFORCER.

**reinforcement of alternative behavior** a procedure that involves eliminating reward or reinforcement for an undesired behavior and instead rewarding a desired behavior. Also called **rewarded alternative method**.

**reinforcement schedule** see SCHEDULE OF REINFORCEMENT.

**reinforcement sensitivity theory (RST)** as originally described in 1970 by British psychologist Jeffrey Alan Gray (1934–2004), a model in which personality reflects the functioning of three major biological systems that operate independently of one another through distinct neuroanatomical structures. The BEHAVIORAL APPROACH

SYSTEM (BAS) responds to conditioned positive (i.e., reinforcing) stimuli by initiating approach behavior, whereas the BEHAVIORAL INHIBITION SYSTEM (BIS) responds to conditioned negative (i.e., aversive, intense, or frightening) stimuli by initiating avoidance behavior. Individual differences in the reactivity of the BAS and BIS to their characteristic inputs determine one's sensitivity to rewards and to punishments, respectively, which in turn underlie the personality traits of impulsivity and anxiety. The third system, the **fight-flight system (FFS)**, responds to unconditioned unpleasant or painful stimuli. In light of inconsistent experimental findings on personality measures and behavioral responses to stimuli, Gray and colleague Neil McNaughton modified RST in 2000. This **revised reinforcement sensitivity theory (r-RST)** has numerous differences from the original version, prominent among them the changed roles of the three component systems and the notion that they interact to influence behavior. More specifically, the BAS is seen as responding to all reinforcing stimuli, whether conditioned or unconditioned. The BIS is reconceptualized as a mechanism for resolving conflict that involves incompatible goals or threatening stimuli that cannot be avoided. It mediates activation of the BAS and the FFS (now termed the **fight-flight-freeze system [FFFS]**), generating anxiety and behaviors associated with information gathering and risk assessment until approach or avoidance occurs. The FFS is reconceived as responsible for mediating escape from both conditioned and unconditioned aversive stimuli in nonconflict situations; its activation is associated with a state of fear. This distinction in r-RST between anxiety (i.e., attentiveness to danger) and fear (i.e., devotion to getting away) is another important difference from the original theory and has had a major effect on motivation and emotion research. The theory also has been applied within clinical psychology to understand the mechanisms underlying depressive disorders, anxiety disorders, substance abuse, and other psychopathology.

**Reinforcement Survey Schedule (RSS)** an assessment form that elicits information about activities, stimuli, and situations that a person finds rewarding or pleasurable. This information is used by behavior therapists to help patients organize contingencies that increase positive behaviors or decrease negative behaviors. [developed in 1967 by U.S. psychologists Joseph R. Cautela (1927–1999) and Robert A. Kastenbaum]

**reinforcement therapy** a therapeutic process based on OPERANT CONDITIONING and the use of positive reinforcement to initiate and maintain behavioral change. See also REINFORCEMENT COUNSELING.

**reinforcer** *n.* a stimulus or circumstance that produces REINFORCEMENT when it occurs in a dependent relationship, or contingency, with a response. Also called **reinforcing stimulus**. See NATURAL REINFORCER.

**reinforcer effect** a situation in which one variable strengthens the relationship between two other variables. For example, if performance on a free recall task is enhanced when participants studying words for the memory task are in a positive mood, positive mood has demonstrated a reinforcer effect on study recall. See also INTERACTION EFFECT; MEDIATOR. Compare SUPPRESSOR EFFECT.

**reinforcing cause** a condition that tends to maintain a healthy or maladaptive behavior or behavioral pattern in an individual. An example is when special attention is given to a person who is ill, which can contribute either to a speedy recovery or to a delayed recovery. It is typical,

however, to use the term in relation to negative or maladaptive consequences.

**reinforcing stimulus** see REINFORCER.

**reinstatement following extinction** the return of a response to an extinguished conditioned stimulus due to exposure to an unconditioned stimulus. For example, a person who gets a headache from using earbuds may develop an aversion to using them. This aversion may become extinguished after the person tries using earbuds again a few times without getting a headache. However, if the person then gets a headache (for any reason), the aversive response to using earbuds may return (or be reinstated).

**reintegration** *n.* see REDINTEGRATION.

**reintegrative stage** see SCHAIER'S STAGES OF COGNITIVE DEVELOPMENT.

**Reissner's membrane** a thin layer of tissue within the auditory LABYRINTH that separates the SCALA VESTIBULI from the SCALA MEDIA inside the cochlea. Also called **vestibular membrane**. [Ernst Reissner (1824–1878), German anatomist]

**Reitan Indiana Aphasia Screening Test** a 32-item test developed to evaluate language, CONSTRUCTIONAL PRAXIS, calculation, and right-left orientation. It is part of the HALSTEAD-REITAN NEUROPSYCHOLOGICAL BATTERY. [Ralph M. Reitan (1922– ), U.S. psychologist]

**Reitan-Kløve Sensory Perceptual Examination** a sensory examination, developed as part of the HALSTEAD-REITAN NEUROPSYCHOLOGICAL BATTERY, that includes measures of tactile, visual, and auditory sensory function on both sides of the body. Also called **Sensory Perceptual Examination**. [Ralph M. Reitan; Hallgrim Kløve (1927–2010), Norwegian neuropsychologist]

**Reiz limen (RL)** the German name for ABSOLUTE THRESHOLD.

**rejected child** see SOCIOMETRIC STATUS.

**rejecting-neglecting parenting** see PARENTING.

**rejection** *n.* **1.** denial of love, attention, interest, or approval. **2.** an antagonistic or discriminatory attitude toward a group of people.

**rejection error** see TYPE I ERROR.

**rejection method** a technique that uses an algorithm to generate and select random values for a study. Values are automatically included in or excluded from the study sample depending on whether they fall within a particular range. Also called **rejection sampling**.

**rejection region** see CRITICAL REGION.

**rejection value** see CRITICAL VALUE.

**relapse** *n.* the recurrence of a disorder or disease after a period of improvement or apparent cure. The term also refers to recurrence of substance abuse after a period of ABSTINENCE.

**relapse prevention** use of various procedures to reduce the risk of relapse of a condition, disease, or disorder. For example, clients or patients might be taught cognitive and behavioral skills before the termination of therapy. Relapse prevention has a particular role in disorders, such as addiction and depression, with high relapse rates. See also TERTIARY PREVENTION.



**relapse rate** the incidence of clients or patients who had recovered or improved but who later experienced a recurrence of their disorder or disease.

**related-measures design** see WITHIN-SUBJECTS DESIGN.

**relatedness** *n.* a feeling of connection with other people, often accompanied by affection, trust, and a sense of personal security. —**related** *adj.*

**relatedness needs** see EXISTENCE, RELATEDNESS, AND GROWTH THEORY.

**related samples** see DEPENDENT SAMPLES.

**related-samples *t* test** see DEPENDENT-SAMPLES *T* TEST.

**relation** *n.* **1.** any kind of meaningful connection between two or more events or entities. The specific nature of this connection varies with the context and discipline. In science, for example, a relation is primarily a causal relation. See CAUSALITY; RELATIONSHIP. **2.** an individual connected to another by blood, marriage, or adoptive ties. See also KINSHIP.

**relational aggression** behavior that manipulates or damages relationships between individuals or groups, such as bullying, gossiping, and humiliation.

**relational discrimination** in conditioning, a DISCRIMINATION based on the relationship between or among stimuli rather than on absolute features of the stimuli. For example, a nonhuman animal can be trained to respond to the larger of two stimuli, regardless of their absolute size.

**relational frame** a hypothesized unit that permits one to describe the relationships between new entities based on previous experience. Entities can stand in several relationships to one another, such as the relationship of sameness or the relationship of larger than. Through experience with such relationships, frames are learned into which new entities can be placed. For example, after many experiences with conditions in which one thing is larger than another, and having learned in those situations to say, for example, "The cow is bigger than the dog," one then knows to say "My cat is bigger than yours" when comparing the two animals for the first time.

**relational frame theory (RFT)** a psychological theory of human language and cognition that is derived from the principles of BEHAVIOR ANALYSIS and forms the theoretical basis for ACCEPTANCE AND COMMITMENT THERAPY (ACT). According to the theory, and in the words of its originator, "STIMULUS EQUIVALENCE is a special case of arbitrarily applicable relational responding based on sameness." The theory draws on two central ideas. One proposes, and experimental findings confirm, that humans and nonhumans can respond to nonarbitrary relations between stimuli, but some organisms may also bring relational responding under the control of context. Such abstracted relational responding would then be arbitrarily applicable to any events, needing only contextual cues to occur. The second idea is the behavior analytic account of GENERALIZED IMITATION, grammatical frames, and other phenomena, proposing that organisms can learn overarching behavioral classes containing virtually unlimited numbers of members. Although stimulus equivalence and similar phenomena seem to show novel performances, RFT proposes that such performances may be learned; that is, the action of relating two arbitrary stimuli itself has a history. It also proposes, among other concepts, that VERBAL BEHAVIOR is a particular kind of relating—that is, a contextually

situated and learned ability to relate events arbitrarily. It is through this concept of verbal behavior that the theory particularly informs ACT. [proposed by U.S. psychologist Steven C. Hayes (1948– )]

**relational learning** learning to differentiate among stimuli on the basis of relational properties (e.g., the larger of two stimuli) rather than absolute properties (e.g., the stimulus that has a given size).

**relational mapping** the ability to apply what one knows about one set of elements to a different set of elements. For example, knowing the relation of A to B, one can deduce that C is related to D in the same way that A is related to B.

**relational primacy hypothesis** the hypothesis that ANALOGICAL THINKING is available early in infancy; that is, young infants can comprehend or solve a problem in one event by comparing it with another. See also RELATIONAL SHIFT.

**relational psychoanalysis** a psychoanalytic approach incorporating aspects of several theoretical perspectives, such as OBJECT RELATIONS THEORY and INTERPERSONAL THEORY. It focuses on an individual's sense of self and patterns of relating to others as developed in early relationships, and in treatment it emphasizes the importance of the relationship between a patient and analyst or therapist in helping the patient understand those patterns and form new ones. See also ONE-PERSON PSYCHOLOGY; TWO-PERSON PSYCHOLOGY.

**relational research** see CORRELATIONAL RESEARCH.

**relational self** the aspect of SELF-CONCEPT derived from connections and role relationships with significant others. [first described in 1996 by U.S. social psychologists Marilyn B. Brewer and Wendi Gardner]

**relational shift** the developmental change in ANALOGICAL THINKING that occurs when the child moves from focusing on perceptual similarity to focusing on relational similarity when solving problems.

**relational turbulence** **1.** the disorder, doubts, and problems relationship partners may experience as they transition from casual dating to more committed forms of involvement. Relationship turbulence is caused by the disruption of ordinary routines, lifestyles, and plans that occurs when people become interdependent, spending more time together and beginning to coordinate their activities and goals. It also reflects uncertainty and possible ambivalence about the relationship. Relationship turbulence usually abates as partners become settled in their routines and more confident about their future as a couple. **2.** the cognitive, emotional, and behavioral disruption that occurs in a relationship during a significant life transition, such as when one partner returns from deployment or when a couple copes with infertility.

**relational word** see FUNCTION WORD.

**relational world** in psychoanalysis, particularly OBJECT RELATIONS THEORY and SELF PSYCHOLOGY, an individual's contextual orientation to and understanding of others based on his or her early relationships.

**relationship** *n.* **1.** an association or connection between objects, events, variables, or other phenomena. See also CORRELATION. **2.** a continuing and often committed association between two or more people, as in a family, friendship, marriage, partnership, or other interpersonal link in

which the participants have some degree of influence on each other's thoughts, feelings, and actions. In psychotherapy, the THERAPIST–PATIENT RELATIONSHIP is thought to be an essential aspect of patient improvement. As with other relationships in life, therapeutic relationships characterized by trust, warmth, respect, and understanding are more likely to result in positive outcomes for the patient.

**relationship conflict** see INTRAGROUP CONFLICT.

**relationship leader** see SOCIAL-EMOTIONAL LEADER.

**relationship-motivated** *adj.* denoting a LEADERSHIP STYLE in which the leader concentrates on building and maintaining good relationships within the group, minimizing friction, and providing support and encouragement so that group and individual morale remains high. It can be assessed using the LEAST PREFERRED COWORKER SCALE. Also called **relationship-oriented**. Compare TASK-MOTIVATED.

**relationship role** one of a set of GROUP ROLES adopted by members whose performance of particular behaviors maintains or enhances interpersonal relationships within the group. Also called **socioemotional role**. Compare TASK ROLE.

**relationship system** the system of interpersonal bonds recognized in a particular culture, society, or group. The term is broader than KINSHIP NETWORK or kinship system as it includes relationships that are not based on blood or AFFINITY.

**relationship therapy** **1.** any form of psychotherapy that emphasizes the nature of the relationship between client and therapist and views it as the primary therapeutic tool and agent of positive change. Relationship therapy is based on providing emotional support and creating an accepting atmosphere that fosters personality growth and elicits attitudes and past experiences for examination and analysis during sessions. **2.** any form of psychotherapy focused on improving the relationship between individuals by helping them resolve interpersonal issues and modify maladaptive patterns of interactions, thereby fostering the healthy psychosocial growth of all parties. It is an umbrella term encompassing COUPLES THERAPY and FAMILY THERAPY. [first described by U.S. social worker Jessie Taft (1882–1960) and child psychiatrist Frederick H. Allen (1890–1964)]

**relationship training** any set of techniques designed to improve relations between people, as in HUMAN RELATIONS TRAINING.

**relative accommodation** the amount of ACCOMMODATION of the eyes that is possible when CONVERGENCE is kept constant.

**relative deprivation** the perception by an individual that the amount of a desired resource (e.g., money, social status) he or she has is less than some comparison standard. This standard can be the amount that was expected or the amount possessed by others with whom the person compares himself or herself. The concept was introduced as a result of studies of morale in the U.S. Army during World War II; conducted by U.S. sociologist Samuel A. Stouffer (1900–1960) and colleagues, the studies indicated that soldiers were dissatisfied if they believed they were not obtaining as many military rewards and benefits as their peers. In 1966, British sociologist Walter Garrison Runciman (1934– ) distinguished between **egoistic relative deprivation**, the perceived discrepancy between an individual's own current position and the comparison

standard, and **fraternalistic relative deprivation**, the perceived discrepancy between the position that the person's ingroup actually has and the position the person thinks it ought to have. According to some research, social unrest tends to be greatest in areas with high levels of relative deprivation. See also EQUITY THEORY; SOCIAL COMPARISON THEORY; SOCIAL EXCHANGE THEORY.

**relative efficiency** **1.** for two tests (A and B) of the same hypothesis operating at the same SIGNIFICANCE LEVEL, the ratio of the number of cases needed by Test A to the number needed by Test B for each to have the same statistical POWER. The relative efficiency value enables a researcher to determine whether there is a preferred statistical approach for evaluating a particular phenomenon. **2.** for two parameter ESTIMATES (A and B), a value reflecting the ratio of the STANDARD ERROR of Estimate A to the standard error of Estimate B.

**relative frequency** the frequency of a type or category of event expressed as a proportion of the total frequency of all types or categories. For example, if 47 out of 100 participants answered *yes* to a particular question on a survey, the relative frequency of *yes* responses would equal .47 (i.e., the number of *yes* responses divided by the total number of *yes*, *no*, and *I don't know* responses).

**relative frequency distribution** a tabular display of the number of observations at each level of a variable compared to the total number of observations obtained. For example, suppose a researcher asks 200 participants to describe their level of extraversion on a 5-point scale and obtains the following results: 32 individuals indicate they are extremely introverted; 24 individuals indicate they are somewhat introverted; 50 individuals indicate they are neither introverted nor extraverted; 38 individuals indicate they are somewhat extraverted; and 56 individuals indicate they are extremely extraverted. In the corresponding relative frequency distribution, these values can be expressed both as proportions—the number of observations per level divided by all observations (i.e., .16, .12, .25, .19, and .28)—and as percentages—the number of observations per level divided by all observations multiplied by 100 (i.e., 16%, 12%, 25%, 19%, and 28%). This type of table is useful in identifying which scores or values are most likely to occur at which variable level. Also called **relative distribution**; **relative frequency table**. See FREQUENCY DISTRIBUTION.

**relative judgment** see COMPARATIVE JUDGMENT.

**relative measurement** a context-specific assessment approach in which the value of an individual score depends on its comparison to other scores within a group or subgroup. For example, one might evaluate beauty by assigning a person a number that reflects his or her attractiveness compared to others of the same age, the same occupation, and so forth. Compare ABSOLUTE MEASUREMENT.

**relative pitch** the ability to identify the pitch of a sound accurately by mentally comparing it to a known reference pitch. Compare ABSOLUTE PITCH.

**relative position** see INTERPOSITION.

**relative refractory period** see REFRACTORY PERIOD.

**relative risk** see RISK RATIO.

**relative scotoma** see SCOTOMA.

**relative sensitivity** the capacity to discriminate differ-

ences in stimuli (e.g., in terms of intensity or quality) when one stimulus is judged in relation to another. When only one stimulus is presented at a time, sensitivity to stimulus differences is reduced.

**relativism** *n.* any position that challenges the existence of absolute standards of truth or value. In EPISTEMOLOGY, relativism is the assertion that there are no absolute grounds for truth or knowledge claims. Thus, what is considered true will depend on individual judgments and local conditions of culture, reflecting individual and collective experience. Such relativism challenges the validity of science except as a catalog of experience and a basis for ad hoc empirical prediction. In ethics, relativism is the claim that no moral absolutes exist. Thus, judgments of right and wrong are based on local culture and tradition, on personal preferences, or on artificial principles. Standards of conduct vary enormously across individuals, cultures, and historical periods, and it is impossible to arbitrate among them or to produce universal ethical principles because there can be no means of knowing that these are true. In this way, relativism in epistemology and relativism in ethics are related. See also MORAL NIHILISM; PARTICULARISM; POST-MODERNISM. —**relativist** *adj.*

**relaxation** *n.* **1.** abatement of intensity, vigor, energy, or tension, resulting in calmness of mind, body, or both. **2.** the return of a muscle to its resting condition after a period of contraction. —**relax** *vb.*

**relaxation technique** any therapeutic technique to induce relaxation and reduce stress. Also called **relaxation training**.

**relaxation therapy** use of muscle-relaxation techniques to aid in the treatment of emotional tension. Also called **therapeutic relaxation**. See also DIFFERENTIAL RELAXATION; PROGRESSIVE RELAXATION.

**relay nucleus** a NUCLEUS that relays nerve impulses from one tract to another within the central nervous system. For example, the LATERAL GENICULATE NUCLEI receive fibers from the optic tract and send fibers to the visual cortex. Relay nuclei are especially prominent in the THALAMUS.

**relearning method** see SAVINGS METHOD.

**release** *n.* **1.** the letting go of physical, mental, or emotional tension or pent-up energy, tending toward relaxation or arousal reduction. See also RELEASER. **2.** discharge of an individual from any type of correctional or therapeutic residential facility. Also called **institutional release**.

**release from proactive interference** restoration of the capacity to readily remember items of one type after switching categories of materials to be recalled. For example, successively trying to memorize dates leads to the buildup of PROACTIVE INTERFERENCE, causing a decline in immediate recall of dates; switching to remembering names releases proactive interference, and retention improves (i.e., names are remembered more easily than dates were).

**release inhibitor** a substance that prevents or interferes with the release of hormones or other agents from glands or tissue cells. For example, SOMATOSTATIN is a release-inhibiting hormone (or factor) that inhibits the normal rate of release of growth hormone from the pituitary gland.

**release phenomenon** unrestricted activity of a lower

brain center when a higher center with inhibitory control is incapacitated, damaged, or excised.

**releaser** *n.* in ethology, a stimulus that, when presented under the proper conditions, initiates a FIXED ACTION PATTERN (see also MODAL ACTION PATTERN). For example, a red belly on a male stickleback fish elicits aggressive behavior from other male sticklebacks but is attractive to gravid female sticklebacks. Also called **sign stimulus**. See also INNATE RELEASING MECHANISM; VACUUM ACTIVITY.

**release theory of humor** the theory that people laugh out of a need to release pent-up psychic energy. In Sigmund FREUD's version of this theory, humor permits the expression of normally taboo impulses, and the energy it releases is that normally used in keeping such impulses out of consciousness. See also INCONGRUITY THEORY OF HUMOR.

**release therapy** **1.** any therapy whose ultimate value is in the release of deep-seated, forgotten, or inhibited emotional and psychic pain through open expression and direct experience of anger, sorrow, or hostility in the therapy context. The technique is used, for example, in PLAY THERAPY and in PSYCHODRAMA. **2.** a form of therapy in which young children reenact anxieties, frightening experiences, and traumatic events with such materials as figurines, stuffed animals, and water guns. [developed in the 1930s by U.S. psychiatrist David M. Levy (1892–1977)]

**release zone** the region of a PRESYNAPTIC axon terminal where synaptic vesicles discharge neurotransmitter molecules into the synaptic cleft. See SYNAPSE.

**releasing hormone** any of a class of HYPOTHALAMIC HORMONES that travel via the HYPOTHALAMIC–PITUITARY PORTAL SYSTEM to control the release of hormones by the anterior pituitary gland. Examples are CORTICOTROPIN-RELEASING FACTOR and GONADOTROPIN-RELEASING HORMONE.

**relevance–sensitivity tradeoff** in research, the balance struck between measuring dependent variables accurately and specifically and obtaining results with applicability to contexts beyond the original study. The relevance–sensitivity tradeoff should be considered by a researcher when designing a study.

**relevant–irrelevant test** a question format used in POLYGRAPH testing in which physiological responses accompanying questions relevant to a crime (e.g., “Did you steal from the office?”) are compared with responses accompanying questions irrelevant to the crime (e.g., “Are you 24 years old?”). In criminal investigations, it has been increasingly replaced by the CONTROL QUESTION TEST. See also GUILTY KNOWLEDGE TEST.

**reliability** *n.* the trustworthiness or consistency of a measure; that is, the degree to which a test or other measurement instrument is free of RANDOM ERROR, yielding the same results across multiple applications to the same sample. See ALTERNATE-FORMS RELIABILITY; INTERNAL CONSISTENCY; RELIABILITY COEFFICIENT; RETEST RELIABILITY.

**reliability coefficient** (symbol:  $r_{xx}$ ) an index describing the consistency of scores across contexts (e.g., different times, items, or raters). Its value, ranging from 0 to 1, provides an estimate of the amount of obtained score variance that is due to TRUE VARIANCE rather than to error. The larger this coefficient, the more confident a researcher may be that scores obtained at different times under similar conditions with the same participants will be alike. Typically, reliability coefficients are considered to be acceptable

if they are above .80. Also called **coefficient of reliability**; **index of reliability**; **reliability index**.

**reliability diagonal** the MAIN DIAGONAL in a CORRELATION MATRIX along which the values of 1 that are typically given are replaced by RELIABILITY COEFFICIENTS indicating the consistency of each measure used. This allows a researcher to evaluate the reliability of each measure quickly and easily.

**reliability index** see RELIABILITY COEFFICIENT.

**reliability of components** the average RELIABILITY of scores obtained from the component subsets that make up a test. Components are identified by grouping a large set of items into clusters with similar content through rational or intuitive approaches or through the use of an empirical method (e.g., FACTOR ANALYSIS, PRINCIPAL COMPONENTS ANALYSIS). The INTERNAL CONSISTENCY of each of the component sets is determined and then used to estimate the overall reliability of the larger test. For example, a researcher might factor analyze a 20-item social support questionnaire, identify three content subscales, calculate the internal consistency of scores for those three subscales, and then use that information to determine the test's overall reliability.

**reliability of composites** see COMPOSITE RELIABILITY.

**reliability sampling** a form of ACCEPTANCE SAMPLING in which samples of, for example, a consumer product are inspected to determine their acceptability against quality specifications at some future date. This is often a test of the product's future life.

**reliability theory** any of various conceptualizations about why scores on a test or performance task are consistent across contexts. Three prominent reliability theories are CLASSICAL TEST THEORY, GENERALIZABILITY THEORY, and ITEM RESPONSE THEORY. Each considers error differently and thus it is important for researchers to specify which conceptualization underlies their research.

**relief** *n.* a POSITIVE EMOTION that occurs as a response to a threat that has abated, disappeared, or failed to materialize.

**religion** *n.* a system of spiritual beliefs, practices, or both, typically organized around the worship of an all-powerful deity (or deities) and involving behaviors such as prayer, meditation, and participation in collective rituals. Other common features of organized religions are the belief that certain moral teachings have divine authority and the recognition of certain people, places, texts, or objects as holy or sacred. See also PSYCHOLOGY OF RELIGION. —**religious** *adj.*

**religiosity** *n.* **1.** the quality or extent of one's religious experience. **2.** exaggerated or affected religious zeal.

**religious delusion** any delusion associated with religious beliefs and grandiose ideas with religious content. Delusional ideation frequently includes beliefs that the individual is the embodiment of a notable religious figure, such as a messiah or prophet, and that he or she possesses special powers, such as the ability to cure all illness. Such beliefs may be a feature of grandiose-type DELUSIONAL DISORDER.

**religious faith** belief and trust in a deity or other spiritual force seen as setting standards of conduct, responding to prayer, and (typically) assuring the ultimate triumph of good over evil. Religious faith may be intensely private in some of its aspects but usually involves the believer's ad-

herence to a particular religious body and an organized system of ceremonies and doctrines. Most theologians in monotheistic traditions insist that faith involves an orientation of the entire personality toward God rather than merely intellectual acceptance of certain teachings. See MYSTICISM; RELIGION; SPIRITUALITY. See also PSYCHOLOGY OF RELIGION.

**religious healing** see FAITH HEALING.

**religious instinct hypothesis** the hypothesis that human beings are naturally drawn to believe in and to worship a higher power. It is used by some believers as the basis of an argument for the existence of God and the validity of religion, and by some nonbelievers as an illustration of how human beings create myths to make themselves feel more comfortable or to find meaning in life. It has also been argued that the religious instinct may have a biological origin and serve an evolutionary purpose.

**religious mania** a state of acute hyperactivity, agitation, and restlessness accompanied by hallucinations of a religious nature.

**religiousness** *n.* the tendency to adhere to religious beliefs and to engage in religious practices.

**religious obsessive-compulsive disorder** see SCRUPULOSITY.

**religious therapy** therapeutic intervention through such approaches as PASTORAL COUNSELING, scriptural study, and church-sponsored community activities.

**REM** abbreviation for RAPID EYE MOVEMENT.

**remand** *vb.* **1.** to send back a case from an appellate court to the lower court from which the appeal came, together with instructions on how to proceed. **2.** to send an accused person back into custody or remit him or her to bail, pending further legal proceedings.

**REM behavior disorder (RBD)** a SLEEP DISORDER involving motor activity during REM SLEEP, which typically includes a physical enactment of dream sequences. Because the dreams that are acted out are generally unpleasant or combative, this behavior is usually disruptive and can result in violence.

**remedial education** a learning process that occurs after the initial, primary instruction of a subject or skill. Remedial education is intended to improve skills that appear deficient in a particular subject or area. For example, **remedial reading** is specialized instruction for individuals whose READING QUOTIENT is significantly below average or who have faulty reading patterns.

**remedial therapy** an intervention aimed at assisting a person to achieve a normal or increased level of functioning when performance is below expectations in a particular area (e.g., reading). Also called **remedial training**.

**remember cue** see DIRECTED FORGETTING.

**remembering** *n.* the process of consciously reviving or bringing to awareness previous events, experiences, or information. Remembering also involves the process of retaining such material, which is essential to learning, since without it one would not profit from training, practice, or past experience. According to Endel TULVING, remembering is distinct from knowing (see REMEMBER-KNOW PROCEDURE). Methods of assessing remembering include the RECALL METHOD, RECOGNITION METHOD, and SAVINGS METHOD.

**remember-know procedure** a procedure in which

various memory tasks (e.g., CUED RECALL, FREE RECALL) are used to measure and assess two different ways of accessing events from one's past—EPISODIC MEMORY and SEMANTIC MEMORY. Remembering (episodic memory) is the conscious and vivid recollection of a prior event such that a person can mentally travel to the specific time and place of the original event and retrieve the details; he or she is able to bring to mind a particular association, image, or sensory impression from the time of the event. Knowing (semantic memory) refers to the experience in which a person is certain that an event occurred but fails to recall anything about its actual occurrence or what was experienced at the time of its occurrence; the retrieval of the event is not accompanied by specific recollections about the time, place, or details. [introduced in 1985 by Endel TULVING]

**remembrance** *n.* **1.** the act of remembering or the state of being remembered. **2.** a late stage in the GROUP SOCIALIZATION process during which ex-members review their experiences in the group and continuing members discuss the contributions and activities of former members.

**Remeron** *n.* a trade name for MIRTAZAPINE.

**remifentanyl** *n.* see FENTANYL.

**reminder** *n.* a cue that helps to reinstate or initiate a memory, behavior, habit, or goal.

**reminiscence** *n.* **1.** the recalling of previous experiences, especially those of a pleasant nature. Events that occurred in adolescence and early adulthood (often called the **reminiscence bump**) are most often remembered. Unlike RECOLLECTION, reminiscence does not necessarily involve vivid and detailed memory. See also AUTOBIOGRAPHICAL MEMORY; EPISODIC MEMORY; LIFE REVIEW. **2.** in a test, the retrieval of an individual piece of information (e.g., word, picture) that was not retrieved on a previous test. Reminiscence often occurs when information is repeatedly tested in close succession. The longer the delay between tests, however, the more likely a given piece of information will be forgotten. See HYPERMNESIA.

**reminiscence theory of knowledge** the theory of Greek philosopher PLATO that knowledge originates prior to birth in a hypothetical existence during which humans are exposed to the true forms or essences of things. After birth this knowledge is retrieved through reminiscence. According to Plato, this is the only possible explanation for human knowledge of certain ideal concepts, such as perfect equality, that cannot be derived from experience. See PLATONIC IDEALISM; THEORY OF FORMS.

**reminiscence therapy** the use of LIFE HISTORIES—written, oral, or both—to improve psychological well-being. The therapy is often used with older people.

**remission** *n.* a reduction or significant abatement in symptoms of a disease or disorder, or the period during which this occurs. Remission of symptoms does not necessarily indicate that a disease or disorder is cured. See also INTERMISSION; SPONTANEOUS REMISSION.

**remitted-disorder study** an empirical investigation of patients whose condition is in remission. Because the trajectories of certain pathologies (e.g., schizophrenia, bipolar disorder, chronic pain, cancer) include periods of relapse and abatement, researchers seek to identify the conditions under which each occurs so as to predict these transitions more accurately and develop better treatments.

**REM latency** the time between onset of sleep and the first occurrence of REM SLEEP.

**remorse** *n.* a strong sense of guilt and regret for a past action.

**remote association** an association between one item in a list or series and another item that does not adjoin it. Hermann EBBINGHAUS first reported that associations are formed not only between adjacent items but also between items further apart in a list or series.

**remote-association test** a creativity test in which the participant is asked to suggest a fourth word that links three apparently unrelated words, such as rat-blue-cottage (answer: cheese).

**remote cause** a cause that is removed from its effect in time or space but is nevertheless the ultimate or overriding cause. In a CAUSAL CHAIN, it may be considered to be the precipitating event without which the chain would not have begun (the original cause). For example, the PROXIMATE CAUSE of Smith's aggression may be a trivial snub, but the remote cause may be Smith's early childhood experiences. See also CAUSAL LATENCY; DELAYED EFFECT.

**remote grandparent** the type of grandparent who interacts with his or her grandchildren infrequently, due to physical distance or emotional detachment. Compare COMPANIONATE GRANDPARENT; INVOLVED GRANDPARENT.

**remote masking** the masking of a signal by a masker that is much higher in frequency than the signal. See AUDITORY MASKING.

**remote memory** recall or recognition of experiences or information dating from the distant past. See LONG-TERM MEMORY.

**remote perception** **1.** in parapsychology, the perception of a scene or event at which one is not present. In the usual research protocol, one person is present at a target location, while the remote perceiver is situated at some distance from the scene, with no prior knowledge of it, and attempts to perceive aspects of its ambience and detail. Both participants record their impressions on identical checklists, and the observations are later correlated for level of agreement. **2.** the perception of an object using means other than the senses normally used to perceive it. For example, rocks on Mars may be perceived using a video camera mounted on a robot. See TELEPRESENCE.

**remote viewing** see CLAIRVOYANCE.

**remotivation** *n.* intervention aimed at increasing the likelihood that a person will cooperate with and benefit from treatment. It includes efforts directed toward stimulating withdrawn patients in psychiatric hospitals, such as by involving them in poetry-reading groups or conversation groups in which a **bridge to reality** is established by discussing current topics.

**removing harmful consequences** an ethical principle requiring researchers to ensure that participants in DECEPTION RESEARCH or other potentially detrimental practices leave a study in the same emotional state as when they arrived. Investigators thus are obligated to alleviate any feelings of alienation, resentment, negativity, and so forth by minimizing study risks before the study begins and providing an in-depth DEBRIEFING after the study is complete. For example, at the conclusion of a study in which participants were induced into negative moods, the experimenters would need to take steps to induce a positive mood in participants and explain the reasons for the methods used in the study. See also FREEDOM FROM HARM.

**REM rebound** the increased occurrence of REM SLEEP following REM-sleep deprivation. It is an example of a REBOUND PHENOMENON.

**REM sleep** rapid-eye-movement sleep: the stage of sleep, formerly called **desynchronized sleep**, in which most dreaming tends to occur and during which electroencephalograms show activity that resembles wakefulness (hence, it is also known as **paradoxical sleep**) except for inhibition of most skeletal and cranial muscles. This stage has two phases—tonic and phasic—and it is largely during the phasic period that muscle twitches and bursts of rapid eye movements occur. REM sleep accounts for one quarter to one fifth of total sleep time. Compare NREM SLEEP.

**REM-sleep deprivation** an experimental SLEEP DEPRIVATION technique designed to study the effects of reduced REM sleep on activities that occur during this stage of sleep (e.g., REM dreaming; see DREAM DEPRIVATION) or on processes that are believed to be affected during this stage (e.g., NEUROGENESIS, memory consolidation).

**REM storm** a burst of rapid eye movement (REM) during sleep.

**renal** *adj.* referring to the kidney or kidneys.

**renal system** the kidneys and related structures—including the ureters, bladder, urethra, renal blood supply, and renal nerve supply—that are involved with the excretion of waste materials from the body.

**Renard Diagnostic Interview** a structured interview designed to elicit information relating to established criteria (i.e., the FEIGNER CRITERIA) for the diagnosis of 15 psychiatric disorders. See RESEARCH DIAGNOSTIC CRITERIA. [developed in 1977 at the Renard Hospital, Washington University, St. Louis]

**renewal following extinction** the return of a response to an extinguished conditioned stimulus following movement away from the context in which extinction occurred.

**Renfield's syndrome** see VAMPIRISM. [named in 1992 by U.S. clinical psychologist Richard Noll (1959– ) after a character in Bram Stoker's novel, *Dracula* (1897)]

**renifleur** *n.* a person with a morbid interest in body odors, especially as a means of sexual excitement. See OSPHRESIOLAGNIA.

**renin** *n.* an enzyme that is released by the kidneys when blood pressure falls. It cleaves the plasma globulin protein angiotensinogen to form ANGIOTENSIN.

**renin-angiotensin system** a system of the liver and kidneys that regulates the production of ALDOSTERONE from the adrenal cortex and is therefore involved in the control of blood pressure. See ANGIOTENSIN; RENIN.

**Renpenning syndrome** a condition that is inherited as an X-linked trait (see SEX-LINKED) and almost exclusively affects males. It is characterized by eye defects, MICROCEPHALY, psychomotor retardation, short stature, small testes, and intellectual disability. [Hans Renpenning (1929–2006), Canadian physician]

**Renshaw cell** a neuron that inhibits motor neurons near the spinal cord. Renshaw cells are a part of the NEGATIVE FEEDBACK system that prevents rapid, repeated firing of motor neurons. See also RECURRENT COLLATERAL INHIBITION. [Birdsey Renshaw (1911–1948), U.S. neurophysiologist]

**renunciation** *n.* **1.** in general, the act of giving something up or denying oneself. **2.** in classical psychoanalytic theory, a refusal of the EGO to follow impulses of the ID, or a sublimation of those urges. —**renounce** *vb.*

**reorganization principle** the principle deriving from GESTALT PSYCHOLOGY that new learning or perception disrupts old cognitive structures, requiring a reorganized structure. This is in opposition to the associationist principle that new learning is essentially added on to existing structures (see ASSOCIATIONISM).

**reorientation therapy** see CONVERSION THERAPY.

**repair** *n.* in language, a revision made spontaneously in conversation to correct miscommunication. Also called **conversational repair**.

**reparameterization** *n.* the process of redefining the PARAMETERS necessary for the complete specification of a model, usually for the purpose of removing technical difficulties in an analytic solution that stem from the original parameterization. For example, in STRUCTURAL EQUATION MODELING a researcher may decide to add another pathway between a MANIFEST VARIABLE and a LATENT VARIABLE because of a new insight gained from theory or an empirical result.

**reparation** *n.* **1.** amelioration of or expiation for harm previously done. See also RESTITUTION. **2.** in the OBJECT RELATIONS THEORY of Melanie KLEIN, acts that are performed during the DEPRESSIVE POSITION to repair the relationship with the GOOD OBJECT. Klein viewed all creative and positive acts in adulthood as examples of reparation.

**reparative therapy** see CONVERSION THERAPY.

**reparenting** *n.* **1.** a controversial therapeutic procedure used to provide a client with missed childhood experiences. The client, who typically has severe problems, is treated as a child or infant; for example, he or she may be fed with a spoon or bottle, hugged, sung to, and provided with other forms of nurturance. Reparenting has been unethically used to justify recreation of the birth process by wrapping a client in a blanket and having him or her struggle to get out. **2.** in self-help and some forms of counseling, a therapeutic technique in which individuals are urged to provide for themselves the kind of parenting attitudes or actions that their own parents did not provide.

**repeatability** *n.* the degree to which specific research studies obtain similar results when they are conducted again. Study and measurement conditions (e.g., instructions, assessments, setting) must be identical on all occasions. See REPLICATION; REPRODUCIBILITY.

**repeated acquisition** a procedure in which sequences of responses are learned but the sequence changes from observation period to observation period. For example, a person might be asked to press a sequence of keys in the presence of seven different stimuli presented in sequence. Having learned to do so, the person would then be required to learn a different sequence of key presses in response to the same seven stimuli in the next test period.

**repeated contrast** in a WITHIN-SUBJECTS ANALYSIS OF VARIANCE, a comparison of means conducted across different levels of the INDEPENDENT VARIABLE. For example, assume a researcher is interested in how commitment to therapy changes over the course of the process. He or she could assess participant commitment at the start of therapy (Month 1) and at the beginning of each of the four

months thereafter, and then evaluate how the mean commitment scores at Months 2, 3, 4, and 5 differ from the mean baseline commitment score obtained at Month 1. There are several types of repeated contrasts available, such as SIMPLE COMPARISONS and POLYNOMIAL CONTRASTS.

**repeated factor** an INDEPENDENT VARIABLE for which multiple scores are recorded for an individual research participant. For example, in a study examining political attitudes a researcher may collect approval ratings for a candidate at four time points before the election. Thus, the variable of candidate approval would be a repeated factor having four levels corresponding to the four different points at which ratings were obtained. See also WITHIN-SUBJECTS DESIGN.

**repeated measures analysis of variance** see WITHIN-SUBJECTS ANALYSIS OF VARIANCE.

**repeated measures design** see WITHIN-SUBJECTS DESIGN.

**repeated measures *t* test** see DEPENDENT-SAMPLES *T* TEST.

**repeated reproduction** a method for studying memory in which participants repeatedly retrieve the same memory over time. The method often shows that repeated retrieval leads to changes in memory, supporting the theory that memory should be viewed as constructive and reconstructive (see CONSTRUCTIVE MEMORY; RECONSTRUCTIVE MEMORY), rather than simply reproductive. In the original 1932 study, British college students attempted to recall a particular Native American folk tale. Successive reproductions of the tale demonstrated that the students' own cultural knowledge and expectations intruded into the recall, rationalizing and eliminating unusual elements and structuring unrelated items of the tale into a more coherent and familiar framework. Also called **Bartlett technique**; **Bartlett tradition**; **successive reproduction**. See also EFFORT AFTER MEANING; SERIAL REPRODUCTION. [developed in 1932 by Frederic C. BARTLETT]

**repeat offender** see RECIDIVISM.

**repertoire** *n.* the sum total of potential behavior or responses that a person or nonhuman animal is capable of performing. It usually refers to behavior that has been learned and is generally quantified through the study of past behavior. Also called **behavioral repertoire**.

**repertory grid** a technique used to analyze an individual's PERSONAL CONSTRUCTS. A number of significant concepts are selected, each of which is rated by the participant on a number of dimensions using a numerical scale. The findings are displayed in matrix form and can be subjected to statistical analysis to reveal correlations. The repertory grid was developed principally as a means of analyzing personal relationships but has also been used to determine the complexity of a person's thinking (COGNITIVE COMPLEXITY) and in various other applications. [introduced by George A. KELLY]

**repetition** *n.* repeated presentation of material to be learned or remembered. Repetition forms the basis of DRILL and ROTE LEARNING methods. See also REPETITION EFFECT.

**repetition blindness** in RAPID SEQUENTIAL VISUAL PRESENTATION, the tendency for individuals to fail to notice a target stimulus when it is repeated. For example, when presented with the sequence of letters *bcebd*, they are less likely to notice the second *b* than to notice *c*, *e*, or *d*. See also CHANGE BLINDNESS; INATTENTIONAL BLINDNESS.

**repetition compulsion** in psychoanalytic theory, an unconscious need to reenact early traumas in the attempt to overcome or master them. Such traumas are repeated in a new situation symbolic of the repressed prototype. Repetition compulsion acts as a RESISTANCE to therapeutic change since the goal of therapy is not to repeat but to remember the trauma and to see its relation to present behavior. Also called **compulsion to repeat**.

**repetition effect** the fact that repeated presentation of information or items typically leads to better memory for the material. The repetition effect is a general principle of learning, although there are exceptions and modifiers. For instance, **spaced repetitions** are usually more effective than **massed repetitions**. See DISTRIBUTED PRACTICE; LAW OF FREQUENCY; MASSED PRACTICE.

**repetition priming** cuing a response to a stimulus through prior exposure to the same or a related stimulus. The effects of repetition priming (e.g., changed speed of response, number of response errors) can occur without explicit memory of the first stimulus.

**repetitive strain injury (RSI)** a group of musculoskeletal disorders involving chronic inflammation of the muscles, tendons, or nerves and caused by overuse or misuse of a specific body part. RSI most commonly affects the hands, wrists, elbows, arms, shoulders, back, and neck and results in pain and fatigue of the affected areas. Examples include CARPAL TUNNEL SYNDROME and **tendinitis** (inflammation, irritation, and swelling of a tendon). Repetitive strain injuries are often associated with work, and their prevention is an important issue in ERGONOMICS and HUMAN FACTORS. Also called **cumulative trauma disorder (CTD)**; **repetitive motion disorder or injury (RMD)**; **RMI**; **repetitive stress injury**.

**repetitive transcranial magnetic stimulation (rTMS)** see TRANSCRANIAL MAGNETIC STIMULATION.

**replacement memory** see SCREEN MEMORY.

**replacement sampling** see SAMPLING WITH REPLACEMENT.

**replacement therapy** **1.** treatment in which a natural or synthetic substance is substituted for one that is deficient or lacking in an individual. See HORMONE REPLACEMENT THERAPY. **2.** the process of replacing abnormal thoughts or behaviors with healthier ones through the use of therapy focused on constructive activities and interests.

**replication** *n.* the repetition of an original experiment or research study to verify or bolster confidence in its results. In **exact replication** (or **literal replication**), a researcher uses procedures that are identical to the original experiment or duplicated as closely as possible. In **modified replication**, a researcher incorporates alternative procedures and additional conditions. In **conceptual replication**, a researcher introduces different techniques and manipulations to gain theoretical information.

**reportability** *n.* the quality of psychological events that allows them to be described (e.g., in **verbal reports**) by the person experiencing them. It is the most widely used behavioral index of conscious experience in psychophysics, perception, memory, and applied settings such as medicine.

**representation** *n.* that which stands for or signifies something else. For example, in cognitive psychology the term denotes a MENTAL REPRESENTATION, whereas in psychoanalytic theory it refers to an **introject** (see INTROJECTION) of a significant figure or to a SYMBOL for a repressed

impulse. —**represent** *vb.* —**representational** *adj.* —**representative** *adj.*

**representational change** a young child's false memory of an initial belief, as demonstrated by performance in a FALSE-BELIEF TASK. For example, children shown a box marked as containing pencils and asked what it contains are likely to reply that it contains pencils; the box is then opened to reveal that it actually contains pennies. When later asked what they originally thought was in the box, most children ages 3 years and younger say pennies, whereas older children remember their original belief.

**representational constraints** the limitations imposed by the brain on the form and content of mental constructions, as reflected in the innateness of some types of knowledge (e.g., simple concepts of addition and subtraction). See also ARCHITECTURAL CONSTRAINTS; CHRONOTOPIC CONSTRAINTS.

**representational insight** the knowledge that an entity (e.g., a word, photograph) can stand for something other than itself.

**representationalism** *n.* the view that in perception the mind is not directly aware of the perceived object but of a mental representation of it. See PHENOMENALISM. —**representationalist** *adj.*

**representational redescription** the mental processes by which a child produces a new description of his or her existing representations. This recoding of information enables the child to think more flexibly and use knowledge in a more sophisticated way. [proposed by British psychologist Annette Karmiloff-Smith]

**representational skills** cognitive skills involved in understanding people, objects, and events in terms of mental representation, including the use of images and words.

**representational stage** in PIAGETIAN THEORY, another name for the PREOPERATIONAL STAGE.

**representational thought** cognition based on use of symbols, including, but not limited to, language and images.

**representational validity** the extent to which a SIMULATION accurately replicates the real-world situation that it is intended to represent (**external representational validity**) and functions in the intended manner (**internal representational validity**).

**representative democracy** see DEMOCRACY.

**representative design** an experimental design that includes processes and variables that might be found outside the laboratory setting. In representative designs, the participants, situations, constructs, and assessments are sampled in a way that permits generalization beyond the specific research setting, and background variables are intentionally not controlled so that research results will apply more realistically to the real world. See ECOLOGICAL VALIDITY.

**representative factors** in some studies of higher, non-human primates, hypothetical mental functions that permit the animals to continue or renew a response after the original stimulus is discontinued. Such functions are presumed to involve some form of MENTAL REPRESENTATION of stimuli.

**representativeness** *n.* the extent of the correspondence between a sample and the larger population from which it is drawn. A sample that accurately reflects its pop-

ulation, reproducing the essential characteristics and constitution in correct proportions, allows for GENERALIZABILITY.

**representativeness heuristic** a strategy for making categorical judgments about a given person or target based on how closely the exemplar matches the typical or average member of the category. For example, given a choice of the two categories *poet* and *accountant*, people are likely to assign a person in unconventional clothes reading a poetry book to the former category; however, the much greater frequency of accountants in the population means that such a person is more likely to be an accountant. The representativeness heuristic is thus a form of the BASE-RATE FALLACY. Compare AVAILABILITY HEURISTIC.

**representative sampling** the selection of study units (e.g., participants, homes, schools) from a larger group (population) in an unbiased way, such that the sample obtained accurately reflects the total population. For example, a researcher conducting a study of university admissions would need to ensure he or she used a **representative random sample** of schools—in other words, each school would have an equal probability of being chosen for inclusion, and the group as a whole would provide an appropriate mix of different school characteristics (e.g., private or public, student body size, cost, proportion of students admitted, geographic location).

**repressed memory** see RECOVERED MEMORY.

**repression** *n.* **1.** in classical psychoanalytic theory and other forms of DEPTH PSYCHOLOGY, the basic DEFENSE MECHANISM that excludes painful experiences and unacceptable impulses from consciousness. Repression operates on an unconscious level as a protection against anxiety produced by objectionable sexual wishes, feelings of hostility, and ego-threatening experiences and memories of all kinds. It also comes into play in many other forms of defense, as in denial, in which individuals avoid unpleasant realities by first trying to repress them and then negating them when repression fails. See PRIMARY REPRESSION; REPRESSION PROPER. **2.** the oppression or exclusion of individuals or groups through limitations on their personal rights and liberties. **3.** more generally, the process of restricting, restraining, or subduing something or someone. Compare SUPPRESSION. —**repress** *vb.*

**repression proper** in psychoanalytic theory, a form of REPRESSION that acts on conscious experiences and wishes in order to make them unconscious. This is in contrast to PRIMARY REPRESSION, which operates on material that has never been conscious. Also called **secondary repression**.

**repression resistance** *n.* in psychoanalysis, the RESISTANCE deployed by a patient in order to maintain REPRESSION of unacceptable impulses. This may manifest in the patient's forgetting of events, in an impeded flow of FREE ASSOCIATIONS, or in the patient's application of interpretations offered by the analyst to others but not to himself or herself. Also called **ego resistance**. Compare ID RESISTANCE; SUPEREGO RESISTANCE.

**repression-sensitization** defense mechanisms involving approach and avoidance responses to threatening stimuli. The sensitizing process involves intellectualization in approaching or controlling the stimulus, whereas repression involves unconscious denial in avoiding the stimulus.

**repressive coping style** a pattern of dealing with life



characterized by downplaying problems or misfortunes and maintaining an artificially positive view. Repressive coping is indicated by a combination of high scores on SOCIAL DESIRABILITY bias and low scores on reported anxiety. See also POSITIVE ILLUSION.

**reproducibility** *n.* the extent to which a study produces the same findings when it is conducted by a different independent researcher. A given research finding is thought to be stronger when it can be both repeated and reproduced. See REPEATABILITY; REPLICATION.

**reproduction** *n.* **1.** in biology, the production of new individuals from parent organisms, which perpetuates the species. Sexual reproduction involves the fusion of male and female GAMETES in the process of FERTILIZATION; ASEXUAL reproduction does not. **2.** the process of replicating information from memory. It potentially is subject to numerous errors or changes, as demonstrated via REPEATED REPRODUCTION and other techniques.

**reproduction theory** a theory suggesting that educational systems reproduce the social and economic structures and divisions of the societies in which they exist. [originated by French sociologist of education Pierre-Félix Bourdieu (1930–2002)]

**reproductive behavior** the range of activity, both biological and behavioral, that leads to propagation of individuals. The mechanisms range from simple cell division in unicellular organisms or budding of new offspring in simple multicellular organisms to a merger of chromosomes contributed by the male and female parents in sexual reproduction, often followed by supervision of the offspring until they can survive independently. Courtship, mate selection, copulation, and parental behavior are components of reproductive behavior.

**reproductive failure** failure to conceive or to bear offspring that grow to maturity.

**reproductive function** the total process of creating a new organism, or a specific act in the process, such as sexual intercourse.

**reproductive image** in PIAGETIAN THEORY, a mental image that is limited to evoking previously experienced sights and involves relatively static representations of objects. Compare ANTICIPATORY IMAGE.

**reproductive imagination** imagination used to reproduce images or objects with which one has become familiar in the past.

**reproductive memory** retrieval that is hypothesized to be an accurate recall of information. However, this type of memory is subject to errors of CONSTRUCTIVE MEMORY or RECONSTRUCTIVE MEMORY. See REPEATED REPRODUCTION.

**reproductive success** the degree to which an individual is successful in producing progeny that in turn are able to produce progeny of their own. Individuals vary in their success in finding mates and reproducing successfully. NATURAL SELECTION is based on this differential reproductive success. The genetic and behavioral traits that lead to greatest reproductive success survive in a population over generations, whereas traits producing low reproductive success eventually become extinct. See also INCLUSIVE FITNESS.

**reproductive suppression** the inability of one or several individuals within a group to reproduce, despite having reached reproductive maturity. In many COOPERATIVE-

BREEDING species, dominant, breeding individuals suppress reproduction in subordinates. Both behavioral and physiological cues can be involved. Reproductive suppression can be temporary, as in wolves, marmosets, or meerkats, in which an individual can quickly become a breeder in the absence of cues from the dominant animal, or it can be permanent, as in SOCIAL INSECTS.

**reproductive type** a CONSTITUTIONAL TYPE characterized by a dominance of the reproductive system over other body systems (see ROSTAN TYPES).

**resampling** *n.* an analytic method in which a researcher repeatedly chooses subgroups of observations from a larger overall data set in order to estimate various characteristics of that larger set. The smaller subsets of observations may be drawn through random SAMPLING WITH REPLACEMENT or without replacement, with both strategies having implications for the different analytic approaches that may be used.

**res cogitans** the Latin term (literally: “thinking thing”) used by René DESCARTES to refer to the mental realm as distinct from the realm of physical matter (RES EXTENSA). See CARTESIAN DUALISM.

**Rescorla–Wagner theory** an influential theory of CLASSICAL CONDITIONING that posits that conditioning proceeds from pairing to pairing as a fixed proportion of the maximum amount of conditioning that can be achieved with the UNCONDITIONED STIMULUS (US). For example, if food (the US) produces 100 ml of salivation (the unconditioned response [UR]), and after one pairing of a tone with food, the tone elicits a CONDITIONED RESPONSE (CR) of 40 ml of salivation (i.e., 0.4 of the maximum amount achievable), a second trial will increase the magnitude of the CR by 24 ml (i.e.,  $0.4 \times [100 - 40]$ ), so that the response will be 64 ml. After a third trial, the magnitude will be 78.4 ml—that is,  $40 + 24 + (0.4 \times [100 - 64])$ —and so on until the CR is 100 ml (the maximum achievable). Also called **Rescorla–Wagner model**. [proposed in 1972 by Robert Rescorla (1940– ) and Allan Wagner (1934– ), U.S. experimental psychologists]

**research** *n.* the systematic effort to discover or confirm facts, to investigate a new problem or topic, or to describe events and understand relationships among variables, most often by scientific methods of observation and experimentation. Research is essential to science in contributing to the accumulation of generalizable knowledge.

**research design** a strategic plan of the procedures to be followed during a study in order to reach valid conclusions, with particular consideration given to participant selection and assignment to conditions, data collection, and data analysis. Research designs may take a variety of forms, including not only experiments but also quasi-experiments (see QUASI-EXPERIMENTAL RESEARCH), OBSERVATIONAL STUDIES, LONGITUDINAL DESIGNS, surveys, focus groups, and other nonexperimental methods. See also EXPERIMENTAL DESIGN.

**Research Diagnostic Criteria (RDC)** a modification of the FEIGHNER CRITERIA for diagnosis of psychiatric disorders, expanding the number of disorders from the original 15 to 25. It focused on present or past episodes of illness and provided inclusion and exclusion criteria for diagnosis of the different disorders. Developed to increase diagnostic reliability, the RDC became an important basis for the development of the third edition of the *Diagnostic and Statistical Manual of Mental Disorders (DSM-III; 1980)*, which was

a major departure from prior editions' largely psychoanalytic approach to mental disorder. [published in 1978 by U.S. psychiatrists Robert L. Spitzer (1932– ) and Eli Robins (1921–1995) and U.S. clinical psychologist Jean Endicott (1936– )]

**research diary** an investigator's documentation of the activities undertaken during a study, including the study's overall design and conceptualization, sampling and measurement procedures, data collection and analysis, and reporting of findings as well as reflections, notes, and observations of a more personal nature. Research diaries may be reviewed to understand the nuances of a project and often provide ideas that form the basis of future studies.

**researcher bias** any unintended errors in the research process or the interpretation of its results that are attributable to an investigator's expectancies or preconceived beliefs. The term essentially is synonymous with EXPERIMENTER BIAS, but it applies to all types of investigative projects rather than to experimental designs only.

**research ethics** the values, principles, and standards that guide the conduct of individual researchers in several areas, including the design and implementation of studies and the reporting of findings. For example, research ethics stipulate that studies involving data collection from human participants must be evaluated by INSTITUTIONAL REVIEW BOARDS.

**research hypothesis** a statement describing the investigator's expectation about the pattern of data that may result from a given study. By stating specific expectations before the data are collected, the investigator makes a commitment about the direction (e.g., Method A will yield higher final exam scores than Method B) and magnitude (e.g., participants' income will increase with more education) of potential relationships based on the study's theoretical framework and related prior studies. See also ALTERNATIVE HYPOTHESIS; NULL HYPOTHESIS.

**research method** a procedure for the formulation and evaluation of hypotheses that is intended to reveal relationships between variables and provide an understanding of the phenomenon under investigation. In psychology, this generally involves empirical testing and takes the form of the SCIENTIFIC METHOD. See also QUALITATIVE RESEARCH; QUANTITATIVE RESEARCH.

**research protocol** the complete description of one's outline or plan for conducting a study. It should be as detailed as possible, including elements such as the RESEARCH HYPOTHESIS to be addressed and the rationale for doing so; the materials and resources that will be required; the timeline or duration; the precise sampling, measurement, and analysis procedures that will be used; a discussion of any ethical considerations; and a description of strengths and limitations.

**research register** a database of research studies, in progress or completed, about a specific topic, or funded by the same organization, or sharing a common design.

**research risk** the potential costs to participants or to society at large associated with a particular study, which must be clearly specified to an INSTITUTIONAL REVIEW BOARD by an investigator prior to conducting the research. Examples of potential risk to participants include embarrassment at being involved in DECEPTION RESEARCH, side effects from a treatment, time and resource commitments,

and emotional upset (e.g., from exposure to unpleasant or painful memories). An investigator must discuss how the costs will be minimized to the fullest extent possible and how the study benefits outweigh the costs.

**research sport psychology** the nonclinical psychology of human movement as it relates to sport, with a primary focus on the development of theory and the study of the efficacy of application strategies.

**research synthesis** the systematic use of established data-gathering methods and statistical approaches to evaluate a body of empirical literature on a topic. An investigator should include both published and unpublished studies, document the methods that each study uses, provide detail about the findings and EFFECT SIZES, and summarize commonalities and account for differences across studies. See META-ANALYSIS.

**resentment** *n.* a feeling of bitterness, animosity, or hostility elicited by something or someone perceived as insulting or injurious.

**reserpine** *n.* see RAUWOLFIA DERIVATIVE.

**reserve capacity** the difference between performance on a psychological task and an individual's maximum capability to perform that task. Training, intervention, and practice can be used to minimize reserve capacity on a given task.

**reserved** *adj.* emotionally restrained, particularly in social interactions.

**res extensa** the Latin term (literally: "extended thing") used by René DESCARTES to refer to the physical realm of matter. By "extended" Descartes meant that material objects have the property of occupying space, in contrast to the mind, which has no spatial dimensions. Compare RES COGITANS. See CARTESIAN DUALISM.

**residence rate** the ratio of the number of people residing in institutions of a given type on a given date to the total population of the city, county, state, or other area.

**residential care** long-term care that provides housing and meals as well as medical, nursing, and social services for individuals with chronic illness (e.g., dementia, Parkinson's disease) who are unable to function independently or for individuals undergoing rehabilitation. See also DOMICILIARY CARE.

**residential habilitation** a HOME AND COMMUNITY-BASED SERVICE provided for a person with intellectual or developmental disability. This service is similar to DAY HABILITATION but is delivered in a supervised or supportive residential setting or in a family home.

**residential maze** an arrangement of intersecting pathways and blind alleys used to study learning and memory, in which a nonhuman animal is kept 24 hours a day rather than only for the test period. One of the simplest residential mazes has a nest box at the center of a plus-sign structure with four arms, each of which provides a different item (e.g., water, food) to the resident animal.

**residential school** a special educational facility that provides live-in services for children with intellectual or developmental disability. Although historically significant, the use of such facilities greatly diminished during the latter part of the 20th century, and children with these conditions now receive public education in their home communities.

**residential treatment** treatment that takes place in a hospital, special center, or other facility that offers a treatment program and residential accommodation. Some programs require residence for a specific time (e.g., 1 month for treatment of an addiction), and some allow patients to learn or work in the community during the day.

**residual** **1.** *n.* in REGRESSION ANALYSIS, the difference between the value of an empirical observation and the value predicted by a model. Analysis of residuals allows a researcher to judge the fit or appropriateness of the model for the data. **2.** *adj.* denoting a condition in which acute symptoms have subsided but chronic or less severe symptoms remain. **3.** *adj.* denoting remaining ability (e.g., residual hearing) or a remaining disability (e.g., residual loss of vision) after a trauma or surgery.

**residual analysis** a diagnostic review of the discrepancies between specific observations and the values predicted by a model (see RESIDUAL). Summarizing these discrepancies in several different ways can help a researcher identify problems in the application of a model to a particular data set. For example, a residual analysis might show large discrepancies for one group but not another, suggesting that the model is not appropriate for the first group. See REGRESSION DIAGNOSTICS.

**residual error** see ERROR VARIANCE.

**residual mean square** see MEAN SQUARE ERROR.

**residual schizophrenia** in *DSM-IV-TR*, a subtype of schizophrenia diagnosed when there has been at least one schizophrenic episode but positive symptoms (e.g., delusions, hallucinations, disorganized speech or behavior) are no longer present, and only negative symptoms (e.g., flat affect, poverty of speech, avolition) or mild behavioral and cognitive disturbances (e.g., eccentricities, odd beliefs) remain. This subtype has been eliminated from *DSM-5*.

**residual score** see ERROR SCORE.

**residual sum of squares** see ERROR SUM OF SQUARES.

**residual term** see ERROR TERM.

**residual variance** see ERROR VARIANCE.

**residual vision** **1.** usable vision in an individual with congenital or acquired VISUAL IMPAIRMENT. For example, an individual with impaired vision in the peripheral visual field due to glaucoma may still have residual vision in the central visual field. See also LOW VISION. **2.** nonconscious visual processes that are spared when damage to the STRIATE CORTEX (primary visual cortex) produces loss of vision. See BLINDSIGHT.

**residue method** see METHOD OF RESIDUES.

**residue pitch** see VIRTUAL PITCH.

**resignation** *n.* an attitude of surrender to one's situation or symptoms.

**resilience** *n.* the process and outcome of successfully adapting to difficult or challenging life experiences, especially through mental, emotional, and behavioral flexibility and adjustment to external and internal demands. A number of factors contribute to how well people adapt to adversities, predominant among them (a) the ways in which individuals view and engage with the world, (b) the availability and quality of social resources, and (c) specific COPING STRATEGIES. Psychological research demonstrates that the resources and skills associated with more positive adaptation (i.e., greater resilience) can be cultivated and prac-

ticed. Also called **psychological resilience**. See also COPING BEHAVIOR; COPING-SKILLS TRAINING. —**resilient** *adj.*

**resinous** *adj.* denoting one of the primary odor qualities in HENNING'S ODOR PRISM.

**resistance** *n.* **1.** generally, any action in opposition to, defying, or withstanding something or someone. **2.** in psychotherapy and analysis, obstruction, through the client's words or behavior, of the therapist's or analyst's methods of eliciting or interpreting psychic material brought forth in therapy. Psychoanalytic theory classically interprets resistance as a defense and distinguishes three types in particular: CONSCIOUS RESISTANCE, ID RESISTANCE, and REPRESENTATION RESISTANCE. **3.** the degree to which an organism can defend itself against disease-causing microorganisms. See IMMUNITY. **4.** the degree to which disease-causing microorganisms withstand the action of drugs. —**resist** *vb.* —**resistant** *adj.*

**resistance of an attitude** the extent to which an attitude remains unchanged in the face of attack or challenge.

**resistance stage** see GENERAL ADAPTATION SYNDROME.

**resistance to change** the measure of BEHAVIORAL MOMENTUM. Ongoing behavior is challenged by operations intended to disrupt it. The greater the degree to which the behavior persists unperturbed, the greater its resistance to change and, by inference, the greater its behavioral momentum.

**resistance to extinction** the endurance or persistence of a conditioned response in the absence of reinforcement.

**resistance to interference** the ability to ignore irrelevant information so that it does not impede task performance. Inability to ignore such information is called **interference sensitivity**.

**resistant attachment** see AMBIVALENT ATTACHMENT.

**resistant estimator** an ESTIMATOR for an unknown characteristic in a population that is less likely to be influenced by the presence of OUTLIERS (extreme scores) in the sample on which it is based. See also ROBUST ESTIMATOR.

**resocialization** *n.* the process of enabling individuals with mental disorders to resume appropriate interpersonal activities and behaviors and, generally, to participate in community life through more adaptive attitudes and skills.

**resolution** *n.* a measure of the ability of the eye or an optical device or system to detect two distinct objects when these are close together. A system with high resolution can distinguish targets very close to one another as individual entities; a system with low resolution can only distinguish targets that are farther apart. Also called **resolving power**.

**resolution phase** see SEXUAL-RESPONSE CYCLE.

**resolving power** see RESOLUTION.

**resonance frequency** see ACOUSTIC RESONANCE.

**resource allocation** the distribution of a program's effort across different participants, components, or segments of the program.

**resource competition** mutual interference between cognitive resources involved in simultaneous effortful tasks. See DUAL-TASK COMPETITION.

**resource defense polygyny** a form of POLYGyny in nonhuman animals that can occur when some males defend areas containing sufficient resources to allow a num-

ber of females to breed successfully. A male defending sufficient resources is able to benefit from polygyny not by being more attractive or having better genes but because the resources he controls can feed multiple females and their offspring.

**resource teacher** a specialist who teaches children with SPECIAL NEEDS, gifted children, and other exceptional children and who is available to act as a consultant to other teachers.

**resource theory** a theory of interpersonal relationships holding that the amount of resources (e.g., information, love, status, money, goods, services) possessed by each of the participants greatly affects the nature of their relationship. Individuals with more resources than they require for themselves can distribute their excess to the other party and thus have power over the other to the extent that the other needs the resources. It is proposed that withholding needed resources can heighten conflict, whereas the relationship is harmonious when each party is equally powerful and cooperative in the exchange of resources. [proposed in 1974 by U.S. psychologists Edna B. Foa (1937– ) and Uriel G. Foa (1916–1990)]

**respect** *n.* an attitude of, or behavior demonstrating, esteem, honor, regard, concern, and other such positive qualities toward an individual or entity. Respect can serve an important purpose in interpersonal and intergroup relations by aiding in communication, for example. According to many theorists and practitioners, it is considered to play a crucial role as a bidirectional process in psychotherapy.

**respiration** *n.* **1.** the series of chemical reactions that enables organisms to convert the chemical energy stored in food into energy that can be used by cells. Also called **cellular respiration**; **internal respiration**. **2.** the process by which an animal takes up oxygen from its environment and discharges carbon dioxide. Also called **external respiration**.

**respiratory depression** slow and shallow breathing that can be induced by opioids and other sedatives. These drugs raise the threshold level of respiratory centers in the medulla oblongata of the brain that normally would react to increased carbon dioxide in the tissues by increasing the rate and depth of breathing. Respiratory depression is a primary hazard of the use of morphine and other OPIOID ANALGESICS, but it is also observed with CNS DEPRESSANTS, such as barbiturates. Respiratory depression is less common with BENZODIAZEPINES unless they are taken together with another CNS depressant, such as alcohol.

**respiratory disorder** a general term for any disorder involving one or more components of the respiratory system, such as the diaphragm, lungs, trachea, larynx, or nasal cavities. See also ASTHMA; CHRONIC OBSTRUCTIVE PULMONARY DISEASE.

**respiratory distress syndrome** a disorder in some newborn babies in which the lungs fail to expand due to deficiency of a natural surfactant that prevents the alveoli (air sacs) from collapsing. The alveoli are lined with a membrane of hyaline material. The condition, which is most common in premature infants, may worsen progressively before the lungs begin producing surfactant. Also called **hyaline membrane disease**.

**respiratory sinus arrhythmia (RSA)** the normal tendency for the heart rate to increase and decrease in synchrony but slightly out of phase with inhalation and exha-

lation. When observed, respiratory sinus arrhythmia can be taken as a sign of vagal function (see VAGAL TONE). It is sometimes used as a physiological index of temperamental disposition: According to Jerome KAGAN, lack of RSA is associated with inhibited temperamental disposition.

**respiratory type** a CONSTITUTIONAL TYPE characterized by a dominance of the circulatory and respiratory systems over other body systems. See ROSTAN TYPES.

**respite care** assistance, supervision, and recreational or social activities provided for a limited period to a child, older adult, or person with a disability or chronic illness in order to temporarily relieve family members from caregiving responsibilities. These services may be provided on a scheduled or unscheduled basis, either regularly or occasionally, after school hours, during weekends, or overnight. Also called **in-home respite**.

**respondent** *n.* **1.** an organism that responds to a stimulus. **2.** a study participant who is interviewed as part of a research design or who completes a survey or questionnaire. **3.** in conditioning, any REFLEX that can be conditioned by CLASSICAL CONDITIONING procedures. Compare OPERANT.

**respondent behavior** behavior that is evoked by a specific stimulus and that will consistently and predictably occur if the stimulus is presented. Also called **elicited behavior**. See also REFLEX. Compare EMITTED BEHAVIOR.

**respondent conditioning** see CLASSICAL CONDITIONING.

**respondent validation** see MEMBER CHECK.

**response** *n.* any glandular, muscular, neural, or other reaction to a stimulus. A response is a clearly defined, measurable unit of behavior discussed in terms of its result (e.g., pressing a lever, indicating *yes* vs. *no* on a survey item) or its physical characteristics (e.g., raising an arm).

**response acquiescence** see YEA-SAYING.

**response bias** **1.** the tendency for a study participant to give one answer or type of answer more than others, regardless of the stimulus condition. There are several different types of response bias, including the HALO EFFECT, NAY-SAYING, and YEA-SAYING. See also RESPONSE SET; RESPONSE STYLE. **2.** in SIGNAL DETECTION THEORY more specifically, the overall willingness to say *yes* (signal present) or *no* (signal not present), regardless of the actual presence or absence of the signal.

**response-by-analogy principle** the generalization that an organism in an unfamiliar situation will react in a manner similar to its reaction in a similar but familiar situation.

**response chain** following an initial stimulus, a series of responses that each trigger the next stimulus in the sequence: That is, Stimulus 1 (S1) leads to Response 1 (R1), which leads to S2, which leads to R2, which leads to S3, and so on. Also called **stimulus–response chain**.

**response circuit** the neural pathway from a RECEPTOR to an EFFECTOR.

**response class** a category of behaviors with the same or similar external outcomes.

**response conflict** in choice reaction tasks, the interference of an irrelevant stimulus or stimulus feature such that CHOICE REACTION TIME to produce the correct response is slowed. For example, in the STROOP COLOR–WORD INTER-

REFERENCE TEST, in which participants are asked to name the color of letters that spell the name of another color, reaction time is slowed because response activation from the irrelevant information (what the letters spell) conflicts with that from the relevant information (the color of the letters). Also called **response competition**.

**response cost** a procedure in operant conditioning in which certain responses result in loss of a valued commodity. The intent of such procedures is to produce punishment. See **NEGATIVE PUNISHMENT**.

**response deprivation** in operant conditioning, an approach to identifying reinforcers before their effectiveness has been demonstrated. It holds that if the opportunity to engage in some activity is restricted below its normal level, then opportunity to engage in that activity can serve as reinforcement for some other behavior.

**response differentiation** see **DIFFERENTIATION**.

**response effect** the influence of some attribute of the MEASUREMENT SCALE or administration context on a participant's answers to survey or interview items. For example, the order in which response options are presented may affect how a participant will answer, as might the inclusion of a middle or neutral point on an agreement scale or the means by which a survey is conducted (e.g., in person, via the Internet, by telephone).

**response-focused emotion regulation** in the PROCESS MODEL OF EMOTION REGULATION, a form of emotion control in which, following an event that has triggered an emotional response, one countermands this response and suppresses the urge to react emotionally to the event (called **expressive suppression**). For example, one might try to look composed while feeling devastated or to look calm while feeling angry or resentful. Since this type of emotion regulation occurs relatively late in the emotion process, potentially after affective experience has already been generated, long-term reliance on its strategy of expressive suppression may have deleterious effects on psychological and physiological well-being. Compare **ANTECEDENT-FOCUSED EMOTION REGULATION**. [proposed in 1998 by U.S. clinical psychologist James J. Gross]

**response frequency** see **RESPONSE RATE**.

**response generalization** see **INDUCTION**.

**response hierarchy** the arrangement of a group of responses or response sequences in the order in which they are likely to be evoked by a specific stimulus (**RESPONDENT BEHAVIOR**) or to occur in a particular stimulus situation (**OPERANT BEHAVIOR**). Also called **hierarchy of response**.

**response integration** the process of combining reflexes and simple movements into more complex responses.

**response latency** see **REACTION TIME**.

**response learning** learning to perform a specific series of movements or responses. Edward C. TOLMAN contrasted response learning in mazes, in which the participant learns a sequence of left-right responses, with **PLACE LEARNING**, in which the participant develops a cognitive map of the maze. Also called **movement learning**.

**response magnitude** the amplitude, duration, or intensity of a response.

**response-operating characteristic curve** see **RECEIVER-OPERATING CHARACTERISTIC CURVE**.

**response prevention** see **EXPOSURE AND RESPONSE PREVENTION**.

**response probability** the likelihood that a response will occur in a particular circumstance. It is often inferred from the **RELATIVE FREQUENCY** or the **RESPONSE RATE**.

**response proposition** the content of an imagined response to an imagined situation stimulus. Response propositions are part of the **BIOINFORMATIONAL THEORY** of how and why imagery works in performance enhancement. See also **STIMULUS PROPOSITION**.

**response rate** **1.** the number of responses that occur within a specified time interval. Also called **response frequency**. **2.** the number of individuals who complete an interview, answer a survey, or join a research study compared to the number who were invited to participate, often expressed as a percentage. Compare **REFUSAL RATE**.

**response-reinforcement contingency** see **REINFORCEMENT CONTINGENCY**.

**response scale** any of various types of instruments provided to a respondent to express an answer to an item. Examples of different response scales include **FIXED-ALTERNATIVE QUESTIONS**, **LIKERT SCALES**, **VISUAL ANALOGUE SCALES**, and **SEMANTIC DIFFERENTIALS**.

**response scenario** any of a series of alternative behavior patterns that could occur when an individual is confronted with a specific stimulus. In sport, for example, a response scenario might consist of alternative offensive plays that could be run against a specific defensive formation.

**response selection** an intermediate stage of human information processing in which a response to an identified stimulus is chosen. Response selection is typically studied by varying relationships between the stimuli and their assigned responses.

**response set** **1.** a tendency to answer questions in a systematic manner that is unrelated to their content. An example is the **SOCIAL DESIRABILITY** response set. See also **RESPONSE BIAS**; **RESPONSE STYLE**. [first extensively discussed and studied by Lee J. CRONBACH] **2.** in sport, the tendency for an athlete to exhibit the same pattern of play in specific situations (e.g., always faking to the right before driving for the basket).

**response-shock interval (R-S interval)** in a **SIDMAN AVOIDANCE SCHEDULE**, the time by which each response postpones the aversive stimulus (which is usually a shock). For example, with a response-shock interval of 20 seconds, each response restarts a 20-second timer that controls the time to the next shock. Therefore, if 20 seconds elapse without a response, a shock occurs.

**response strength** a hypothetical entity that summarizes the likelihood of occurrence, magnitude, and resistance to disruption of a class of responses, often measured by **RESPONSE RATE** or **REACTION TIME**.

**response style** a **RESPONSE SET** arising from dispositional factors that appear across contexts and over time rather than from situational factors. [first extensively discussed and studied by Samuel J. Messick (1931–1998), U.S. psychologist, and Douglas N. Jackson (1929–2004), U.S.-born Canadian psychologist]

**response suppression** a decrease in the rate or probability of a response due to some experimental operation.

For example, PUNISHMENT often results in response suppression.

**response threshold** see THRESHOLD.

**response time** see REACTION TIME.

**response topography** the physical characteristics of a response, including its duration, force, extent, and location. Also called **topography of response**.

**response variable** see DEPENDENT VARIABLE.

**responsible stage** see SCHAIER'S STAGES OF COGNITIVE DEVELOPMENT.

**responsiveness** *n.* a process in which interaction partners attend to and respond supportively to each other's needs, wishes, and circumstances, thereby promoting each other's well-being. Responsiveness originates in partners' perceptions of each other's needs and desires, as well as their goals in an interaction, and is most directly revealed in their reactions to each other. It is expressed in both words and nonverbal behavior (e.g., a warm smile). Extensive research has shown that responsiveness is a key feature of successful close relationships and is directly related to liking, intimacy, trust, and commitment. In developmental research, parental responsiveness, defined in terms of behavior that is sensitive to the child's needs, is thought to be central to the child's development of a sense of security and positive self-concept.

**REST** acronym for RESTRICTED ENVIRONMENTAL STIMULATION TECHNIQUE.

**restatement** *n.* in psychotherapy and counseling, the verbatim repetition or rephrasing by the therapist or counselor of a client's statement. The purpose is not only to confirm that the client's remarks have been understood but also to provide a "mirror" in which the client can perceive his or her feelings and ideas more clearly (see MIRRORING). Compare CLARIFICATION; INTERPRETATION; REFRAMING.

**rest cure** a treatment approach developed in the 19th century for individuals—chiefly women—with nervous disorders attributed to the hectic pace of life in the "rail-road age." The regimen consisted of extended, enforced rest together with change of environment, physical therapy, massage, electrotherapy, and a regulated diet. [developed by U.S. physician Silas Weir Mitchell (1829–1914)]

**rest home** a facility for convalescent care or for older adults who do not need continuous medical or nursing care. See ADULT HOME; ASSISTED LIVING.

**resting potential** the electric potential across the plasma membrane of a neuron when it is in the nonexcited, or resting, state. It is usually in the range of  $-50$  to  $-100$  mV for vertebrate neurons, representing an excess of negatively charged ions on the inside of the membrane. See also ACTION POTENTIAL.

**resting tremor** a trembling that occurs when the affected body part is at rest. It is a characteristic symptom of Parkinson's disease, in which case it sometimes is referred to as a **parkinsonian tremor**. The term *parkinsonian tremor*, however, more properly denotes any tremor associated with Parkinson's disease, whether a resting tremor or an ACTION TREMOR.

**restitution** *n.* the act of restoring or compensating for something lost through prior damaging actions or events. Acts of restitution exist on a behavioral spectrum: They may be a healthy, even necessary, part of acknowledging

and dealing with harm committed intentionally or unintentionally, but they may also, more pathologically, take such forms as a compulsive drive to "do for others" or a persistent pattern of martyrdom.

**restitutionary damages** a sum of money a defendant is ordered to pay the plaintiff in a civil lawsuit to negate a benefit the defendant obtained by acting improperly. For example, consider a person who exploits for personal profit land that he or she does not own. This person may be considered to have unjustly benefited at the landowner's expense and thus may be ordered to pay restitutionary damages.

**restless-legs syndrome** see EKBOM'S SYNDROME.

**restlessness** *n.* a form of activity that appears purposeless and limited in time or intensity. A human being may constantly move, become distractible, or pace the floor; a nonhuman animal may move about its environment or change positions frequently. —**restless** *adj.*

**restoration effect** a phenomenon in which the mind nonconsciously restores information missing from a stimulus. The best known example is the so-called PHONEMIC RESTORATION EFFECT, in which the perceiver fails to notice that certain PHONEMES have been masked out in speech recordings. The restoration effect is considered evidence of TOP-DOWN PROCESSING.

**restoration therapy** **1.** treatment that is directed toward the reestablishment of structure and function in a body part or system following disease or injury. For example, vision restoration therapy following postgeniculate visual system lesions is intended to enlarge the size of the visual field and facilitate recovery of more complex visual function. **2.** a form of COMPLEMENTARY AND ALTERNATIVE MEDICINE that uses techniques and concepts from massage, chiropractic, osteopathy, shiatsu, acupressure, and herbalism to treat specific ailments and enhance overall health by balancing the body's life-force energy (see CHI) and breaking down soft tissues, which then rebuild themselves. [created by Japanese professor Henry S. Okazaki (1890–1951)]

**restorative environment** an environment—often a natural setting—that rejuvenates a person and can help restore depleted attention resources or reduce emotional and psychophysiological stress. Characteristic features of restorative environments include LEGIBILITY and elements that give rise to contemplation and provide a break from one's normal routine. There is growing interest in the incorporation of restorative elements into health care settings because of evidence that they speed recovery.

**restorative justice** an approach to criminal justice in which emphasis is placed on rehabilitation of offenders and repairing the harm done to victims rather than on punishment.

**Restorff phenomenon** see DISTINCTIVENESS EFFECT.

**Restoril** *n.* a trade name for TEMAZEPAM.

**rest period** a brief pause in work or any other taxing activity taken on either a regular or a discretionary basis for the purpose of rest, recreation, refreshment, entertainment, or avoidance of overfatigue or boredom.

**restraint** *n.* **1.** the ability to control or prevent actions or behaviors that are harmful or otherwise undesirable. See SELF-CONTROL. **2.** the use of control measures to prevent violent patients from injuring themselves or others.

**restricted affect** emotional expression that is reduced

in range and intensity. It is common in depression, inhibited personalities, and schizophrenia. See FLAT AFFECT.

**restricted code** see ELABORATED CODE.

**restricted environmental stimulation technique (REST)** reduction in the level of ambient information (i.e., external stimuli) to which an organism or individual is exposed, used both as an experimental technique to study the effects of reduced sensory stimulation and as a clinical therapy for stress management, treatment of stress-related pain, and several other purposes. REST utilizes different approaches, including **flotation-REST** in which an individual is immersed in a FLOTATION TANK where all incoming stimuli are reduced; the effects from brief immersion include a state of relaxation. The term *restricted environmental stimulation technique* was coined in the late 1970s by Canadian psychologist Peter Suedfeld (1935– ) and U.S. psychologist Roderick A. Borrie as an alternative for SENSORY DEPRIVATION, but the latter remains the more commonly used term in experimental contexts. Also called **restricted environmental stimulation therapy**.

**restricted recovery** see SPLIT RECOVERY.

**restriction of range** the limitation—via sampling, measurement procedures, or other aspects of experimental design—of the full range of total possible scores that may be obtained to only a narrow portion of that total. For example, in a study of the grade point averages of university students, restriction of range occurs if only students from the dean's list are included. Range restriction on a particular variable may lead to such negative effects as failing to observe or improperly characterizing a relationship between the variables of interest.

**results-only work environment (ROWE)** a management practice that evaluates employees on what they produce regardless of the number of hours they work. Under this system, employees are given high levels of autonomy and flexibility and are permitted to choose when, where, and how long they work to meet performance objectives. [created by U.S. corporate executives Jody Thompson and Cali Ressler]

**resurgence** *n.* in conditioning, the reappearance of previously reinforced and then extinguished responses during a period of EXTINCTION for a subsequently learned response. For example, a rat might be presented with two levers. First, presses on Lever A are reinforced; next, presses on Lever A are subjected to extinction and presses on Lever B are reinforced. Pressing on A will cease, and pressing on B will occur. Finally, extinction is arranged for presses on B, so that no reinforcement is available in the situation. As responding on B declines, pressing on A will increase temporarily.

**RET** abbreviation for rational emotive therapy. See RATIONAL EMOTIVE BEHAVIOR THERAPY.

**retardation** *n.* **1.** a slowing down or delay of an activity or process, as in PSYCHOMOTOR RETARDATION or MENTAL RETARDATION. **2.** in conditioning, a delay in the appearance of a learned or acquired response due to prior experience. For example, presentation of a tone to be used later as a conditioned stimulus slows the development of conditioning.

**retarded depression** an obsolescent name for a MAJOR DEPRESSIVE EPISODE that includes PSYCHOMOTOR RETARDATION and appetite loss.

**retarded ejaculation** see MALE ORGASMIC DISORDER.

**rete mirabile** a network of blood vessels that is derived from a nearby artery or vein, such as the web of small arterial vessels in the kidney glomeruli or of small veins in the liver. A cranial rete mirabile is found in the brains of certain domestic animals but does not occur normally in humans.

**retention** *n.* **1.** persistence of learned behavior or experience during a period when it is not being performed or practiced, as indicated by the ability to recall, recognize, reproduce, or relearn it. **2.** the storage and maintenance of a memory. Retention is the second stage of memory, after ENCODING and before RETRIEVAL. **3.** the inability or refusal of an individual to defecate or urinate. —**retentive** *adj.*

**retention curve** a graphic representation of a person's remembrance of material over a period of time. Also called **memory curve**. See FORGETTING CURVE.

**retention interval** the period between a participant's exposure to information and being tested for retention of that information. During the retention interval, the participant may be exposed to a DISTRACTOR or other information.

**retention measure** any method used to assess memory for information following its initial presentation or acquisition. Several broad categories of such measures exist, including FREE RECALL, SERIAL RECALL, RECOGNITION METHOD, and SAVINGS METHOD. Retention measures may be immediate (given right after the learning session) or delayed (given some hours, days, weeks, or other time period after the learning session), and they may be for IMPLICIT MEMORY as well as EXPLICIT MEMORY.

**retest reliability** a measure of the consistency of results on a test or other assessment instrument over time, given as the correlation of scores between the first and second administrations. It provides an estimate of the stability of the construct being evaluated. Also called **test-retest reliability**.

**reticular activating system (RAS)** a part of the RETICULAR FORMATION thought to be particularly involved in the regulation of arousal, alertness, and sleep-wake cycles.

**reticular formation** an extensive network of nerve cell bodies and fibers within the brainstem, extending from the medulla oblongata to the upper part of the midbrain, that is widely connected to the spinal cord, cerebellum, thalamus, and cerebral cortex. It is most prominently involved in arousal, alertness, and sleep-wake cycles but also controls some aspects of action and posture. Also called **brainstem reticular formation**. See also RETICULAR ACTIVATING SYSTEM.

**reticular membrane** in the ear, a stiff membrane in the ORGAN OF CORTI that forms a division between ENDOLYMPH and PERILYMPH, which differ in their ionic composition. Some of the HAIR CELLS of the stereocilia make contact with the reticular membrane. Also called **reticular lamina**.

**reticulospinal tract** see VENTROMEDIAL PATHWAY.

**retifism** *n.* see FOOT FETISHISM.

**retina** *n.* the light-sensitive inner surface of the eye. A layer of neurons lines the inner surface of the back of the eye and provides the sensory signals required for vision. The retina contains the photoreceptors—that is, the RETINAL RODS and RETINAL CONES—as well as additional neu-

rons that process the signals of the photoreceptors and convey an output signal to the brain by way of the OPTIC NERVE. This inner layer of the retina is sometimes called the **neural retina**, to distinguish it from the retinal pigment epithelium, which abuts the tips of the photoreceptors. See also AMACRINE CELL; RETINAL BIPOLAR CELL; RETINAL HORIZONTAL CELL; RETINAL GANGLION CELL.

**retinal 1.** *adj.* of or relating to the retina. **2.** *n.* an aldehyde of vitamin A that is a component of the PHOTOPIGMENT rhodopsin. Also called **retinene**.

**retinal bipolar cell** any of various neurons in the INNER NUCLEAR LAYER of the retina that receive input from the photoreceptors (RETINAL RODS and RETINAL CONES) and transmit signals to RETINAL GANGLION CELLS and AMACRINE CELLS. Rods and cones are served by different populations of retinal bipolar cells, called **rod bipolars** and **cone bipolars**, respectively.

**retinal cone** any of various photoreceptors in the retina that require moderate to bright light for activation, as opposed to RETINAL RODS, which require very little light for activation. In primates, retinal cones are concentrated in the FOVEA CENTRALIS of the retina, where their high spatial density and the pattern of connections within their pathways are critical for high-acuity vision. The cone pathways also provide information about the color of stimuli. This is achieved by the presence of three different populations of cones, each having their maximum sensitivity to light in the short, middle, or long wavelengths of the spectrum, respectively. Other animals have additional populations of cones; for example, some fish have cones that are sensitive to ultraviolet wavelengths. See also PHOTOPIC VISION; PHOTOPIGMENT.

**retinal densitometry** a method of measuring the absorbance characteristics of retinal PHOTOPIGMENTS. A light that is shone into the eye travels through the retina, is reflected back out of the eye by tissues behind the retina, and is measured. The light that emerges is compared to the original light to determine how much was absorbed.

**retinal detachment** see DETACHED RETINA.

**retinal disparity** see BINOCULAR DISPARITY.

**retinal field** an array of photoreceptors stimulated by a visual target. This is different from the retinal receptive field (see VISUAL RECEPTIVE FIELD).

**retinal ganglion cell** the only type of neuron in the retina that sends signals to the brain resulting from visual stimulation. Retinal ganglion cells receive input from RETINAL BIPOLAR CELLS and AMACRINE CELLS. The axons of retinal ganglion cells form the OPTIC NERVE.

**retinal horizontal cell** any of various neurons in the retina that make lateral connections between photoreceptors, RETINAL BIPOLAR CELLS, and one another. Their cell bodies are located in the INNER NUCLEAR LAYER of the retina.

**retinal image** the inverted picture of an external object formed on the retina of the eye. The resolution of the image varies with the diameter of the pupil, the focus becoming sharper as illumination of the object increases and the aperture of the pupil decreases.

**retinal light** a sensation of light experienced in the absence of any type of visual stimulation, which is thought to result from neural activity within the visual system. Also called **dark light**.

**retinal oscillations** the alternating sensations or a series of sensations that persist after a brief visual stimulation. Examples include CHARPENTIER'S BANDS and FLIGHT OF COLORS.

**retinal pigment epithelium (RPE)** see PIGMENT EPITHELIUM.

**retinal receptive field** see VISUAL RECEPTIVE FIELD.

**retinal rod** any of various photoreceptors in the retina that respond to low light levels, as opposed to RETINAL CONES, which require moderate to bright light for activation. In primates, which have both rods and cones, the rods are excluded from the center of the retina, the FOVEA CENTRALIS. All rods contain the same PHOTOPIGMENT, rhodopsin; therefore, the rod pathways do not provide color information. The connections of the rod pathways enhance retinal sensitivity to light, but acuity is relatively poor. See also SCOTOPIC VISION.

**retinal size** the dimensions of the retinal image. Retinal size diminishes in proportion to an object's distance from the eye. The perception of size is a scaled estimate of object distance and retinal size.

**retinene** *n.* see RETINAL.

**retinex theory** a theory based on the idea that color registration is carried out in the brain. Demonstrations such as the LAND EFFECT suggest that wavelengths register on the color-sensitive components of the retina as color-separated "photos." The visual mechanisms in the brain then compare the average of the long-wave photos with the average of the shorter-wave photos, assigning different colors according to the ratios between them. Also called **Land theory of color vision**.

**retinitis** *n.* inflammation of the retina.

**retinitis pigmentosa** a disorder of the retina marked by progressive atrophy of the photoreceptors (affecting rods more than cones) and disturbances in the retinal PIGMENT EPITHELIUM. Retinitis pigmentosa causes NIGHT BLINDNESS and visual field loss (see TUNNEL VISION). Although most commonly a hereditary condition, it has been associated with the use of PHENOTHIAZINE antipsychotics, such as chlorpromazine and especially thioridazine.

**retinol** *n.* see VITAMIN A.

**retinopathy of prematurity (ROP)** an eye disorder in which irregular development of blood vessels in the retina, as well as growth of fibrous (scar) tissue due to vessel leakage, may lead to retinal detachment (see DETACHED RETINA) and, in severe cases, profound vision loss. ROP most often affects preterm infants with a birth weight of less than 1,250 g (2.75 lbs) and a gestational age at birth of under 31 weeks. Other risk factors include apnea, sepsis, prolonged parenteral nutrition (intravenous feeding), blood transfusions, and excessive oxygen administration. Formerly called **retrolental fibroplasia**.

**retinoscope** *n.* a device used to assess the refractive state of the eye. It projects a beam of light into the eye; by determining the direction in which the light moves when the retinoscope is moved, the clinician can detect MYOPIA, HYPEROPIA, and ASTIGMATISM. Lenses of various powers can be placed between the retinoscope and the eye to determine the correction that provides the best refraction for the patient. Compare OPHTHALMOSCOPE.

**retinotopic map** the point-by-point representation of the retinal surface in another structure in the visual sys-



tem, such as the STRIATE CORTEX. **Visuotopic map** is sometimes used synonymously but more properly refers to the representation of the visual field in any neural structure.

**retinotopy** *n.* in the visual cortex, the spatial organization of neuronal responses to stimuli and their orderly topographic arrangement, or RETINOTOPIC MAP, in the visual field.

**retirement counseling** individual or group counseling of employees to help them prepare for retirement. Discussions usually include topics such as norms for this transition, mental and physical health, recreational activities, part-time or consultant work, finances, insurance, government programs, and issues related to change of residence.

**retreat from reality** see FLIGHT FROM REALITY.

**retrieval** *n.* **1.** the process of recovering or locating information stored in memory. Retrieval is the final stage of memory, after ENCODING and RETENTION. **2.** in information science, the recovery of information from a computer or other storage device.

**retrieval block** a brief inability to recall a specific piece of information, accompanied by the feeling that there is an impediment or block to its recollection. The well-known TIP-OF-THE-TONGUE PHENOMENON is an example.

**retrieval cue** a prompt or stimulus used to guide memory recall. See CUE-DEPENDENT FORGETTING; ECPHORY; ENCODING SPECIFICITY.

**retrieving behavior** a component of parental behavior among some nonhuman animals that is characterized by picking up and carrying to the nest young offspring that have wandered away or have been born outside the nest.

**retroactive interference** INTERFERENCE that occurs when new learning or exposure to new information impairs the ability to remember material or carry out activities previously learned, especially if the two sets of material are similar. For instance, studying French in college may retroactively interfere with what is remembered of Spanish learned in high school. Retroactive interference is one of the processes that account for forgetting. Also called **retroactive inhibition**. Compare PROACTIVE INTERFERENCE.

**retrobulbar** *adj.* behind the eyeball.

**retrochiasmatic visual deficit** see POSTCHIASMATIC VISUAL DEFICIT.

**retrocochlear hearing loss** any auditory disorder related to the neural pathways of the eighth cranial nerve (see AUDITORY NERVE) and the higher centers of the central nervous system (i.e., beyond the cochlea).

**retrocognition** *n.* in parapsychology, the experiencing of a past event as if it were occurring in the present, or knowledge of a past event that includes details that could not be learned, inferred, or verified through normal means. In a test of retrocognition, the participant might be asked to guess the outcome of an earlier set of trials involving ZENER CARDS or similar stimulus materials. Also called **postcognition**. See also BACKWARD DISPLACEMENT. Compare PRECOGNITION. [coined by English poet and philologist Frederic William Henry Myers (1843–1901)]

**retrograde amnesia** see AMNESIA.

**retrograde degeneration** a pattern of neuron destruction following axonal injury that spreads backward

along the axon, toward and then into the nerve cell body. Compare ANTEROGRADE DEGENERATION.

**retrograde ejaculation** the ejaculation of semen in a reverse direction, into the urinary bladder, from which it is excreted later. This may be a result of surgery of the prostate gland, and it also occurs when the penis is squeezed just before ejaculation—a misguided attempt at preventing impregnation. Retrograde ejaculation is occasionally associated with the use of antidepressants, including the TRICYCLIC ANTIDEPRESSANTS and SSRIs, as well as conventional antipsychotic agents (particularly thioridazine). There are also reports of retrograde ejaculation with ATYPICAL ANTIPSYCHOTICS (e.g., risperidone).

**retrograde memory** the ability to recall events that occurred or information that was acquired prior to a particular point in time, often the onset of illness or physical damage such as brain injury. For example, an individual with deficits of retrograde memory (i.e., retrograde AMNESIA) might not remember the name of a close childhood friend but would remember the name of a person just introduced to him or her. Compare ANTEROGRADE MEMORY.

**retrograde transport** see AXONAL TRANSPORT.

**retrogression** *n.* the return to a previous inappropriate behavior or to a behavior appropriate to an earlier stage of maturation when more adult approaches fail to solve a conflict. It is approximately equivalent to REGRESSION but without the full psychoanalytic connotations.

**retrogressive formation** see BACK-FORMATION.

**retrolental fibroplasia** see RETINOPATHY OF PREMATURITY.

**retroanal olfaction** sensations of smell arising via the nasopharynx from an odorant in the mouth (compare ORTHONASAL OLEFACTION). Retroanal olfaction is easily confused with gustatory (taste) sensations.

**retropulsion** *n.* walking or running backward with short steps, observed in some patients with parkinsonism. —**retropulsive** *adj.*

**retrospection** *n.* the process of reviewing or reflecting on an experience from the past, either directed (as in learning and memory research) or spontaneous (as in evaluating one's behavior in a given situation).

**retrospective audit** in health administration, a method of determining medical necessity or appropriate billing practices for services that have already been rendered.

**retrospective cohort study** research that compares outcomes for groups of individuals who differ on a single identified characteristic that occurred in the past. For example, a researcher studying exposure to secondhand tobacco smoke might use existing survey data to divide a sample into groups or cohorts based on reported exposure in their childhood homes (no smoking, one person smoked, more than one person smoked) before examining current health problems. Because the research relies on reports of past occurrences, inaccuracies may arise due to poor recall. See also RETROSPECTIVE RESEARCH.

**retrospective confidence judgment** an individual's assessment of how well he or she did on a test, typically one involving recall of learned information. Such judgments tend to be only weakly correlated with a participant's actual performance on the test. Compare EASE-OF-LEARNING JUDGMENT.

**retrospective falsification** 1. the alteration of a story each time it is told in order to emphasize its favorable points or make it more interesting. It may be deliberate or unintentional. [defined by British psychologist Donovan Hilton Rawcliffe in his 1952 book, *The Psychology of the Occult*] 2. the addition of false details to memories of past experiences.

**retrospective medical audit** see MEDICAL AUDIT.

**retrospective memory** see PROSPECTIVE MEMORY.

**retrospective research** observational, nonexperimental research that tries to explain the present in terms of past events; that is, research that starts with the present and follows participants backward in time. For example, an investigator may select a group of individuals who exhibit a particular problematic symptom and then study them to determine if they had been exposed to a risk factor of interest. Also called **retrospective study**. Compare PROSPECTIVE RESEARCH.

**retrospective sampling** a technique in which participants or cases from the general population are selected for inclusion in experiments or other research based on their previous exposure to a risk factor or the completion of some particular process. Participants are then examined in the present to see if a particular condition or state exists, often in comparison to others who were not exposed to the risk or did not complete the particular process. Compare PROSPECTIVE SAMPLING.

**retrospective validity** the extent to which an instrument that purports to measure a particular behavior can be shown to correlate with past occurrences that demonstrate this behavior. For example, a researcher evaluating a new measure of accident proneness might administer it to a sample of respondents and then check their archived medical records to determine if higher test scores on the measure correlate with the number of actual treated injuries in the past. It is one of several types of CRITERION VALIDITY. Also called **postdictive validity**. See also CONCURRENT VALIDITY; PREDICTIVE VALIDITY.

**Rett syndrome** a genetic disorder that occurs almost exclusively in female children who develop normally in early infancy but then, between 6 and 18 months of age, undergo rapid regression in motor, cognitive, and social skills; these skills subsequently stabilize at a level that leaves the child with intellectual disability. Symptoms generally include loss of language skills, hand motion abnormalities (e.g., hand wringing, other repetitive, purposeless movements), learning difficulties, gait disturbances, breathing problems, seizures, and pronounced deceleration of head growth. See AUTISM SPECTRUM DISORDER. [first described in 1966 by Andreas **Rett** (1924–1997), Austrian pediatrician]

**reuptake** *n.* the process by which neurotransmitter molecules that have been released at a SYNAPSE are reabsorbed by the presynaptic neuron that released them. Reuptake is performed by TRANSPORTER proteins in the presynaptic membrane.

**reuptake inhibitor** a substance that interferes with the reabsorption of neurotransmitters by the presynaptic neurons that released them. For example, selective serotonin reuptake inhibitors (see SSRI) are thought to block the reabsorption of serotonin, thereby increasing the amount of serotonin available to bind to postsynaptic receptors.

**revealed-differences technique** a method of study-

ing the behavior of members of a dyad or family in a laboratory setting by having them first independently complete a questionnaire, often on somewhat controversial topics. Once the questionnaires are completed and the answers compared, the experimenter presents to the reassembled group of participants one or more of the questionnaire items on which the participants disagreed, asks them to discuss their differing answers, and observes the ways in which the participants reconcile their differences.

**reverberating circuit** a neural circuit in which nerve impulses that were initially activated in response to stimuli are more or less continuously reactivated so that retrieval of information on demand is possible. A theory of reverberating circuits has been proposed to explain learning and memory processes. Although reverberating circuits have been demonstrated only in the autonomic nervous system, they are also believed to exist in the central nervous system. Also called **reverberatory circuit**.

**reverie** *n.* a pleasant state of daydreaming or musing.

**reversal design** an experimental design, generally used when only a single group is being studied, that attempts to counteract the confounding effects (see CONFOUND) of sequence and treatment by alternating baseline conditions with treatment conditions. Examples include the A-B-A DESIGN and other similar combinations. See also ALTERNATING TREATMENTS DESIGN.

**reversal error** a mistake in which a word or letter is read or written backward (e.g., *tip* for *pit*, *b* as *d*). When reversal errors are marked and developmentally inappropriate, they are indicative of DYSLEXIA. See also STREPHOSYMBOLIA.

**reversal learning** in DISCRIMINATIONS involving two alternatives, the effect of reversing the contingencies associated with the two alternatives. For example, a monkey could be trained under conditions in which lever presses when a red light is on result in food presentation and lever presses when a green light is on are without effect. The contingencies are then reversed, so that presses when the red light is on are ineffective and presses when the green light is on result in food presentation. If the monkey's behavior adapts to the new contingencies (i.e., it presses the lever only when the green light is on), reversal learning has occurred.

**reversal of affect** in psychoanalytic theory, a change in the AIM OF THE INSTINCT into its opposite, as when a masochistic impulse to hurt the self is transformed into a sadistic impulse to hurt others, or vice versa. Also called **affect inversion**; **inversion of affect**.

**reversal shift** in DISCRIMINATIONS involving two alternatives, a reversal of contingencies. For example, in initial training, a white stimulus might be designated as correct and black as incorrect. A reversal shift would mean that, in a later phase of the training, black becomes correct and white incorrect. Compare NONREVERSAL SHIFT.

**reversal theory** a theory of motivation, emotion, and personality that attempts to explain the relationship between arousal and performance. It suggests that the way an individual interprets the arousal, rather than the amount of arousal, affects performance and that the individual can reverse the positive-negative interpretation from moment to moment.

**reverse anorexia** see MUSCLE DYSMORPHIA.

**reverse causality** the common error of mistaking

cause for effect and vice versa. Asking whether an event or condition considered to be the cause of a phenomenon might in reality be its effect can be a useful check against preconceptions and generate fresh, challenging ideas. For example, the poverty of Mr. X may be seen as an effect of his financial irresponsibility, but what if this presumed irresponsibility is in fact an effect of his poverty? Considering a reversed causality is also a useful strategy for dealing with correlational data. See also FALSE CAUSE; HISTORICAL FALLACY.

**reverse counterbalancing** a specific procedure for ordering stimulus materials in a research study that involves administering one order (A-B-C) for one half of the participants and the opposite order (C-B-A) for the other half. Reverse counterbalancing is used to minimize any potential influence of presentation on results.

**reversed dependency trap** a situation in which the personal SELF-WORTH of a parent or parents becomes dependent on their child's performance in school, sport, or some other social context.

**reverse discrimination** a term sometimes used to denote advantageous or preferential treatment of a historically disfavored or minority group over a generally favored or majority group, as when twice as many women as men are promoted to management positions. The concept of reverse discrimination is controversial, especially in the context of AFFIRMATIVE ACTION and similar policies. Also called **positive discrimination**. See EQUAL OPPORTUNITY. See also DISCRIMINATION.

**reverse tolerance** an effect of certain drugs, usually psychoactive substances (particularly CNS stimulants), in which repeated use alters the body's sensitivity so that repeated administration of the drug will enhance its effects. Also called **sensitization**. Compare TOLERANCE.

**reversibility** *n.* in PIAGETIAN THEORY, a mental operation that reverses a sequence of events or restores a changed state of affairs to the original condition. It is exemplified by the ability to realize that a glass of milk poured into a bottle can be poured back into the glass and remain unchanged. Reversibility can be expressed in terms of NEGATION or COMPENSATION. See also CONSERVATION.

**reversible dementia** deterioration or impairment of cognitive function in older adults that is caused by nonneurological conditions such as depression, drug or alcohol abuse, normal-pressure hydrocephalus, metabolic diseases such as hypothyroidism and Addison's disease, and vitamin B<sub>12</sub> deficiency. Treatment of the underlying condition may bring only partial improvement to cognitive functioning, although improvement to full functioning may occur with early diagnosis and intervention. Sometimes also called **pseudosenility**.

**reversible figure** an AMBIGUOUS FIGURE in which the perspective easily shifts, so that at certain times specific elements appear to make up a distinct figure while at others those same elements appear as an indistinct background (see FIGURE-GROUND). Examples include the NECKER CUBE and RUBIN'S FIGURE.

**reversible inhibitor of monoamine oxidase-A (RIMA)** see MONOAMINE OXIDASE INHIBITOR.

**reversion** *n.* in genetics, the expression of a hereditary trait that was not manifested in either parent. The offspring may resemble a remote ancestor more closely than a member of the immediate family.

**Reversol** *n.* a trade name for EDROPHONIUM.

**ReVia** *n.* a trade name for NALTREXONE.

**Revised Children's Manifest Anxiety Scale (RCMAS)** see CHILDREN'S MANIFEST ANXIETY SCALE.

**revivification** *n.* a hypnotic technique in which suggestion is used to induce an individual to revive and relive forgotten or inhibited memories.

**revolutionary coalition** an alliance formed within a larger group or organization that seeks a radical and pervasive change in the functioning and structure of the group or organization.

**revolving-door phenomenon** the repeated readmission of patients to hospitals or other institutions, often because they were discharged before they had adequately recovered.

**reward** *n.* a lay word that is nearly synonymous with REINFORCEMENT. Sometimes it is used to describe the intent of someone providing a consequence for behavior, rather than the effectiveness of the consequence (as is required in the definition of reinforcement) in influencing the frequency or probability of occurrence of a particular behavior.

**reward center** see PLEASURE CENTER.

**reward dependence** see CLONINGER'S PSYCHOBIOLOGICAL MODEL OF PERSONALITY; TEMPERAMENT AND CHARACTER INVENTORY.

**rewarded alternative method** see REINFORCEMENT OF ALTERNATIVE BEHAVIOR.

**reward expectancy** the hypothesized state of an organism that has been exposed to a situation in which REINFORCEMENT occurs. [first described by Edward C. TOLMAN]

**reward power** a capacity to influence others based on the ability or the promise to deliver desired rewards. The strength of reward power increases with (a) the value of the rewards and (b) the extent to which the target of influence is dependent on the influencer for the rewards.

**reward responsiveness** see CARVER AND WHITE'S BIS/BAS SCALES.

**reward system** a set of interrelated factors that link a particular stimulus with some form of satisfaction or pleasure.

**reward theory** any of a group of hypotheses that focus on the function of satisfying or pleasurable stimuli (i.e., rewards) in learning, approach behavior, and decision making. A general area of psychological study, reward theory has applications in numerous contexts, including interpersonal relationships, clinical diagnosis and treatment, and business. For example, the **reward theory of attraction** states that people develop strong relationships with those with whom they have positive, fulfilling interactions, particularly when the benefits gained do not require much in return. Similarly, the **positive reward theory** states that addiction stems from the perception of substances as pleasant and gratifying, and the **mutual reward theory** of business states that managers and employees work together more productively when each provides the other with something positive in compensation for good performance (e.g., greater independence, public recognition, dependability). Numerous brain-based mechanisms are believed to be involved in reward-related processes—for example, the neu-

rotransmitter dopamine and neural structures such as the NUCLEUS ACCUMBENS and ORBITOFRONTAL CORTEX.

**rewrite rule** see PHRASE-STRUCTURE GRAMMAR.

**Key Auditory Verbal Learning Test (RAVLT)** a memory test requiring the participant to learn verbal material, generally lists of unrelated nouns, over several spoken presentations. In the standard format, the examiner reads aloud a list of 15 words and asks the participant to repeat all the words he or she can remember, in any order. After writing down the words recalled by the participant, the examiner rereads the list four more times, and each time the participant recalls as many words as possible. Next, the examiner presents a second list of 15 different words, allowing the participant only one attempt at recall. Immediately thereafter, the participant is asked to remember as many words as possible from the first list. Finally, after a 20- to 40-minute delay, the examiner again asks the participant to recall as many words as possible from the first list. In certain cases, the examiner also asks the participant to identify the original 15-word list from a written list of 30 to 50 words. The RAVLT evaluates immediate memory, delayed recall, and recognition memory and is often administered as part of a NEUROPSYCHOLOGICAL ASSESSMENT. Also called **Auditory Verbal Learning Test (AVLT)**. [originally developed in 1941 by André **Rey** (1906–1965), Swiss psychologist]

**Key Complex Figure Test (RCFT)** see COMPLEX FIGURE TEST. [André **Rey**]

**Key–Osterrieth Complex Figure Test (ROCFT)** see COMPLEX FIGURE TEST. [André **Rey**; Paul-Alexandre **Osterrieth**]

**R factor analysis** see R-TECHNIQUE FACTOR ANALYSIS.

**RFT 1.** abbreviation for RELATIONAL FRAME THEORY. **2.** abbreviation for ROD-AND-FRAME TEST.

**rhabdomancy** *n.* the art of DIVINATION by rod or wand, as in the practice of DOWSING for water, minerals, buried treasure, or the like using a forked stick. —**rhabdomancer** *n.*

**Rh blood-group incompatibility** an antigen-antibody reaction that occurs when blood from an Rh-positive individual is mixed with blood from an Rh-negative individual (see RH FACTOR) during transfusion or pregnancy. In pregnancy, this arises if an Rh-negative mother bears a child that has inherited Rh-positive blood: The fetal Rh antigens pass through the placental membrane, and maternal antibodies react through the placenta to destroy the fetal red blood cells. The damaged blood cells yield bilirubin, which a fetus cannot detoxify, and KERNICTERUS may result. Also called **Rh reaction**.

**RHC** abbreviation for RURAL HEALTH CLINIC.

**rheoencephalography** *n.* the measurement of blood flow of the brain, typically using a device known as a **rheoencephalograph** that records the impedance (resistance) of cerebral vessels to the passage of an electrical current. —**rheoencephalographic** *adj.*

**rhesus factor** see RH FACTOR.

**rhesus monkey** a small primate, native to India, Nepal, and Afghanistan, that is often used in psychological, biological, and medical research because of its similarity to humans.

**rhetorical-question message** a persuasive commu-

nication that includes rhetorical questions as a means of encouraging careful scrutiny of the message. See also MESSAGE FACTORS.

**rheumatoid arthritis** see ARTHRITIS.

**Rh factor (rhesus factor)** any of at least eight different antigens, each determined genetically, that may be attached to the surface of an individual's red blood cells (the name derives from the rhesus monkey used in early studies of the factor). A person whose blood cells carry an Rh factor is said to be **Rh-positive**. One whose blood cells lack an Rh factor is **Rh-negative**. Some 99% of African Americans, Native Americans, and Asian Americans and 85% of European Americans are Rh-positive. See also RH BLOOD-GROUP INCOMPATIBILITY.

**rhinal fissure** a fissure or groove on the anterior medial surface of each TEMPORAL LOBE in the brain. Also called **rhinal sulcus**.

**Rhine cards** see ZENER CARDS. [Joseph B. RHINE]

**rhinencephalon** *n.* the portion of the brain that includes the limbic system; olfactory nerves, bulbs, and tracts; and related structures. The term literally means “smell brain,” because early anatomists assumed it was an olfactory organ itself.

**rhino- (rhin-)** *combining form* nose or sense of smell.

**rhinolalia** *n.* a speech quality characterized by unusual nasal resonance, sometimes due to abnormalities or obstruction within the nasal cavity.

**rhizomelic** *adj.* relating to or affecting the hip, shoulder, or both. For example, an affected individual may have one leg that is shorter than the other or contractures of the hip and shoulder joints.

**rhizotomy** *n.* a surgical procedure in which a spinal nerve root is severed within the spinal canal. A rhizotomy may be performed for the relief of pain or to control muscle spasms. The different types of rhizotomy include **anterior rhizotomy**, in which an anterior (motor) spinal nerve is cut; **posterior rhizotomy**, in which a posterior (sensory) spinal nerve is cut; and **trigeminal rhizotomy**, in which the sensory root fibers of the trigeminal nerve are transected.

**rho correlation** (symbol:  $\rho$ ) **1.** see POPULATION CORRELATION COEFFICIENT. **2.** see SPEARMAN CORRELATION COEFFICIENT.

**rhodopsin** *n.* a visual pigment associated mainly with function of the RETINAL ROD cells. Rhodopsin consists of the vitamin A aldehyde 11-*cis* retinal bound to the protein OPSIN. When activated by light (photons), 11-*cis* retinal is transformed into all-*trans* retinal, which detaches from the opsin. This initiates a cascade of events that results in VISUAL TRANSDUCTION. Also called **visual purple**. See SCOTOPIC; VISUAL CYCLE.

**rhombencephalon** *n.* see HINDBRAIN.

**Rh reaction** see RH BLOOD-GROUP INCOMPATIBILITY.

**rhyming delirium** compulsive speaking or responding in rhymes, occasionally associated with a MANIC EPISODE.

**rhythm** *n.* **1.** a regular pattern of changes, fluctuations, or occurrences, such as a BIOLOGICAL RHYTHM. **2.** the frequency of BRAIN WAVES, identified as alpha waves, beta waves, gamma waves, delta waves, and theta waves. **3.** the cadence or long-term temporal structure of similar sounds. —**rhythmic** or **rhythmical** *adj.*

**rhythmic stereotype** a gross motor movement, such as body rocking or foot kicking, that has no apparent function. It is a form of LOCOMOTOR PLAY that occurs in the 1st year of life.

**rhythmic stimulation** use of repetitive auditory or visual input to produce synchronized brain activity, as observed via electroencephalography. Studies in which participants are exposed to flickering lights or repetitive sounds have recorded positive effects on pain management, attention, and mood. Some bright-light rhythms may trigger epileptic seizures in susceptible individuals, however. See also PHOTIC DRIVING.

**rhythm method** a technique of contraception in which a woman abstains from coitus during the days of her menstrual cycle that she is most likely to become pregnant, from just before until just after ovulation. The rhythm method is not very effective because of the difficulty in predicting the precise time of ovulation. Predictions are made by charting rectal or vaginal temperature changes daily or by testing changes in the sugar content of the cervical mucus.

**RI** abbreviation for random interval. See RANDOM-INTERVAL SCHEDULE.

**RIA** abbreviation for RADIOIMMUNOASSAY.

**ribonucleic acid** see RNA.

**ribosomal RNA** see RNA.

**ribosome** *n.* an organelle, consisting of RNA and proteins, found in large numbers in all cells and responsible for the translation of genetic information (in the form of messenger RNA) and the assembly of proteins. Ribosomes can occur free in the cytoplasm or be attached to the ENDOPLASMIC RETICULUM. —**ribosomal** *adj.*

**Ribot's law** **1.** the principle that the most recently acquired memories are the most vulnerable to disruption from brain damage. As a result, a TEMPORAL GRADIENT is observed in retrograde AMNESIA. **2.** a generalization stating that when a multilingual person recovers from APHASIA caused by a stroke or cerebral injury, the language recovered first will be the person's native language. Compare PITRES' RULE. [Théodule RIBOT]

**Ricco's law** the principle that VISUAL THRESHOLD is a function of the intensity of a visual image and its area on the fovea. Compare PIPER'S LAW. [Annibale **Ricco** (1844–1919), Italian astrophysicist]

**rich interpretation** an approach to analyzing the language of young children that goes beyond the literal sense of the word or words used and takes into account the surrounding verbal and nonverbal contexts to infer the full meaning of the utterance and draw conclusions about the child's linguistic COMPETENCE. See HOLOPHRASE.

**rich medium** see MEDIA RICHNESS.

**rickets** *n.* see CALCIUM-DEFICIENCY DISORDERS.

**Riddoch's phenomenon** the ability of patients with injury to the visual system beyond the optic chiasm to see moving, but not stationary, light stimuli (**statokinetic dissociation**). Riddoch's phenomenon can also be associated with damage to the optic nerve. See also CEREBRAL AMBLYOPIA. [first described in 1917 by George **Riddoch** (1888–1947), British neurologist]

**ridge regression** a variant on ordinary LEAST SQUARES REGRESSION designed to remedy problems that arise from

MULTICOLLINEARITY. It involves modifying the MAIN DIAGONAL of the CORRELATION MATRIX before calculating the coefficients, thus eliminating the associations among the INDEPENDENT VARIABLES. A researcher can use the information obtained from this analysis to determine whether certain independent variables should be removed from the final model. Also called **damped regression**.

**right-and-wrong-cases method** see METHOD OF CONSTANT STIMULI.

**right-and-wrong test** see M'NAGHTEN RULE.

**right brain** the right cerebral hemisphere of the brain. The term is sometimes used to designate functions or COGNITIVE STYLE supposedly mediated by the right (rather than by the left) hemisphere, such as creative thinking. Compare LEFT BRAIN. See also HEMISPHERIC LATERALIZATION.

**right censoring** inability of a researcher to document the results of a study when all participants have reached a target event (e.g., achieving a specific milestone) at the conclusion of the study period. This may occur for one of three reasons: A participant may never experience the target event or may experience it after the observation period has ended; a participant may experience a competing event that prevents him or her from experiencing the target event; or a participant may be lost to ATTRITION. Compare LEFT CENSORING.

**right-handedness** *n.* the preferential use of the right hand for major activities, such as eating, writing, and throwing. It is a component of DEXTRALITY and applies to about 90% of the population. See also LATERALITY. Compare LEFT-HANDEDNESS.

**right hemisphere** the right half of the cerebrum, the part of the brain concerned with sensation and perception, motor control, and higher level cognitive processes. The two CEREBRAL HEMISPHERES differ somewhat in function; for example, in most people, the right hemisphere has greater responsibility for spatial attention. See HEMISPHERIC ENCODING–RETRIEVAL ASYMMETRY; HEMISPHERIC LATERALIZATION. Compare LEFT HEMISPHERE.

**right-hemisphere consciousness** the hypothesis that the right cerebral hemisphere of the brain is a conscious system in its own right, even though it typically has a minor role in spoken communication (compare LEFT-HEMISPHERE CONSCIOUSNESS). The right hemisphere is postulated to function in a holistic, nonlinear manner, specialized for spatial and SUPRASEGMENTAL (prosodic) perception. The hypothesis arose from Roger SPERRY's work with SPLIT-BRAIN patients in the 1960s and was widely popularized. Modern research is generally much more cautious in assigning specific independent functions to either side of the intact brain.

**righting reflex** the automatic tendency of an organism to return to an upright position when it has been thrown off balance or placed in a supine position. Also called **righting reaction**.

**right-left disorientation** a disorder characterized by general difficulty in distinguishing between the right and left sides or right and left directions. It has been linked to APHASIA and other disorders of comprehension but also occurs in their absence. Although thought to be related to disorders of the left parietal lobe of the cerebral cortex, right-left disorientation also occurs to a mild degree in otherwise healthy adults.

**right-left orientation test** any test that measures the ability to discriminate between right and left directions.

**right-or-wrong test** see M'NAGHTEN RULE.

**rights of patients** see PATIENTS' RIGHTS.

**rights of people with mental disabilities** rights enshrined in the United Nations Standard Rules on the Equalization of Opportunities for Persons With Disabilities (1993), including people with intellectual and developmental disabilities. These include (a) the right to receive proper medical care, physical therapy, education, training, rehabilitation, assistive technology, and guidance; (b) the right to economic security and to work; (c) the right to live with their families or with foster parents or, if this is not feasible, to live in a residential setting under circumstances as close as possible to family life; and (d) the right to protection from abuse and exploitation. See also UNITED NATIONS DECLARATION ON THE RIGHTS OF MENTALLY RETARDED PERSONS.

**right to die** the right to suicide or physician-assisted suicide that some consider should be available for terminally ill patients (see ASSISTED DEATH). Right-to-die laws have been passed in a few states and countries. This is distinguished from the RIGHT TO REFUSE TREATMENT in cases in which the patient is on life support.

**right to refuse treatment** **1.** the right of patients to refuse treatment that may be potentially hazardous or intrusive, particularly when such treatment may not be in the best interests of the patient. In the United States, various state laws and court rulings support the right of patients to receive or reject certain treatments, but there is a lack of uniformity in such regulations. See also FORCED TREATMENT. **2.** the right of terminally ill patients (e.g., those on life-support systems) to refuse treatment intended to prolong their lives. See also RIGHT TO DIE.

**right to treatment** **1.** a statutory right, established at varying governmental levels, stipulating that people with disabilities or disorders, usually persistent or chronic in nature, have the right to receive care and treatment suited to their needs. Such statutory rights may apply nationally or to certain state or provincial areas, and they may be limited to certain conditions and disabilities. **2.** the principle that a facility that has assumed the responsibility of treating a patient is legally obligated to provide treatment that is adequate and appropriate.

**right-wing authoritarianism (RWA)** a theoretical refinement of the theory of the AUTHORITARIAN PERSONALITY that identifies political conservatism, authoritarian submission, authoritarian aggression, and conventionalism as key predictors of prejudice, racism, and right-wing extremism. [first proposed in 1981 by Canadian social psychologist Robert A. Altemeyer]

**rigid family** a family structure in which rules are never questioned and have no exceptions. Such a structure can cause emotional and behavioral problems for the children of the family.

**rigidity** **n.** **1.** stiffness or inflexibility, particularly MUSCULAR RIGIDITY. **2.** a personality trait characterized by strong resistance to changing one's behavior, opinions, or attitudes or by the inability to do this. **3.** the tendency, after brain injury, to be inflexible and complete a task in only one manner, despite more effective available alternatives. Compare PLASTICITY. See also DECEREBRATE RIGIDITY. —**rigid** *adj.*

**rigid rotation** see ORTHOGONAL ROTATION.

**Riley-Day syndrome** see FAMILIAL DYSAUTONOMIA. [Conrad Milton Riley (1913–2005) and Richard Lawrence Day (1905–1989), U.S. pediatricians]

**RIMA** abbreviation for reversible inhibitor of monoamine oxidase-A. See MONOAMINE OXIDASE INHIBITOR.

**ring chromosome 18** a congenital chromosomal disorder characterized by MICROCEPHALY, ear and eye abnormalities, and mild to severe cognitive impairment. The condition is not hereditary but due to breakage of the arms of chromosome 18, which fuse to form one or more rings of varying sizes.

**Ringelmann effect** the tendency for groups to become less productive in terms of output per member as they increase in size. The effect is named for Max Ringelmann (1861–1931), a French agricultural engineer who studied the productivity of horses, oxen, men, and machines in various agricultural applications. He found that groups often outperform individuals but that the addition of each new member to a group yields less of a gain in productivity. Subsequent studies suggest that this loss of productivity is caused by the reduction of motivation experienced in groups (SOCIAL LOAFING) and the inefficiency of larger groups.

**ring-finger dermatitis** a skin disease involving an area of a finger where a ring usually is worn. The condition may be marked by itching, dryness, redness, or eruption of small blisters. If the condition is not caused by irritation from or an allergic reaction to metals or agents in the ring or in detergents trapped beneath the ring (the most common cause), ring-finger dermatitis may be a PSYCHOSOMATIC DISORDER.

**Rinne test** a tuning-fork test used to aid in differentiating between conductive and sensorineural hearing loss. The sensation produced by the tuning fork when presented via air conduction is compared to that produced by placing the tuning fork against the MASTOID process of the temporal bone. [Friedrich Heinrich A. Rinne (1819–1868), German otologist]

**riot** *n.* violent disorder involving a large, hostile, and typically disorganized MOB. A number of different conditions can lead a crowd to riot, including panic over a limited resource, contagion of affect and violence in provocative situations, confrontation with another group, and oppressive social conditions. Although the concept of GROUP MIND traditionally has been associated with riots, EMERGENT-NORM THEORY suggests that rioting individuals are conforming to emergent-situation norms, and SOCIAL IDENTITY THEORY suggests that riots are instances of intergroup conflict. See also COLLECTIVE BEHAVIOR.

**rise** *n.* the distance along the *y*-axis between two points. Compare RUN.

**risk** *n.* **1.** the probability or likelihood that a negative event will occur, such as the risk that a disease or disorder will develop. **2.** the probability of experiencing loss or harm that is associated with an action or behavior. See also AT RISK; MORBIDITY RISK; RISK FACTOR. —**risky** *adj.*

**risk-as-feelings theory** a model stating that decision making in situations involving a degree of risk is often driven by emotional reactions, such as worry, fear, or anxiety, rather than by a rational assessment of the desirability and the likelihood of the various possible outcomes (see SUBJECTIVE EXPECTED UTILITY).

**risk assessment** the process of determining the danger an individual would be likely to pose if released from confinement due to mental illness or criminal acts. See ACTUARIAL RISK ASSESSMENT; CLINICAL RISK ASSESSMENT.

**risk-assessment matrix** a table used to prioritize hazards on the basis of risk, which is defined by the intersection between the probability of the hazards and the severity of their consequences. Also called **hazard-assessment matrix**.

**risk aversion** the tendency, when choosing between alternatives, to avoid options that entail a risk of loss, even if that risk is relatively small. Compare RISK PRONENESS.

**risk factor** a clearly defined behavior or constitutional (e.g., genetic), psychological, environmental, or other characteristic that is associated with an increased possibility or likelihood that a disease or disorder will subsequently develop in an individual. Compare PROTECTIVE FACTOR.

**risk level** the probability of making a TYPE I ERROR that one is willing to accept in null hypothesis SIGNIFICANCE TESTING.

**risk metrics** numbers, formulas, graphs, or other means of presenting or describing the probability or likelihood of developing a disease or disorder.

**risk perception** an individual's subjective assessment of the level of risk associated with a particular hazard (e.g., health threat). Risk perceptions vary according to factors such as past experiences, age, gender, and culture. For example, women tend to overestimate their risk of developing breast cancer. These exaggerated perceptions of risk may motivate people to seek genetic services, genetic testing, or prophylactic surgery. Also called **perceived risk**.

**risk proneness** the propensity to be attracted to, or the willingness to tolerate, options that entail a potentially high risk of loss. Compare RISK AVERSION.

**risk ratio** the comparison of one group's probability of experiencing an event (e.g., being diagnosed with lung cancer) to a second group's probability of experiencing that event. It is often used to describe health status following exposure to some stimulus or risk factor (e.g., lead in water) or clinical intervention. A value greater than 1 indicates the group under study has a higher probability than the control group of experiencing the event; a value less than 1 indicates the group under study has a lower probability of experiencing the event; and a value of exactly 1 indicates the two groups are equally likely to experience the event. Also called **relative risk**.

**risk-recreation model** see ADVENTURE-RECREATION MODEL.

**risk-rescue rating** a formula comparing the inherent risk of a method of attempted suicide with the likelihood of discovery and rescue.

**risk sensitivity** the ability of an organism to choose an environment where the availability of resources over time is stable. Individuals that do not show risk sensitivity choose environments with high variances in the stability of resources. If resources are good, these individuals and their offspring thrive; if resources are poor, they fare less well than risk-sensitive individuals.

**risk taking** **1.** a pattern of unnecessarily engaging in activities or behaviors that are dangerous or highly subject to chance. This pattern of behavior is often associated with substance abuse, gambling, high-risk sexual behaviors,

and extreme sports (e.g., mountain climbing). **2.** accepting a challenging task that simultaneously involves potential for failure as well as for accomplishment or personal benefit. It is often associated with creativity and taking calculated risks in the workplace or in educational settings.

**risk tolerance** **1.** the level of risk to which an individual is willing to be exposed while performing an action or pursuing a goal. Tolerance of risk is usually based on an assumption (justified or not) that the risk is slight, the consequences are minor, and both are outweighed by immediate benefits. **2.** the degree of economic loss that a person, company, or other organization is willing to risk in pursuit of a possible gain.

**risky prediction** a prediction made on the basis of a scientific hypothesis that has a real possibility of proving that hypothesis wrong. According to Austrian-born British philosopher Karl Popper (1902–1994), certain ostensibly scientific theories and hypotheses, including many in psychology, can be stretched in order to explain a range of possible experimental results. To the extent that this can occur, the theory or hypothesis is not genuinely falsifiable and thus not genuinely scientific. Popper held that scientific theories must be tested by means of risky predictions. See FALSIFIABILITY; FALSIFICATIONISM.

**risky shift** a tendency for the decisions of individuals to be more risky following group discussion. Research has revealed that group discussion does not make decisions more risky per se but simply serves to polarize group members in the direction of their initial views. Compare CAUTIOUS SHIFT.

**risperidone** *n.* an ATYPICAL ANTIPSYCHOTIC of the benzisoxazole class. It was the second atypical antipsychotic introduced into the U.S. market (CLOZAPINE was the first). It has a less frequent incidence of extrapyramidal symptoms than do conventional antipsychotics when used at a lower dose range, and it acts as a potent inhibitor of both D2 dopamine and 5-HT<sub>2</sub> serotonin receptors. It is also approved for bipolar disorder–related acute manic or mixed episodes and for irritability in autism. U.S. trade name: **Risperdal**.

**Ritalin** *n.* a trade name for METHYLPHENIDATE.

**rite** *n.* a culture-bound ceremony or ritual, often spiritual in nature.

**rite of passage** a ritual that marks a specific life transition, such as birth, menarche, marriage, or death, or a milestone such as a bar mitzvah, graduation, or admission to a new profession or association. In many prescientific societies, such rites are considered essential if the individual is to make a successful transition from one status to another. The persistence of rites of passage in modern secular societies where there is no such belief suggests that they can fulfill an important psychosocial function for both the individual and the social group. See BIRTH RITE; DEATH RITE; PUBERTY RITE.

**ritual** *n.* **1.** a form of COMPULSION involving a rigid or stereotyped act that is carried out repeatedly and is based on idiosyncratic rules that do not have a rational basis (e.g., having to perform a task in a certain way). Rituals may be performed to reduce distress and anxiety caused by an OBSESSION. **2.** a ceremonial act or rite, usually involving a fixed order of actions or gestures and the saying of certain prescribed words. Anthropologists distinguish between several major categories of ritual, although these can often overlap in practice: magic rituals, which involve an attempt to manipulate natural forces through symbolic, often imi-

tative, actions (e.g., pouring water on the ground to make rain); calendrical rituals, which mark the changing of the seasons and the passing of time; liturgical rituals, which involve the reenactment of a sacred story or myth, as in the Christian eucharist and many other religious rituals; RITES OF PASSAGE; and formal procedures that have the effect of emphasizing both the importance and the impersonal quality of certain social behaviors, as in a court of law. **3.** more generally, any habit or custom that is performed routinely and with little or no thought. —**ritualism** *n.* —**ritualistic** *adj.*

**ritual abuse** organized, repetitive, and highly sadistic abuse of a physical, sexual, or emotional nature, perpetrated principally on children. The abuse is reported as using rituals and symbols from religion (e.g., upside-down crosses), the occult, or secret societies. It may also include the creation of pornography or the selling of sexual access to children. Victims may be forced to engage in heinous acts, such as the killing of animals, as a means of coercing their participation and silence. The prevalence and even existence of ritual abuse have been the subject of much controversy. See also SATANISM.

**ritualization** *n.* the process by which a normal behavioral action becomes a communication signal representing the behavior or its physiological consequence. For example, among nonhuman animals, THREAT DISPLAYS may be the ritualization of the conflict between attack and escape, incorporating aspects of both, or a ritualization solely of impending attack, as when dogs pull back their lips in a snarl in response to a threat. This lip-pulling began as a way for dogs to avoid biting themselves in an attack, but as other animals recognized this behavior as a precursor to biting, it became ritualized into a warning communication. Animals learn that ritualized behavior can be an effective form of avoiding a fight.

**rivalry** *n.* competition between individuals or groups for a specific goal or for status and prestige within a particular field. See SIBLING RIVALRY.

**rivastigmine** *n.* a CARBAMATE that is a reversible acetylcholinesterase inhibitor, used for the treatment of mild to moderate dementia associated with Alzheimer's disease (see COGNITIVE ENHANCER). Because it can cause nausea and loss of appetite, low starting doses with a slow upward TITRATION are recommended. U.S. trade name: **Exelon**.

**RJP** abbreviation for realistic job preview. See JOB PREVIEW.

**RL** abbreviation for REIZ LIMEN.

**RMD** abbreviation for repetitive motion disorder. See REPETITIVE STRAIN INJURY.

**R methodology** a collection of methods used to evaluate individuals' scores on a set of objective measures, such as intelligence tests. Examples include FACTOR ANALYSIS and PRINCIPAL COMPONENTS ANALYSIS. Compare Q METHODOLOGY.

**RMI** abbreviation for repetitive motion injury. See REPETITIVE STRAIN INJURY.

**RMS** abbreviation for ROOT MEAN SQUARE.

**RMT** abbreviation for RECOGNITION MEMORY TEST.

**RN** abbreviation for REGISTERED NURSE.

**RNA** ribonucleic acid: a nucleic acid that directs the synthesis of protein molecules in living cells. There are three main types of RNA. MESSENGER RNA carries the GENETIC

CODE from the cell nucleus to the cytoplasm. **Ribosomal RNA** is found in ribosomes, small particles where proteins are assembled from amino acids. **Transfer RNA** carries specific amino acids for protein synthesis. Each of the 20 amino acids has a corresponding transfer RNA molecule to place the amino acid in the proper sequence in protein assembly. RNA is similar to DNA in structure except that it consists of a single strand of nucleotides (compared with the double strands of DNA), the base uracil (U) occurs instead of thymine (T), and the sugar unit is ribose, rather than deoxyribose.

**RNG** abbreviation for RANDOM NUMBER GENERATOR.

**road rage** aggressive or confrontational behavior while driving, typically triggered by an actual or imagined transgression by another driver. Often associated with traffic congestion, road rage varies in severity and can involve hostile verbal expression, hazardous driving, and interpersonal violence. It is not a recognized mental disorder, however.

**Robaxin** *n.* a trade name for METHOCARBAMOL.

**Robbers Cave experiment** a field study of the causes and consequences of conflict between groups. In the experiment, two groups of 11-year-old boys from similar backgrounds, none of whom previously knew one another, were sent camping in the same area of wilderness. During the first stage, the two groups were allowed to develop their own rules, structures, and collective identities in complete independence of one another. During the second stage, they were made aware of each other's presence and encouraged to develop a sense of rivalry through a series of competitive exercises; the result was deepening hostility leading to open violence. In the third stage, staff deliberately created various urgent problems, such as a fault in the water supply, that could be solved only by the two groups working together; the result was a complete reconciliation. See also SUPERORDINATE GOAL. [performed in 1954 by Muzafer SHERIF and colleagues; the study derives its name from the state park in Oklahoma that served as the site for the research]

**Roberts syndrome** an autosomal recessive disorder in which a child is born with abnormally short arms and legs as well as a cleft lip and palate. Other features include MICROCEPHALY and genital hypertrophy (enlargement). Few affected individuals survive early infancy, and those who do are likely to have severe intellectual disabilities. Also called **Appelt-Gerken-Lenz syndrome**. [described in 1919 by John Bingham **Roberts** (1852–1924), U.S. physician, and in 1966 by Hans **Appelt** (1919–1988), Hartmut **Gerken** (1934– ), and Widukind **Lenz** (1919–1995), German physicians]

**Robitussin** *n.* see DEXTROMETHORPHAN.

**robot** *n.* **1.** a machine that performs functions similar to those of a human (e.g., a spot-welding robot). **2.** a human being whose rigid, insensitive, or detached behavior resembles that of a machine. —**robotic** *adj.*

**robotics** *n.* the science of designing and constructing machines (AUTOMATONS) capable of performing functions similar to those of humans. For example, personal assistance robots are under development for individuals with disabilities. See CYBERNETICS.

**robust estimator** an ESTIMATOR for an unknown characteristic in a population that is less likely than others to be influenced by VIOLATIONS OF ASSUMPTIONS about the sam-



ple data on which it is based. For example, rather than using a mean to describe CENTRAL TENDENCY in a distribution with OUTLIERS, a researcher might choose a MEDIAN, a TRIMMED MEAN, or a WINSORIZED MEAN. Each option reflects a different way of handling the outliers, such as down-weighting them, replacing them with a new value, or ignoring them. See also RESISTANT ESTIMATOR.

**robustness** *n.* the ability of a statistical procedure to produce valid estimated values for a population characteristic (PARAMETER) despite violations of the ASSUMPTIONS on which the procedure is based.

**ROC curve** abbreviation for RECEIVER-OPERATING CHARACTERISTIC CURVE.

**ROCFT** abbreviation for Rey–Osterrieth COMPLEX FIGURE TEST.

**rocking** *n.* a stereotyped motor behavior in which the body rocks to and fro, often observed in children or adults with severe or profound intellectual disability, autism, or stereotypic movement disorder. Also called **body rocking**.

**Rock v. Arkansas** a case resulting in a 1987 ruling by the U.S. Supreme Court that it is a violation of DUE PROCESS rights to prohibit a defendant from presenting evidence discovered after undergoing hypnosis.

**rod** *n.* see RETINAL ROD.

**Rod-and-Frame Test (RFT)** a test used to study the role of visual and gravitational cues in judging the visual vertical. It is the most widely used measure of visual FIELD DEPENDENCE and FIELD INDEPENDENCE. The test consists of a movable rod inside a frame; the participant must adjust the rod to a true vertical position as the position of the frame is changed. Degree of error (i.e., the number of degrees away from 90°) is the measure used to score the test. The higher the score, the more field dependent the participant is; the lower the score, the more field independent he or she is. [developed in 1948 by U.S. psychologists Herman A. Witkin (1916–1979) and Solomon ASCH]

**rod-cone break** the shift in visual sensitivity that occurs during DARK ADAPTATION when the sensitivity of the RETINAL RODS first exceeds that of the RETINAL CONES. When visual sensitivity is measured in the dark following a very bright flash of light, the cones reach maximum sensitivity after about 7 minutes. However, overall visual sensitivity continues to improve for about 20 more minutes as RHODOPSIN regenerates and the rods reach their maximum sensitivity.

**rods of Corti** the two rows of stiff pillarlike structures that form an arch (the **arch of Corti**) in the ORGAN OF CORTI.

**rod vision** vision that depends solely on the RETINAL RODS, which are active in dim light. See also SCOTOPIC VISION.

**Roelofs effect** a distortion of space perception in which the subjective location of “straight ahead” is shifted by the presence of a large rectangle or frame whose center is located to one side of the true straight-ahead position. The subjective location of straight ahead moves in the same direction as the frame or rectangle. [C. Otto Roelofs, 20th-century Dutch physician]

**roentgenogram** *n.* a photographic record produced by X-RAY exposure. See RADIOGRAPHY. [Wilhelm Konrad Roentgen (1845–1923), German physicist]

**roentgen ray** see X-RAY. [Wilhelm Roentgen]

**Rogerian therapy** see CLIENT-CENTERED THERAPY.

**Rohypnol** *n.* a trade name for FLUNITRAZEPAM.

**Rokeach Dogmatism Scale** a 66-item scale developed in 1960 to measure individual differences in openness or closedness of belief systems (i.e., DOGMATISM) across several continua, such as “isolation and differentiation between belief and nonbelief systems” and “interrelations among primitive, intermediate, and peripheral beliefs.” Some studies have found the scale more useful in assessing “general authoritarianism” and “general intolerance.” [Milton Rokeach (1918–1988), U.S. psychologist]

**Rokeach Value Survey (RVS)** an instrument that assesses participants’ values to help them determine what is most important in their lives and make good personal choices. Two kinds of values are distinguished in the survey: instrumental, that is, modes of conduct and behavioral characteristics that are seen as socially desirable; and terminal, that is, end states of existence or ultimate modes of living that have been idealized. [Milton Rokeach]

**rok-joo** *n.* see KORO.

**Rolandic cortex** a region of the CEREBRAL CORTEX that lies in and adjacent to the CENTRAL SULCUS (Rolandic fissure), which marks the boundary between the frontal and parietal lobes. [Luigi Rolando (1773–1831), Italian anatomist]

**Rolandic fissure** see CENTRAL SULCUS. [Luigi Rolando]

**role** *n.* a coherent set of behaviors expected of an individual in a specific position within a group or social setting. Since the term is derived from the dramaturgical concept of role (the dialogue and actions assigned to each performer in a play), ROLE THEORY suggests that individuals’ actions are regulated by the part they play in the social setting rather than by their personal predilections or inclinations. When the behaviors associated with a particular role are poorly defined, ROLE AMBIGUITY may occur; when group members occupy two or more roles that call for incompatible behaviors, the result may be ROLE CONFLICT. See also GROUP ROLE; RELATIONSHIP ROLE; SEX ROLE; TASK ROLE.

**role ambiguity** indefinite expectations about the behaviors to be performed by individuals who occupy particular positions within a group or social setting. Role ambiguity is often caused by lack of clarity in the role itself, lack of consensus regarding the behaviors associated with the role, or the individual role taker’s uncertainty with regard to the types of behaviors expected.

**role conflict** a state of tension or distress caused by inconsistent or discordant expectations associated with one’s social or group role, as when a single role’s demands are inconsistent with each other (INTRAROLE CONFLICT) or when individuals occupy more than one role and the behaviors required by these roles are incompatible (INTER-ROLE CONFLICT).

**role confusion 1.** a state of uncertainty about a given social or group role. **2.** GENDER ROLE behavior in a male or female that is traditionally associated with the opposite sex. **3.** see IDENTITY VERSUS IDENTITY CONFUSION.

**role deprivation** the denial of culturally and psychologically significant statuses and roles to certain individuals or groups. Individuals can be unfairly deprived of social roles, as when they are required to retire at a specific age, or unfairly denied group roles, as when they are excluded

from leadership positions for no valid reason. See STATUS INCONGRUENCE.

**role differentiation** in groups and other social systems, the gradual increase in the number of roles and the decrease in their scope that tends to occur over time as each role becomes more specialized. For example, in many cases the LEADERSHIP ROLE divides, over time, into two: the task leader role and the relationship leader role. See COLEADERSHIP.

**role diffusion** a state of confusion about one's social role that typically occurs during adolescence. See IDENTITY VERSUS IDENTITY CONFUSION. [described by Erik ERIKSON]

**role enactment** see ASSUMED ROLE.

**role-enactment theory** an explanation of hypnosis as a social phenomenon, claiming that the hypnotized individual nonconsciously takes on the socially constructed role of a hypnotic subject and behaves accordingly. Belonging to the category of NONSTATE THEORIES OF HYPNOSIS, it was conceived in the 1950s by Theodore R. SARBIN, who developed the idea from his more general theory of role enactment in social behavior. See ASSUMED ROLE.

**role expectations** the traits, attitudes, and behaviors considered appropriate for an occupant of a particular position within a group or social setting. For example, being an elementary school teacher may be associated with expectations of warmth and patience, the desire to motivate students and help them achieve, and the ability to develop useful curricula and provide appropriate instruction. These expectations may be communicated to the occupant by other people in the occupant's ROLE SET or may be held by the occupant himself or herself. See also PYGMALION EFFECT; UPWARD PYGMALION EFFECT.

**role model** a person or group serving as an exemplar for the goals, attitudes, or behavior of an individual, who identifies with and seeks to imitate the role model.

**role overload** a situation resulting from the assumption of a role or of multiple roles in which one is asked to do more than one is capable of doing in a specific period of time (quantitative overload) or in which one is taxed beyond one's knowledge, skills, and abilities (qualitative overload).

**role play** a technique used in HUMAN RELATIONS TRAINING and psychotherapy in which participants act out various social roles in dramatic situations. Originally developed in PSYCHODRAMA, role play is now widely used in industrial, educational, and clinical settings for purposes such as teaching employees to handle sales problems, helping change attitudes and relationships among couples or family members, and rehearsing different ways of coping with stresses and conflicts.

**role-playing research** a study design in which participants are asked to assume the behavior of a specific character in a defined situation. It is a type of SIMULATION, often used in therapeutic and organizational contexts, that enables researchers to assess how individuals think, feel, and act under certain circumstances.

**role reversal** a technique used for therapeutic and educational purposes in which an individual exchanges roles with another individual to experience alternative cognitive styles (e.g., in problem solving), feelings, and behavioral approaches. In PSYCHODRAMA, the PROTAGONIST exchanges roles with an AUXILIARY EGO in acting out a significant interpersonal situation. Role reversal is also used in manage-

ment development programs, for example, as in an exchange of roles between a supervisor and an employee.

**role set** the group of people (and their associated roles) who are related to and interact meaningfully with the occupant of a particular role, communicating the attitudes and behaviors appropriate to that role. See ROLE EXPECTATIONS. [defined in 1957 by U.S. sociologist Robert King Merton (1910–2003)]

**role shift** in any two-person relationship, the adoption by one partner of the characteristic behavior of the other. See also ROLE REVERSAL.

**role taking** looking at a situation from the viewpoint of another person, typically for the purpose of understanding his or her thoughts and actions. Development of role-taking skills is considered an important step in the development of social cognition. The term is synonymous with PERSPECTIVE TAKING.

**role theory** a conceptual explanation of social behavior that assumes individuals' actions are defined, in part, by the role they occupy in a relationship, such as father, daughter, group member, leader, employee, boss, and so on. The theory suggests that by enacting roles individuals establish exchange relationships with one another, building interdependence that is essential for social coordination. See also ROLE AMBIGUITY; ROLE CONFLICT; ROLE DIFFERENTIATION; ROLE DIFFUSION; ROLE EXPECTATIONS; SOCIAL ROLE.

**rolfing** *n.* a deep-massage technique developed in the 1930s. It aims to relieve muscular tension, improve posture and balance, and enhance personal functioning through realignment of body structures. The technique is based on a theory that muscle massage can relieve both physical and psychological pain. Also called **structural integration**. [devised by Ida P. Rolf (1896–1979), U.S. physical therapist]

**ROM** abbreviation for RANGE OF MOTION.

**romance of leadership** the tendency for both organizational experts and laypeople to attribute organizational outcomes to a leader's influence rather than to other interpersonal and situational factors, due in part to the romanticized, heroic conception of the role of leaders in businesses and organizations. [coined in 1985 by U.S. organizational psychologists James R. Meindl (1952–2004), Sanford B. Ehrlich, and Janet M. Dukerich]

**Romanticism** *n.* an artistic and intellectual movement in Europe and America in the late 18th and early 19th centuries that, broadly, stressed the values of imagination, spontaneity, wonder, and emotional self-expression over the classical standards of balance, order, restraint, proportion, and objectivity. Its name derives from *romance*, the literary form in which desires, dreams, and idealistic challenges and adventures prevail over mundane realities. As a reaction in part against the scientific and technological advances of the time, Romanticism can be viewed as a precursor to humanistic movements in psychology (see HUMANISM; HUMANISTIC PSYCHOLOGY).

**romanticism factor** see CLASSICISM FACTOR.

**romantic love** a type of love in which intimacy and passion are prominent features. Although the loved party is often idealized, research indicates that the lover's sexual arousal is an especially important component of this type of love. In some taxonomies of love, romantic love is identified with PASSIONATE LOVE and distinguished from COMPAN-

IONATE LOVE; in others, it is seen as involving elements of both. See also LIMERENCE; LOVE SCALE; TRIANGULAR THEORY OF LOVE.

**Romazicon** *n.* a trade name for FLUMAZENIL.

**Romberg's sign** a diagnostic sign of certain neurological disorders, including LOCOMOTOR ATAXIA, that consists of a swaying motion and unsteadiness when the individual stands with eyes closed, feet together, and arms outstretched. [Moritz **Romberg** (1795–1873), German physician]

**Romeo and Juliet effect** the tendency of relationship partners, usually adolescents, to feel greater affection for their partners when they perceive others (e.g., parents) to be interfering with the relationship. The Romeo and Juliet effect is an example of reactance, or the tendency to find something more desirable when outside forces threaten to restrict one's access to it. See REACTANCE THEORY.

**roofie** *n.* see DATE-RAPE DRUG; FLUNITRAZEPAM.

**rooming-in** *n.* a practice in some hospitals in which a mother and her newborn child share the same room so that the mother can feed, care for, and establish a close relationship with the baby as soon after birth as is feasible.

**root cause analysis** a method that identifies the underlying cause or causes of a recurring problem (e.g., in the workplace) by using progressively more specific strategies to uncover the source.

**rooted graph** see GRAPH.

**rootedness** *n.* in the psychoanalytic theory of Erich FROMM, the need to establish bonds or ties with others that provide emotional security and serve to reduce the isolation and insignificance that Fromm believed were at the heart of human existence. It is manifested positively in BROTHERLINESS and negatively in INCESTUOUS TIES. Compare IDENTITY NEED.

**rooted tree** see TREE.

**rooting reflex** an automatic, unlearned response of a newborn to a gentle stimulus (e.g., the touch of a finger) applied to the corner of the mouth or to the cheek, in which the infant turns his or her head and makes sucking motions.

**root mean square (RMS)** the square root of the sum of the squares of a set of values divided by the number of values. For a set of values  $x_1, x_2, \dots, x_n$ , the root mean square value is

$$\sqrt{[(x_1^2 + x_2^2 + \dots + x_n^2)/n]}$$

and describes the average size of the values in the set. In the physical sciences, the term is used as a synonym for STANDARD DEVIATION under certain circumstances.

**rootogram** *n.* a HISTOGRAM modified to show the response or outcome variable on the horizontal  $x$ -axis and the square root of the response frequencies (or counts) on the vertical  $y$ -axis. Alternatively, the square root of RELATIVE FREQUENCIES, CUMULATIVE FREQUENCIES, or CUMULATIVE RELATIVE FREQUENCIES may be plotted along the  $y$ -axis. See also HANGING ROOTOGRAM.

**rootwork** *n.* a cultural or folk health belief system, common in the southern United States and the Caribbean, that attributes illness to witchcraft, hexing, voodoo, or spells (i.e., "roots"). The individual displays intense fear, symptoms of anxiety, and related somatic complaints and typi-

cally remains in this state until a traditional healer, called a **root doctor**, ostensibly removes the root. Also called **brujeria**; **mal puesto**.

**ROP** abbreviation for RETINOPATHY OF PREMATURITY.

**R→O relationship** see R→S RELATIONSHIP.

**Rorschach Inkblot Test** a PROJECTIVE TECHNIQUE in which the participant is presented with 10 unstructured inkblots (half in black and gray and half including color) and is asked "What might this be?" The examiner classifies the responses according to such structural and thematic (content) factors as color (C), movement (M), detail (D), whole (W), popular or common (P), animal (A), form (F), and human (H). Various scoring systems, either qualitative or quantitative, are used. The object is to interpret the participant's personality structure in terms of factors such as emotionality, cognitive style, creativity, impulse control, and various defensive patterns. Perhaps the best known—and certainly one of the most controversial—assessment instruments in all of psychology, the Rorschach is widely used and has been extensively researched, with results ranging from those that claim strong support for its clinical utility (e.g., for selecting treatment modalities or monitoring patient change or improvement over time) to those that demonstrate little evidence of validity. [developed in the early 1920s by Hermann RORSCHACH]

**Rosenthal effect** the situation in which an investigator's expectations about the outcome of a given study unwittingly affect the actual study outcome. A researcher may use BLINDS to prevent the Rosenthal effect from occurring and biasing study results. This term is often used synonymously with EXPERIMENTER EXPECTANCY EFFECT and SELF-FULFILLING PROPHECY. See also DEMAND CHARACTERISTICS. [Robert **Rosenthal** (1933– ), U.S. psychologist]

**Rostan types** a system of body types based on aspects of the inner structure of the body. See CEREBRAL TYPE; DIGESTIVE TYPE; MUSCULAR TYPE; REPRODUCTIVE TYPE; RESPIRATORY TYPE. [described by Léon Louis **Rostan** (1790–1866), French physician]

**rostral** *adj.* **1.** pertaining to a ROSTRUM. **2.** situated or occurring toward the nose or beak of an organism, or toward the front or anterior portion of an organ. Compare CAUDAL.

—**rostrally** *adv.*

**rostrum** *n.* (*pl.* **rostra**) a beak-shaped or prowlike structure, such as the rostrum of the CORPUS CALLOSUM at its anterior bend where it curves backward under the frontal lobe.

**rotarod** *n.* a horizontally oriented rotating cylinder, about 3 cm in diameter, that is used to measure motor coordination and balance in rodents. A rat or mouse is placed on top of the rotarod, and the time taken for the rodent to fall off is measured.

**rotary pursuit test** any test that requires the participant to follow a revolving or irregularly moving target with a pointer or other indicator.

**rotation** *n.* in statistics, movement around the origin in a multidimensional space. Rotation is commonly used in FACTOR ANALYSIS to enhance interpretability of a factor solution. For example, it may be used to maximize loadings on certain factors while minimizing these loadings on other factors, thereby showing SIMPLE STRUCTURE. See OBLIQUE ROTATION; ORTHOGONAL ROTATION; QUARTIMAX ROTATION; VARIMAX ROTATION. —**rotational** *adj.*

**rotational aftereffect (RAE)** a MOTION AFTEREFFECT produced by fixation of a rotating stimulus. When the motion of the stimulus is stopped, the stimulus appears to move in the opposite direction. See also PLATEAU'S SPIRAL.

**rotational error** a drawing or construction mistake that involves rotating the figure from the position of the copied stimulus.

**rotational nystagmus** see VESTIBULAR NYSTAGMUS.

**rotation sampling** a technique used when conducting surveys in which some proportion of respondents or cases is replaced with new units after specified time periods. Rotation sampling helps to reduce the burden on respondents and allows for better prediction from past samples.

**rotation system** a technique of GROUP THERAPY in which the therapist works with each individual in sequence in the presence of other group members.

**rote learning** memorization by repetition without any ELABORATION or other DEEP PROCESSING of the material. For example, a person may remember a list of errands to perform by mentally repeating it while driving from place to place in the car, or a student may prepare to recite a poem before the class by rehearsing it many times in front of a mirror. Rote learning uses strict memorization without comprehension, which tends to result in poorer retention than occurs with strategies that rely on higher level cognitive mechanisms (e.g., conceptualization, generalization, interpretation); it is factual recall without understanding the reasoning or relationships involved in the material. Also called **rote memory**.

**rote recall** precise recollection of information that has been stored in its entirety (e.g., an address, chemical formula, color pattern, piece of music). See also VERBATIM RECALL.

**rote rehearsal** see MAINTENANCE REHEARSAL.

**Rotter Internal-External Locus of Control Scale** a scale that is used to provide information regarding an individual's feelings about causality of events. Individuals who measure high on internal LOCUS OF CONTROL assume causality is primarily under their control; those who measure high on external locus of control assume causality is primarily outside of their control. Those with high internal measures tend to take more responsibility for and control of their learning, resulting in better performance (e.g., on academic tasks). In contrast, those with high external measures have been shown to take less responsibility, resulting in poorer performance on tasks. [Julian ROTTER]

**rough-and-tumble play (R & T play)** play that involves vigorous contact with others, such as wrestling and mock fighting. R & T play is a form of LOCOMOTOR PLAY and is necessarily social as it involves another person, usually a peer. Observed in animals and children, R & T play tends to be more frequent in males than females.

**roughness** *n.* 1. the tactile quality of an object that is coarse, as in sandpaper. See also TOUCH BLENDS. 2. a subjective quality used as part of a continuum to describe the percepts produced by amplitude-modulated sounds (see MODULATION). Slow, regular amplitude fluctuations that can be perceived as loudness changes are described as BEATS. Higher fluctuation rates, above approximately 15 Hz, are described as **flutter**, whereas those above approximately 40 Hz are described as being **rough**.

**roughness discrimination test** a test of somesthetic sensitivity in which participants are asked to determine by touch which of a choice of surfaces (e.g., grades of sandpaper) has a greater roughness. The ability is sometimes impaired following a lesion in a brain area related to the sense of touch.

**round dance** see BEE COMMUNICATION.

**round window** a membrane-covered opening in the cochlea where it borders the middle ear (see SCALA TYMPANI). Pressure changes in the cochlea produced by vibration of the OVAL WINDOW are ultimately transmitted to the round window. This permits displacement of the BASILAR MEMBRANE and stimulation of the sensory receptors.

**route learning** learning to navigate within a spatial environment by acquiring information about specific directions, distances, and landmarks. **Route knowledge** is represented as a series of directions to get from one place to another (compare SURVEY KNOWLEDGE). Also called **way finding**.

**routes of administration** see ADMINISTRATION.

**routinized behavior** a behavior that has been so well learned and frequently repeated that it no longer takes conscious control to execute (e.g., walking). ELITE ATHLETES, for example, routinize the execution of basic skills so that they have greater capacity to attend to other aspects of their sport. Also called **automatic performance**.

**routinized thoughts** see AUTOMATIC THOUGHTS.

**ROWE** acronym for RESULTS-ONLY WORK ENVIRONMENT.

**Royer's syndrome** see PRADER-WILLI SYNDROME.

**RP** abbreviation for READINESS POTENTIAL.

**$r_{pb}$**  symbol for POINT BISERIAL CORRELATION COEFFICIENT.

**$r_{pbis}$**  symbol for POINT BISERIAL CORRELATION COEFFICIENT.

**RPE** abbreviation for retinal PIGMENT EPITHELIUM.

**RPE scale** see BORG SCALE.

**RR** abbreviation for random ratio. See RANDOM-RATIO SCHEDULE.

**-rrhagia** *suffix* excessive flow or discharge (e.g., MENORRHAGIA).

**-rrhea** *suffix* flow or discharge (e.g., LOGORRHEA).

**r-RST** abbreviation for revised REINFORCEMENT SENSITIVITY THEORY.

**RRT** abbreviation for RANDOMIZED-RESPONSE TECHNIQUE.

**$r_s$**  symbol for SPEARMAN CORRELATION COEFFICIENT.

**RSA** abbreviation for RESPIRATORY SINUS ARRHYTHMIA.

**RSH syndrome** see SMITH-LEMLI-OPITZ SYNDROME.

**RSI** abbreviation for REPETITIVE STRAIN INJURY.

**R-S interval** abbreviation for RESPONSE-SHOCK INTERVAL.

**R→S relationship** the relationship between response and stimulus, as in trials where a given response by an organism produces a particular change in the environment, such as reinforcement or escape from aversive stimuli. This is also called an **R→O relationship**, where *O* stands for *outcome*.

**RSS** abbreviation for REINFORCEMENT SURVEY SCHEDULE.

**RST** abbreviation for REINFORCEMENT SENSITIVITY THEORY.

**r-strategy** *n.* a reproductive strategy that involves a high rate of reproduction (*r* value, or *r*) with low PARENTAL INVESTMENT. It implies that frequently producing a relatively large number of offspring is more likely to lead to REPRODUCTIVE SUCCESS than producing a few offspring that require high levels of parental investment (see K-STRATEGY).

**RSTS** abbreviation for RUBINSTEIN–TAYBI SYNDROME.

**RSVP** abbreviation for RAPID SEQUENTIAL VISUAL PRESENTATION.

**RT** abbreviation for REACTION TIME.

**R-technique factor analysis** a type of FACTOR ANALYSIS performed on a CORRELATION MATRIX: It examines associations between variable measurements in order to understand how the variables themselves group together and are related. Also called **R factor analysis**. Compare P-TECHNIQUE FACTOR ANALYSIS; Q-TECHNIQUE FACTOR ANALYSIS.

***r*<sub>tet</sub>** symbol for TETRACHORIC CORRELATION COEFFICIENT.

**rTMS** abbreviation for repetitive TRANSCRANIAL MAGNETIC STIMULATION.

***r* to *z* transformation** see FISHER'S *R* TO *Z* TRANSFORMATION.

**RTS** abbreviation for RUBINSTEIN–TAYBI SYNDROME.

**rubber** *n.* **1.** slang for a CONDOM. **2.** see FROTTEURISM.

**rubella** *n.* see GERMAN MEASLES.

**Rubin's causal model** a model used to estimate the magnitude of an intervention's effect relative to a comparison condition. Used primarily in economics, medicine, and public health research, the model unrealistically assumes that participants experience multiple conditions simultaneously (e.g., the same participant was in a treatment and control condition at the same time) in order to envision all possible potential outcomes of the intervention. [Donald B. Rubin (1943– ), U.S. statistician]

**Rubin's figure** an ambiguous figure that may be perceived either as one goblet or as two facing profiles. Also called **goblet figure**. [Edgar Rubin (1886–1951), Danish philosopher]

**Rubinstein–Taybi syndrome (RSTS; RTS)** a familial disorder caused by several different genetic factors and marked by facial abnormalities, MICROCEPHALY, HYPERTELORISM, broad thumbs and toes, and intellectual disability. Hypotonia (flaccid muscles) and a stiff gait are common. Also called **Rubinstein syndrome**. [Jack H. Rubinstein (1925–2006) and Hooshang Taybi (1919–2006), U.S. pediatricians]

**rubrospinal tract** a MOTOR PATHWAY that arises from the RED NUCLEUS in the brainstem and descends laterally in the spinal cord, where it stimulates flexor motor neurons and inhibits extensor motor neurons.

**Ruffini's corpuscle** a type of sensory-nerve ending in the subcutaneous tissues of human fingers. Ruffini's corpuscles are believed to mediate sensations of skin stretch, motion detection, and hand and finger position. Also called **Ruffini's ending**. [Angelo Ruffini (1864–1929), Italian anatomist]

**rule** *n.* **1.** a guideline or standard that is used to guide responses or behavior or that communicates situational NORMS. **2.** in linguistics, a formal mechanism used to ac-

count for the patterns of relationship between grammatical elements in a language. Formal linguistics draws distinctions between rules that are obligatory, optional, categorical, and variable.

**rule-based system** a computer program in which human knowledge is stored and used as a sequence of if-then relationships. See EXPERT SYSTEM; PRODUCTION SYSTEM.

**rule-governed behavior** any behavior that is influenced by verbal antecedents, such as following instructions (as when children clean their rooms because they are told to do so) or reacting to one's own private thinking (as when an adult begins an exercise program after thinking "I need to lose weight"). The term does not refer to behavior that can be described by a rule. For example, rats' behavior that adopts a WIN–STAY, LOSE–SHIFT STRATEGY cannot be described as rule governed. Also called **verbally governed behavior**. Compare CONTINGENCY-GOVERNED BEHAVIOR.

**rule learning** in psychology experiments, the process in which a participant gradually acquires knowledge about a fixed but unstated standard that defines, for example, the acceptability of a response or membership in a category.

**rule of abstinence** in classical psychoanalysis, the rule that the patient should abstain from all gratifications that might distract from the analytic process or drain off instinctual energy, anxiety, and frustration that could be used as a driving force in the therapy. Examples of such gratifications are smoking, engaging in idle conversation, or ACTING OUT during the sessions, as well as unlimited sexual activity, absorbing interests, and other pleasures pursued outside the sessions. This rule is no longer followed. Also called **abstinence rule**.

**rule of double effect** see PRINCIPLE OF DOUBLE EFFECT.

**rule of thumb** a generally useful but by no means infallible strategy for approaching a problem or decision. See HEURISTIC.

**rules of inference** rules for the construction of logical arguments stating what kinds of conclusions are valid from what kinds of premises. See DEDUCTION; DEDUCTIVE REASONING.

**rumination** *n.* **1.** obsessional thinking involving excessive, repetitive thoughts or themes that interfere with other forms of mental activity. It is a common feature of OBSSIVE-COMPULSIVE DISORDER and GENERALIZED ANXIETY DISORDER. **2.** the voluntary regurgitation in the absence of gastrointestinal distress (e.g., nausea, acid reflux) of food from the stomach to the mouth, where it is masticated and tasted a second time or ejected. It generally occurs during infancy (age 3–12 months); however, it may also be observed in individuals of any age, particularly those with severe intellectual disability. If it lasts for a period of at least 1 month following a period of normal feeding, it is diagnosed as **rumination disorder**; individuals may develop potentially fatal weight loss and malnutrition. Also called **mercyism**. —**ruminate** *vb.*

**rumor** *n.* a story or piece of information of unknown reliability that is passed from person to person. See also GOS-SIP.

**rumor intensity formula** a model that attempts to explain why some rumors persist and intensify whereas others peter out. In short, the strength of a rumor is the arithmetical product of the significance of the subject matter and the level of uncertainty about available informa-

tion. [proposed by Gordon W. ALLPORT and Russian-born U.S. experimental psychologist Leo Postman (1918–2004)]

**run** *n.* **1.** a single presentation of a series of stimuli or tasks as part of an experiment. **2.** the distance along the *x*-axis between two points. Compare RISE.

**runaway selection** a theory of female mate selection proposing that certain male traits with little or no survival advantage are nonetheless so sexually attractive to females that they choose mates with these traits and thereby ensure male offspring with the same attractive traits. The theory attempts to explain the rapid (runaway) evolution of disadvantageous male traits in some species (e.g., the long, colorful, but cumbersome tails of peacocks). Compare GOOD GENES HYPOTHESIS. [proposed by Ronald Aylmer FISHER]

**run-in period** in an experiment or SIMULATION, an initial period of time that is included to allow the phenomenon of interest to stabilize before any treatment or manipulation is administered. A run-in period helps a researcher identify problems with the protocol or treatment.

**runner's high** a euphoric sensation achieved while running, characterized by an elevated sense of awareness, a suppression of pain and discomfort, and ease of effort. See also ENDORPHIN.

**running wheel** see ACTIVITY WHEEL.

**runs test** see WALD–WOLFOWITZ TEST.

**runway** *n.* in animal experimentation, the pathway that

leads from a starting box to a goal box or to the main part of a maze.

**rural environment** an environment characterized by open land, sparse settlement, some distance from cities and towns, and an economy that is usually agriculturally based but that may be based on other types of economic activity, such as logging, mining, oil and gas exploration, or tourism. In environmental psychology, the rural environment is often used as a basis for comparison with the urban (city) environment with respect to air-pollution levels, crowding, crime, and other physical and social stressors. See also URBAN BEHAVIOR.

**rural health clinic (RHC)** a clinic, physician practice, or health department that—in compliance with the Rural Health Clinic Services Act—is located in a medically underserved area and uses a physician, PHYSICIAN ASSISTANT, NURSE PRACTITIONER, or some combination of these to deliver primary outpatient health care. See also NATIONAL ASSOCIATION OF RURAL HEALTH CLINICS.

**rush** *n.* a colloquial term for the effect of an intravenous injection of amphetamine, cocaine, or methamphetamine. The sensation has been described as a dramatic awakening accompanied by sudden euphoria.

**RVS** abbreviation for ROKEACH VALUE SURVEY.

**RWA** abbreviation for RIGHT-WING AUTHORITARIANISM.

**RxP** abbreviation for PRESCRIPTIVE AUTHORITY.

**Ryan's method** see REGWQ TEST.

# Ss

**s** symbol for SPECIFIC FACTOR.

**s<sup>2</sup>** symbol for SAMPLE VARIANCE.

**S** abbreviation for spatial intelligence. See PRIMARY ABILITY.

**S1** abbreviation for PRIMARY SOMATOSENSORY AREA.

**S2** abbreviation for SECONDARY SOMATOSENSORY AREA.

**S-** symbol for NEGATIVE DISCRIMINATIVE STIMULUS.

**S+** symbol for POSITIVE DISCRIMINATIVE STIMULUS.

**SA** symbol for NEGATIVE DISCRIMINATIVE STIMULUS.

**SA** abbreviation for SOCIAL AGE.

**SAB** abbreviation for STANDARD APPLICATION BLANK.

**saccade** *n.* a rapid eye movement that allows visual fixation to jump from one location to another in the visual field. Once initiated, a saccade cannot change course. See also MICROSACCADES. Compare SMOOTH-PURSUIT EYE MOVEMENT. —**saccadic** *adj.*

**saccadic dysmetria** see OCULAR DYSMETRIA.

**saccadic speed** the speed of the rapid, ballistic eye movement known as a SACCADE. Human saccades reach speeds of 700° of VISUAL ANGLE per second.

**saccadic time** the duration of a SACCADE. Saccades last 15 ms to 100 ms, and approximately 150 ms must elapse before the next saccade can be initiated.

**saccul** *n.* the smaller of the two VESTIBULAR SACS of the inner ear, the other being the UTRICLE. Like the utricle, it contains a sensory structure called a MACULA. Movements of the head relative to gravity exert a momentum pressure on hair cells within the macula, which then fire impulses indicating a change in body position. —**saccular** *adj.*

**sacral division** the nerves of the PARASYMPATHETIC NERVOUS SYSTEM that arise from the spinal cord in the sacral (lower back) region. Compare CRANIAL DIVISION.

**sacral nerve** see SPINAL NERVE.

**sacred disease** a name for epilepsy used by the ancient Greeks based on the belief that seizures were evidence of divine visitation. Hippocrates, however, rejected this view, saying "Surely it, too, has its nature and causes whence it originates, just like other diseases, and is curable by means comparable to their cure."

**SAD** acronym for SEASONAL AFFECTIVE DISORDER.

**S-adenosylmethionine (SAM)** *n.* a nonprotein chemical compound that mediates numerous metabolic reactions, including those involving certain proteins, phospholipids, neurotransmitters, and nucleic acids. It is commonly used as a dietary supplement in the treatment of depression because it may increase levels of serotonin in the brain. It also has been implicated in Alzheimer's disease: Low S-adenosylmethionine levels often are observed in those with the disease, which may be a sign of altered SAM metabolism.

**sadism** *n.* the derivation of pleasure through cruelty and

inflicting pain, humiliation, and other forms of suffering on individuals. The term generally denotes SEXUAL SADISM. In the classical psychoanalytic theory of Sigmund FREUD, sadism is attributed to the working of the DEATH INSTINCT and is manifested in innate aggressive tendencies expressed from the earliest stages of development. For example, during the ORAL-BITING PHASE, the infant expresses sadism by taking pleasure in biting. See also ANAL SADISM; ORAL SADISM. [Donatien Alphonse François, Comte (Marquis) de Sade (1740–1814), French soldier and writer] —**sadist** *n.* —**sadistic** *adj.*

**sadness** *n.* an emotional state of unhappiness, ranging in intensity from mild to extreme and usually aroused by the loss of something that is highly valued (e.g., by the rupture of a relationship). Persistent sadness is one of the two defining symptoms of a MAJOR DEPRESSIVE EPISODE, the other being ANHEDONIA. —**sad** *adj.*

**sadomasochism** *n.* **1.** sexual activity between consenting partners in which one partner enjoys inflicting pain (see SEXUAL SADISM) and the other enjoys experiencing pain (see SEXUAL MASOCHISM). **2.** a PARAPHILIA in which a person is both sadistic and masochistic, deriving sexual arousal from both giving and receiving pain. —**sadomasochist** *n.* —**sadomasochistic** *adj.*

**sadomasochistic personality** formerly, in psychoanalysis, the characterization of people who enjoy both exhibiting and being the recipient of aggressive behavior.

**SADS** abbreviation for SCHEDULE FOR AFFECTIVE DISORDERS AND SCHIZOPHRENIA.

**Saethre–Chotzen syndrome** see CHOTZEN'S SYNDROME.

**safe compartment** in a two-compartment CONDITIONING APPARATUS, the compartment that is not associated with an AVERSIVE STIMULUS.

**safe sex** sexual activity in which the exchange of bodily fluids is inhibited as much as possible to help reduce the risk of unwanted pregnancy or of contracting sexually transmitted diseases. Precautions may include avoidance of high-risk sexual behaviors, careful selection of one's partners, and the use of preventive barriers (e.g., condoms, dental dams). The practice is also called **safer sex** in recognition that 100% safety is not possible with, for example, condoms.

**safety and health education** instruction regarding health-related matters, including the causes and prevention of malnutrition, alcoholism, drug addiction, and sexually transmitted diseases, as well as safety on the roads, in the workshop, at home, and on the playing field. See also ACCIDENT PREVENTION.

**safety behavior** a behavior performed by an anxious individual in an attempt to minimize or prevent a feared catastrophe. For example, a person with PANIC DISORDER might only go out when accompanied, and a person with SOCIAL PHOBIA might wear sunglasses indoors to avoid eye contact. Safety behaviors may also include internal mental processes: A person with social phobia might memorize

what he or she plans to say at a social gathering. Safety behavior contributes to the maintenance of anxiety disorders when people believe that the behavior, rather than the lack of actual danger, is what prevents the feared catastrophe. Also called **safety cues**; **safety-seeking behavior**; **safety signals**. [first defined in 1991 by British psychologist Paul M. Salkovskis]

**safety device** in the therapeutic approach of Karen D. HORNEY, any psychic means used by an individual to protect himself or herself from threats, particularly the hostile elements of the environment. As such, the concept is similar to the classical psychoanalytic concept of the DEFENSE MECHANISM. See also BASIC ANXIETY.

**safety engineering** a discipline in which multiple approaches are applied to the design and evaluation of work systems and processes with the aim of eliminating or reducing hazards. See also HAZARD CONTROL.

**safety need** a desire for freedom from illness or danger and for a secure, familiar, and predictable environment. Safety needs comprise the second level of MASLOW'S MOTIVATIONAL HIERARCHY, after basic PHYSIOLOGICAL NEEDS.

**safety psychology** a subdiscipline of applied psychology involving the study of behavioral aspects of hazardous situations in human–environment systems, particularly within occupational contexts. Safe and unsafe behavior of employees is studied systematically to derive guidelines that can be translated into practical actions to ensure safety.

**safety signal** a stimulus that indicates to an organism that an aversive event will not occur.

**sagittal** *adj.* describing or relating to a plane that divides the body or an organ into left and right portions. A **midsagittal** (or **medial sagittal**) **plane** divides the body centrally into halves, whereas a **parasagittal plane** lies parallel but to one side of the center. —**sagittally** *adv.*

**sagittal fissure** see LONGITUDINAL FISSURE.

**Saint Dymphna's disease** an early name for mental illness, deriving from the name of the patron saint of those with nervous disorders or mental illness. According to legend, Dymphna, a medieval Irish princess, fled to Belgium to escape the incestuous advances of her mad father, who later put her to death near Gheel. See GHEEL COLONY.

**Saint Vitus's dance** an archaic name for Sydenham's CHOREA.

**salary compression** see WAGE COMPRESSION.

**salicylate** *n.* any of a group of drugs that are based on **salicin**, a compound obtained from the bark of willow trees (*Salix*), and that include salicylic acid and its derivatives. The latter are used as analgesics, antipyretics, and anti-inflammatory agents. They act on both the peripheral and central nervous systems, particularly the thalamus, but also mimic some aspects of the adrenal hormones. The best known member is ASPIRIN (acetylsalicylic acid), introduced in 1899. Other salicylates include **salicylamide** and compounds used in topical formulations for the relief of muscle and joint pain.

**salicylism** *n.* poisoning with salicylates, the most common form of which is due to overdosage of ASPIRIN. Symptoms of mild salicylism include tinnitus, confusion, headache, nausea, and vomiting. More severe forms of salicylism are characterized by severe acidosis, hemorrhage,

and changes in mental status that may lead to convulsions, coma, and death.

**salience hypothesis** a theory of perception according to which motivationally significant stimuli (objects, people, meanings, etc.) are perceived more readily than are stimuli with little motivational importance. It has relevance in social perception, advertising, and linguistics.

**salient** *adj.* distinctive or prominent. A salient stimulus in a multielement array will tend to be easily detected and identified. The noun form, **salience** (or **saliency**), denotes a parameter of a stimulus that indexes its effectiveness. See CONSPICUITY; POP-OUT; STIMULUS SALIENCE.

**saline** *adj.* consisting of salt or having a salty taste.

**saliromania** *n.* sexual interest and arousal associated with objects that are filthy, disgusting, or deformed.

**salivary gland** any of several glands located in the wall of the mouth that secrete a fluid (saliva) containing the enzyme gamma-amylase (ptyalin). The major salivary glands are the paired parotid, submaxillary, and sublingual glands; smaller glands are scattered over the cheeks and tongue. See also SALIVATION.

**salivary reflex** a change in the secretion of the salivary glands caused by unconditioned or conditioned stimulation of their effector nerves. See CONDITIONED RESPONSE; UNCONDITIONED RESPONSE.

**salivation** *n.* the secretion of saliva by the SALIVARY GLANDS, typically as a reflex response to stimuli associated with food.

**Salpêtrière** *n.* an institution founded in Paris in 1656 as an asylum for the infirm, aged, and insane. At one time, it contained nearly 10,000 people, and treatment was proverbially brutal. The Salpêtrière was transformed during the regime of Philippe Pinel (1745–1826), who became its director in 1794 and introduced many pioneering reforms in the treatment of people with mental illnesses. From the 1860s, the hospital became the center for the psychopathological investigations of Jean-Martin CHARCOT, which involved the use of hypnosis; in 1885, one of Charcot's students was the young Sigmund FREUD.

**salpingectomy** *n.* the surgical removal of one or both fallopian tubes. A salpingectomy may be performed as a STERILIZATION measure or because of an infection or malignant growth in the reproductive tract. Also called **tubectomy**. See also TUBAL LIGATION.

**saltation** *n.* **1.** a dancing or leaping motion, specifically one seen as a result of CHOREA. **2.** the mode of conduction of nerve impulses along myelinated nerve fibers. See SALTATORY CONDUCTION. **3.** the phenomenon in which a sensation is felt at a site other than that where it was evoked. For example, auditory saltation is an illusion in which a train of clicks, the first half of which is presented at one location and the other half of which is presented at a second location, is perceived as originating not only from the anchor points but also from locations between them. **4.** a sudden evolutionary variation or modification of a species due to large-scale genetic mutation. **5.** an abrupt transition or sudden development in the course of an illness. [from Latin *saltatio*, “dance”]

**saltatory conduction** a type of conduction of nerve impulses that occurs in MYELINATED FIBERS, in which the impulses skip from one NODE OF RANVIER to the next. This



permits much faster conduction velocities compared with those of unmyelinated fibers.

**salty** *adj.* denoting the TASTE elicited by sodium chloride or lithium chloride, by other sodium and lithium salts, and by the amino acid arginine. Sodium is the primary ion for generating osmotic forces in an organism and is an essential carrier of electrical potentials; it cannot be produced in the body and therefore must be ingested. —**saltiness** *n.*

**Salvia** *n.* a genus of plants in the mint family. The species *Salvia miltiorrhiza* is RED SAGE. The species *Salvia divinorum* is a kappa OPIOID AGONIST hallucinogen used as a recreational drug known as **diviner's sage** or by its genus name, *Salvia*. Users chew, smoke, or place it under the tongue and may experience visions, uncontrollable laughter, loss of speech and coordination, anxiety, and nausea, although these effects are short-lived. It is illegal in many U.S. states.

**SAM** **1.** abbreviation for S-ADENOSYLMETHIONINE. **2.** abbreviation for SEARCH OF ASSOCIATIVE MEMORY. **3.** abbreviation for SYMPATHETIC-ADRENAL-MEDULLARY AXIS.

**same-sex marriage** a long-term, intimate, stable, and in some jurisdictions legally recognized relationship between two people of the same sex. It is less frequently called **homosexual marriage**. Also called **gay marriage**. See also DOMESTIC PARTNERSHIP.

**SAMHSA** abbreviation for SUBSTANCE ABUSE AND MENTAL HEALTH SERVICES ADMINISTRATION.

**sample** *n.* a subset of a POPULATION of interest that is selected for study with the aim of making inferences to the population. It is important to ensure that a sample is representative of the larger population. Characteristics that describe observations in this subset, such as the mean, median, or STANDARD DEVIATION, are called STATISTICS.

**sample correlation coefficient** (symbol:  $r$ ) an index of the degree of association between two variables based on the data in a studied subset (sample) of cases from a larger group of interest. It is a variant of the PRODUCT-MOMENT CORRELATION COEFFICIENT, and the same symbol is used for both statistics. See also POPULATION CORRELATION COEFFICIENT.

**sample distribution** the distribution of scores in a particular subset (sample) drawn from a larger population. Of interest is the general shape of the distribution, reflecting the frequency of particular scores (its KURTOSIS, SKEWNESS, etc.). Compared to the theoretical POPULATION DISTRIBUTION, the distribution of scores in a sample is often jagged and not smooth.

**sample mean** (symbol:  $\bar{X}$ ,  $M$ ) the arithmetic average (MEAN) of a set of scores from cases or observations in a subset drawn from a larger population. Because each score contributes equally to this index of CENTRAL TENDENCY, it can be affected greatly by OUTLIERS. Many widely used STATISTICAL TESTS are based on the comparison of sample means.

**sample reliability** the degree to which a subset of items (sample) is representative of the POPULATION from which it is drawn. It is typically indexed by the STANDARD ERROR OF THE MEAN.

**sample size** the number of observations (cases, individuals, units) included in a selection of items to be studied. This is usually denoted  $N$  (for the study as a whole) or  $n$  (for subgroups from the study).

**sample space** the collection of all possible outcomes of

an experiment of chance. For example, for a toss of a single coin, the sample space is heads and tails, whereas for a toss of two coins, the sample space is heads-heads, heads-tails, tails-tails, and tails-heads.

**sample standard deviation** (symbol:  $s$ ) see STANDARD DEVIATION.

**sample variance** (symbol:  $s^2$ ) the dispersion of scores within a group selected for study, as opposed to the POPULATION VARIANCE. It is calculated by determining each score's difference from the average for the set, squaring and summing these differences, and then dividing by the total number of scores minus one.

**sampling** *n.* the process of selecting for study a limited number of units from a larger set. The term most often refers to the selection of respondents, observations, or cases for inclusion in experiments, surveys, interviews, or other research. However, sampling can also involve selecting theoretical constructs to study, selecting measurement instruments from a broad set of potential options, or selecting time points at which to observe individuals or cases. There are various different selection methods, including SIMPLE RANDOM SAMPLING, STRATIFIED SAMPLING, CONVENIENCE SAMPLING, and QUOTA SAMPLING. Each approach has a different potential of obtaining a sample appropriately representative of the POPULATION under study.

**sampling bias** a systematic and directional error involved in the choice of units, cases, or participants from a larger group for study. Sampling bias can threaten the INTERNAL VALIDITY of a study if there is a possibility that pre-existing differences arising from the sampling process may interact with the variable of interest. Similarly, if the procedure used to choose participants tends to favor specially motivated individuals or people from a certain segment of society, there would be a threat to the study's EXTERNAL VALIDITY (i.e., inferences to a larger population would not be viable). Sampling bias is associated with a lack of RANDOM SAMPLING and with nonrandom assignment to conditions. Also called **recruitment bias**; **selection bias**. See also SELF-SELECTION BIAS.

**sampling design** the specific approach, method, or strategy that a researcher decides to use for selecting a sample from the larger population. Formulating a design involves determining the nature of the target population, a suitable SAMPLING FRAME for drawing the cases, the desired sample size, whether random or nonrandom selection will be used, and whether there are any important variables on which to stratify selection. Also called **sampling plan**.

**sampling distribution** the distribution of a statistic, such as the mean, obtained with repeated samples drawn from a population. SIMULATION studies allow researchers to specify known population information, conduct a very large number of repeated draws on the population, and build an empirical distribution of the statistic based on these draws (e.g.,  $t$ ,  $F$ , or  $\chi^2$  distributions). For example, the means calculated from samples of 100 observations, repeatedly and randomly drawn from the population, yield a sampling distribution for the mean. Knowledge about the distribution of a statistic allows researchers to say when a finding from a sample is unusual (e.g., statistically significant) and when it would be expected from the statistic's known behavior, thus enabling the sampling distribution of a statistic to be used in testing hypotheses about variables and their relationships. See also INFERENTIAL TEST.

**sampling error** the predictable MARGIN OF ERROR that

occurs in studies of samples of cases or observations from a larger POPULATION: It indicates the possible variance between the true value of a parameter in the population and the estimate of that value made from the sample data. For example, a sampling error of 3% in a large national survey finding that 65% of citizens prefer a particular policy means that the true figure could be anywhere between 62% and 68%.

**sampling frame** the specific source used in drawing a subset of cases or individuals from a larger POPULATION. In many cases, the sampling frame will be a complete list of all of the elements in a population (e.g., the electoral register). In other cases, this will be impossible or the issue may be less straightforward than it appears. The key point is that any sampling frame should be representative of the target population as a whole. In a study of college students' aspirations for life after graduation, for example, the researchers might decide to use a listing of students obtained from the institution's office of evaluation and assessment as their sampling frame and randomly select from this list every fifth student.

**sampling theory** the body of principles underlying the drawing of SAMPLES that accurately represent the population from which they are taken and to which inferences will be made. This conceptualization of the sampling process provides guidance to researchers about which SAMPLING DESIGN to choose in the particular circumstances and how best to account for subsets of cases that are not well represented (or are overrepresented) in the population (e.g., by using WEIGHTS).

**sampling unit** any of the elements selected from a population to make up a sample. For instance, if classrooms are selected at random from the population, then the classroom—not the individual student—is the sampling unit. See UNIT OF ANALYSIS.

**sampling variability** the extent to which the value of a statistic differs across a series of samples, such that there is some degree of uncertainty involved in making inferences to the larger POPULATION. See SAMPLING ERROR.

**sampling without replacement** a SAMPLING technique that involves selecting an item from the larger set and removing it from the general pool; thus, this particular case cannot be redrawn.

**sampling with replacement** a SAMPLING technique in which each item selected from the larger set is returned to the general pool. This means that a particular case may be drawn more than once for a given sample.

**samsara** *n.* see METEMPSYCHOSIS.

**sanatorium** *n.* formerly, an institution for the treatment and convalescence of individuals with chronic diseases, such as rheumatism, tuberculosis, neurological disorders, or mental disorders. Also called **sanitarium**.

**sanction** *n.* **1.** authoritative approval or permission for an action. **2.** a punishment or other coercive measure, usually administered by a recognized authority, that is used to penalize and deter inappropriate or unauthorized actions. See also SOCIAL SANCTION.

**Sandimmune** *n.* a trade name for CYCLOSPORINE.

**S and M** abbreviation for sadism and masochism. See SADOMASOCHISM.

**sandwich generation** midlife adults who simultane-

ously care for dependent children and ailing parents or other older relatives. Being a multigenerational caregiver has been shown to negatively affect health and behavior by decreasing one's level of exercise, increasing one's frequency of cigarette smoking, and increasing one's risk of depression. See also CAREGIVER BURDEN.

**Sanfilippo syndrome** an autosomal recessive, lysosomal storage disease caused by an inability of the body to break down heparan sulphate, a complex carbohydrate (see MUCOPOLYSACCHARIDOSIS). Affected individuals can have severe neurological symptoms, including progressive dementia, aggressive behavior, hyperactivity, seizures, deafness, loss of vision, and an inability to sleep for more than a few hours at a time. Sanfilippo syndrome is divided into four subtypes: A, B, C, and D. The different types have similar signs and symptoms, but Type A is the most severe. Also called **mucopolysaccharidosis Type III: Sanfilippo (A, B, C, D)**. [described in 1963 by Sylvester Sanfilippo (1926–2013), U.S. pediatrician]

**sangue dormido** a CULTURE-BOUND SYNDROME found among inhabitants (indigenous and immigrant) of Cape Verde. Symptoms include pain, numbness, tremor, paralysis, convulsions, stroke, blindness, heart attack, infection, and miscarriage. [Portuguese, literally: "sleeping blood"]

**sanguine type** one of the four temperamental types established by GALEN, who believed that the ruddy complexion and cheerful outlook displayed by such individuals was due to the predominance of blood over other body fluids. See HUMORAL THEORY.

**sanitarium** *n.* see SANATORIUM.

**sanity** *n.* **1.** in law, the state of not suffering from a mental disorder or neurological defect that impairs one's ability to understand or appreciate one's acts or to conform to the requirements of the law. Thus, it is the opposite of INSANITY. **2.** more generally, soundness of mind or judgment. —**sane** *adj.*

**Sansert** *n.* a trade name for METHYSERGIDE.

**Saphris** *n.* a trade name for ASENAPINE.

**sapid stimulus** see GUSTATORY STIMULUS.

**Sapir-Whorf hypothesis** see LINGUISTIC DETERMINISM. [Edward Sapir (1884–1939) and Benjamin Lee Whorf (1897–1941), U.S. linguists]

**Sapphism** *n.* see LESBIANISM.

**Sarafem** *n.* a trade name for FLUOXETINE.

**sarcoma** *n.* see CANCER.

**SAR workshop** abbreviation for SEXUAL ATTITUDE REASSESSMENT WORKSHOP.

**SAS** abbreviation for SUPERVISORY ATTENTIONAL SYSTEM.

**SAT** acronym for SCHOLASTIC ASSESSMENT TEST.

**Satanism** *n.* a religion based on the worship of Satan, the supreme personification of evil in Christian tradition, whether as a deity or a concept. Satanist cults vary from neopagan groups that revere Satan as a benevolent force of energy in nature to those that pay some kind of allegiance to Satan as an evil principle. In the latter case, worship takes the form of magical rituals that may involve an element of deliberate transgression (e.g., by parodies of Christian ceremonies or taboo sexual practices). **Satanic ritual abuse (SRA)** is the alleged psychological, sexual, or physical abuse of humans or animals committed as part of a reli-

gious ritual involving worship of Satan. See RITUAL ABUSE. See also DEMONOLOGY. —**Satanic** *adj.* —**Satanist** *n.*

**satellite clinic** a freestanding outpatient facility that is physically separate from but administratively attached to a parent medical facility. Staff interaction and delivery of services occur between the clinic and parent facility.

**satellite male** in animal behavior, a male peripheral to a territorial male or present in a group of displaying males that does not call or display. A satellite male will rapidly replace a territorial male that disappears and will often intercept females attracted to nearby displaying males to engage in SNEAK MATING.

**satiation** *n.* **1.** the satisfaction of a desire or need, such as hunger or thirst; another name for SATIETY. **2.** the temporary loss of effectiveness of a REINFORCER due to its repeated presentation. —**satiare** *vb.*

**satiety** *n.* the state of being fully satisfied to or beyond capacity, as, for instance, when hunger or thirst have been fully assuaged, which inhibits any desire to eat or drink more. Ingested food, for example, provides two signals of inhibition, one reflecting the bulk of a consumed meal and associated with gastric distension and the other reflecting the chemical content of the meal and associated with numerous peptides, hormones, and CYTOKINES in the intestines and liver (notably including CHOLECYSTOKININ, GHRELIN, and LEPTIN). Satiety signals from the gastrointestinal tract travel via different branches of the VAGUS NERVE to act through the ARCUATE NUCLEUS of the hypothalamus and the SOLITARY NUCLEUS of the brainstem, where neuronal networks mediating food intake and eating behavior are activated.

**satiety center** see VENTROMEDIAL NUCLEUS.

**satiety mechanism** any of the bodily processes or systems involved in regulating food and fluid intake. See also APPETITIVE BEHAVIOR.

**satisfaction of instincts** in classical psychoanalytic theory, the gratification of basic needs, such as hunger, thirst, sex, and aggression, which discharges tension, eliminates UNPLEASURE, and restores the organism to a balanced state. Satisfaction may occur on a conscious, preconscious, or unconscious level. Also called **gratification of instincts**. See also LIBIDO.

**Satisfaction With Life Scale (SWLS)** a five-item self-report measure developed to assess subjective well-being. It consists of global statements (e.g., “In most ways my life is close to my ideal”) rated on a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The range of possible scores is 5 to 35, with higher scores signifying greater life satisfaction. [developed in 1985 by U.S. psychologist Edward F. Diener (1946– ) and colleagues]

**satisfice** *vb.* to choose an option that meets the requirements of a particular situation but that may not be the optimal choice when considered in the abstract. In economics, the hypothesis of **satisficing behavior** proposes that, given the constraints of BOUNDED RATIONALITY, economic agents seek a level of profit or utility that they find satisfactory rather than one that is optimal. [coined by Herbert A. SIMON as a blend of *satisfy* and *suffice*]

**satisficer** *n.* a type of consumer who is happy with a good-enough choice. For example, a satisficer on a shopping trip in a grocery store is likely to buy the first box of reasonably priced cereal he or she sees. Compare MAXI-

MIZER. [defined in 2002 by U.S. psychologist Barry Schwartz (1946– )]

**satori** *n.* in ZEN BUDDHISM, the state or moment of spiritual awakening (Japanese, “awakening”) or enlightenment in which reality is perceived.

**saturated model** a model that fits the data perfectly because it has as many estimated parameters as there are values to be fitted. In STRUCTURAL EQUATION MODELING, this type of model poses a problem because a researcher cannot evaluate fit. Relatedly, the **unsaturated model** has more parameters than can be estimated from the available data. In FACTOR ANALYSIS, the problem of saturation occurs when the number of factors that will be estimated is the same as the number of variables in the data set.

**saturation** *n.* the purity of a color and the degree to which it departs from white. Colors with high saturation are intense and brilliant (e.g., fuchsia), whereas colors of low saturation are diluted and dull (e.g., pastel pink).

**saturation scale** an index of the purity of a color, ranging from gray to the pure color. It is used in psychophysics to relate the perceived purity of a color to the percentage of light of a given wavelength that is present.

**satyriasis** *n.* excessive or insatiable desire in a male for sexual gratification. Sexual activity with one person is found to be inadequate, and many other sexual partners are sought. See also DON JUAN.

**sauce béarnaise effect** a colloquial term referring to a CONDITIONED TASTE AVERSION. If a person happens to become ill after tasting a new food, such as sauce béarnaise, he or she may subsequently dislike and avoid that food. Regardless of the actual cause of the illness, the sauce will be identified with it. See also PREPAREDNESS.

**savant** *n.* a person with an intellectual disability or an AUTISM SPECTRUM DISORDER (**autistic savant**) who demonstrates exceptional, usually isolated, cognitive abilities, such as rapid calculation, identifying the day of the week for any given date, or musical talent. The term **idiot savant** initially was used to denote such a person but has been discarded as pejorative.

**savings method** a way of measuring quantitatively, without relying on an individual’s conscious memory, how much learned material is retained. In an initial learning session, the number of trials or the amount of time until the individual can achieve a goal, such as one perfect recitation of a list of nonsense syllables, is recorded. At a later time, he or she is retaught the same material. The difference in number of trials or time taken to achieve the goal is compared between the first and second sessions; this is the savings value (or **savings score**). Even if the individual has no conscious recollection of the original learning experience (e.g., because of a large time delay between the two sessions), the measurement can still be obtained. Also called **relearning method**. [introduced by Hermann EBBINGHAUS]

**sawtooth waves** a series of pointed electrical waveforms recorded on an electroencephalogram just before the onset of rapid eye movements in phasic REM SLEEP. Sawtooth waves occur in bursts, with a frequency range of 1.5 Hz to 5 Hz, and last an average of 7 seconds.

**saxitoxin (STX)** *n.* an animal toxin that blocks the passage of sodium ions across a cell’s plasma membrane when applied to the outer surface of the cell.

**SB** abbreviation for STANFORD–BINET INTELLIGENCE SCALE.

**SBS** abbreviation for SHAKEN BABY SYNDROME.

**scaffolding** *n.* in education, a teaching style that supports and facilitates the student as he or she learns a new skill or concept, with the ultimate goal of the student becoming self-reliant. Derived from Lev VYGOTSKY's theories, in practice it involves teaching material just beyond the level at which the student could learn alone. Technologies (e.g., computer software) that may be used to assist in this process are known as **scaffolded tools**.

**scalability** *n.* the usefulness of an item on a test or scale in eliciting responses that represent identifiable positions on an ordered progression of scores or values describing an underlying construct, such as an ability or attitude. See GUTTMAN SCALE.

**scala media** one of the three canals that run the length of the COCHLEA in the inner ear. Located between the scala vestibuli and scala tympani, it is filled with fluid (ENDOLYMPH) and is delimited by REISSNER'S MEMBRANE, the highly vascular **stria vascularis**, and the BASILAR MEMBRANE, which supports the ORGAN OF CORTI. Also called **cochlear duct**.

**scalar** **1.** *n.* a quantity having only magnitude and not direction. Compare VECTOR. **2.** *n.* in MATRIX ALGEBRA, a quantity that can multiply a vector in a vector space to produce another vector. **3.** *adj.* describing a variable that can be represented by positions on a scale. **4.** *adj.* describing a matrix in which the entries along the MAIN DIAGONAL are equal and all other entries are zero.

**scala tympani** one of the three canals within the COCHLEA in the inner ear. It is located below the scala media, from which it is separated by the BASILAR MEMBRANE, and contains PERILYMPH. At its basal end is the ROUND WINDOW.

**scala vestibuli** one of the three canals within the COCHLEA in the inner ear. It is located above the scala media, from which it is separated by REISSNER'S MEMBRANE, and contains PERILYMPH. At its basal end is the OVAL WINDOW.

**scale** *n.* **1.** a system for ordering test responses in a progressive series, so as to measure a trait, ability, attitude, or the like. For example, an agreement scale used on an attitude survey might have seven response options ranging from *strongly disagree* (1) to *strongly agree* (7), with *neither disagree nor agree* (4) as the middle point. See LIKERT SCALE; RATING SCALE. **2.** a sequence of ordered values used as a reference in measuring a physical property (e.g., weight, temperature). See INTERVAL SCALE; RATIO SCALE. See also MEASUREMENT LEVEL. **3.** more generally, any test or other assessment instrument as a whole.

**scale attenuation** the situation in which the response format on a measure includes too few options to reflect a respondent's actual behavior, opinion, or belief. For example, if an item pertains to average time spent watching television each day and a scale ranging from *none* (1) to *1 hour or more* (5) is used, the upper end of the scale is likely to be selected by the great majority of sampled respondents, some of whom watch many hours per day; this results in little ability to differentiate the sample in terms of how many hours are actually watched. See CEILING EFFECT; FLOOR EFFECT.

**scale development** the process of creating a new INSTRUMENT for measuring an unobserved or latent construct, such as depression, sociability, or fourth-grade mathematics ability. The process includes defining the con-

struct and test specifications, generating items and RESPONSE SCALES, piloting the items in a large sample, conducting analyses to fine-tune the measure, and then re-administering the refined measure to develop NORMS (if applicable) and to assess aspects of RELIABILITY and VALIDITY.

**scale error** a child's attempt to perform an action on a miniature object that is impossible because of the size discrepancy between the child and the object (e.g., the child tries to get into a toy car).

**Scale of Prodromal Symptoms (SOPS)** an instrument used to identify and assess the PRODROMAL SYNDROME of schizophrenia and other psychotic disorders. It includes behaviorally defined diagnostic criteria and provides a 6-point scale to quantitatively rate the severity of five ATTENUATED POSITIVE SYMPTOMS, four disorganization symptoms, and four general symptoms. [developed in 2001 by U.S. psychiatrist Thomas H. McGlashan (1942– ) and colleagues]

**scale parameter** see DISPERSION PARAMETER.

**scaling** *n.* the process of constructing an instrument to measure, assess, and order some quantity or characteristic (e.g., height, weight, happiness, empathy). A researcher must evaluate how a given construct of interest should be measured and how optimally to obtain scores for individuals on these measures. See SCALE DEVELOPMENT.

**scalogram** *n.* see GUTTMAN SCALE.

**Scanlon plan** a type of GAINSHARING program in which employees are motivated to improve productivity by monetary bonuses and participation in solving production problems. A production committee made up of supervisors and employees is formed within each unit in an organization; this committee screens suggestions from employees for reducing costs and improving productivity. Gains, such as cost savings or the value of improved production, are shared with the whole group, not just the individuals making the suggestions. See also INDUSTRIAL DEMOCRACY; PARTICIPATIVE DECISION MAKING; QUALITY CIRCLE. [Joseph Scanlon (1899–1956), U.S. union leader]

**scanning** *n.* in medicine, the process of using radiological, magnetic, or other means to visualize and examine the body or a portion of it to diagnose a disease or disorder.

**scanning hypothesis** the speculative notion that rapid eye movements during REM SLEEP may correspond to subjective gaze shifts of the sleeper looking at a dream scene. Such eye movement are, however, generally very repetitive, unlike normal eye movements in an awake individual who is visually fixating on a specific object or scene.

**scanning speech** speech that is slow with variable intonations and involuntary interruptions between syllables. It results from cerebellar lesions or other neuromuscular damage.

**scapegoating** *n.* blaming; the process of directing one's anger, frustration, and aggression onto others and targeting them as the source of one's problems and misfortunes. See also DISPLACEMENT. —**scapegoat** *n., vb.*

**scapegoat theory** **1.** an analysis of violence and aggression in which individuals undergoing negative experiences (such as failure or abuse by others) are assumed to blame an innocent individual or group for causing the experience. Subsequent mistreatment of this scapegoat then serves as an outlet for individuals' frustrations and hostilities (see DISPLACED AGGRESSION). It has also been suggested

that when scapegoats have been targets for aggression over the years they may thus acquire the quality of a stimulus for aggression. **2.** an analysis of PREJUDICE in which intergroup conflict is assumed to be caused, in part, by the tendency of individuals to blame their negative experiences on other groups. The theory is supported by studies suggesting that racial prejudice increases during periods of economic downturn and high unemployment. See REALISTIC GROUP CONFLICT THEORY. See also FRUSTRATION-AGGRESSION HYPOTHESIS.

**scapular reflex** an involuntary contraction of the scapular muscle when the skin over the scapula (shoulder blade) is irritated.

**SCAT** acronym for SCHOOL AND COLLEGE ABILITY TEST.

**scato-** (*scat-*) *combining form* feces or filth.

**scatologia** *n.* preoccupation with obscenities, lewdness, and filth, mainly of an excremental nature. The term is derived from the Greek word for dung. In psychoanalytic theory, scatologia is usually associated with ANAL EROTICISM. Also called **scatology**. —**scatological** *adj.*

**scatophilia** *n.* sexual interest and arousal derived from talking about excrement and using obscene language.

**scatter** *n.* **1.** the tendency of data points to diverge from each other. An example is the variation in scores across a set of tests on the same individual; another is the variation among test takers on a particular test. See also DISPERSION; VARIANCE. **2.** in PROFILE ANALYSIS, the tendency for a set of scores for an individual to vary from the average of scores.

**scattering** *n.* a type of thinking characterized by tangential or irrelevant associations that may be expressed in incomprehensible speech. It is observed in individuals with schizophrenia.

**scatterplot** *n.* a graphical representation of the relationship between two continuously measured variables in which one variable is arrayed on each axis and a dot or other symbol is placed at each point where the values of the variables intersect. The overall pattern of dots provides an indication of the extent to which there is a LINEAR RELATIONSHIP between variables. A round mass of points shows no linear relation, an elliptical cloud of points with a positive slope shows a positive relation, and an elliptical cloud with a negative slope shows a negative relation. OUTLIER points are also clearly visible. Also called **dot plot**; **scattergram**. See also REGRESSION LINE.

**scavenging** *n.* the behavior of feeding on dead organic matter, such as carrion or scraps left by other animals. Scavenging behavior is found in many species, including lions, vultures, hyenas, jackals, and chimpanzees.

**scedasticity** *n.* the distribution of ERROR TERMS in a set of random variables. The pattern of errors may be due to chance and have constant VARIANCE (homoscedasticity), or there may be some pattern, such as a clustering of greater error with certain points on the independent variable (heteroscedasticity). REGRESSION ANALYSIS generally assumes homoscedasticity.

**scenario analysis** a process in which managers conceptualize a range of plausible, logically consistent situations (scenarios) that may arise in the future and attempt to identify the implications of these for their organization and its activities. The purpose is not so much to predict the future—some of the scenarios considered may be highly unlikely—as to promote better decision making, better per-

sonnel use, and critical scrutiny of existing systems and processes, especially in terms of their ability to respond flexibly to unexpected negative events. Scenario analysis has important applications in such fields as politics, military strategy, business, ergonomics, and accident prevention.

**scenario-based design** in ergonomics, a design practice in which different potential uses for a product or system are envisioned and then analyzed to help designers identify and correct potential problems or flaws.

**scent marking** the act by a nonhuman animal of depositing ODORANTS on a substrate, often from specialized **scent glands** that produce them. Scent glands are commonly found in the anogenital region, in the axilla, in the suprapubic region, and around the mouth. Scent marking provides cues about species, sex, reproductive status, and dominance status that can remain on or diffuse slowly from a substrate after the marking individual has left.

**Schachter-Singer theory** the theory that experiencing and identifying emotional states are functions of both physiological arousal and cognitive interpretations of the physical state. Also called **attribution of emotion**; **cognitive arousal theory of emotion**; **Schachter theory**; **two-factor theory of emotion**. See also JAMES-LANGE THEORY. [Stanley SCHACHTER and Jerome E. **Singer** (1924–2010), U.S. psychologists]

**schadenfreude** *n.* the gaining of pleasure or satisfaction from the misfortune of others. [from German *Schaden*, “harm,” and *Freude*, “joy”]

**Schaffer collateral** an axon branch from a neuron in area CA3 of the HIPPOCAMPUS that projects to area CA1.

**Schaie's stages of cognitive development** a stage theory in which human cognitive processes are posited to develop within up to five periods during the lifespan. In the first, the **acquisitive stage**, an individual's primary cognitive task is to acquire knowledge and intellectual skills. Corresponding to developmental approaches such as that of Jean PIAGET, this stage occurs from infancy through adolescence. The **achieving stage** occurs next, in young adulthood, during which an individual's primary cognitive task is to achieve personal goals (e.g., starting a family, establishing a career) by applying the intellectual skills learned during the acquisitive stage. The individual then uses those skills in middle adulthood, during the **responsible stage**, to manage increasingly complex situations arising from family, community, and career responsibilities. This stage may be followed by the **executive stage**, during which some middle-aged adults may achieve a high level of intellectual functioning characterized by a broadened focus on societal rather than on exclusively personal concerns and by an ability to set priorities as well as to assimilate conflicting information. Finally, in the **reintegrative stage**, individuals in late adulthood apply their intellectual skills to reexamine their life experiences and priorities and to focus their attention on tasks of great personal meaning. Memory storage and retrieval and the speed of other cognitive functions may decline, but general cognitive ability continues to develop during this stage. Also called **Schaie's stages of adult cognitive development**. See also SEATTLE LONGITUDINAL STUDY. [proposed in the 1970s by K. Warner **Schaie** (1928– ), U.S. psychologist]

**scheduled awakening** a form of behavior therapy for elimination of persistent nightmares (see NIGHTMARE DISORDER; SLEEP TERROR DISORDER). The procedure includes

the regular wakening of the sleeper at intervals related to REM SLEEP.

**scheduled drug** any of various drugs whose prescription or use has been restricted by the U.S. Drug Enforcement Administration in accordance with the Controlled Substances Act of 1970. Schedule I drugs are those for which all nonresearch use is illegal (e.g., LSD, heroin). Schedule II drugs include most opiates, stimulants (e.g., cocaine, amphetamines, methylphenidate), barbiturates, and prescribed forms of tetrahydrocannabinol (dronabinol). For Schedule II drugs, no refills or telephone prescriptions are permitted. Schedule III drugs include some opioids, barbiturates, and stimulants subject to abuse; prescriptions must be rewritten after 6 months, with a maximum of five refills. Schedule IV drugs include certain opioids, some stimulants, and most of the benzodiazepines. Refills are limited to five, and prescriptions must be rewritten after 6 months. Schedule V drugs include several opiates with low abuse potential (low doses of codeine and others). The Schedule of Controlled Substances, originally designed to restrict the prescription of commonly abused drugs, is periodically updated as the popularity of new agents—generally drugs of abuse—reaches the attention of authorities.

**Schedule for Affective Disorders and Schizophrenia (SADS)** a STRUCTURED INTERVIEW used to identify and describe in detail a range of psychopathological symptoms so as to make standardized and reliable diagnoses in adults. The SADS includes a progression of questions and criteria and provides for the rating of symptom severity, both for lifetime occurrence and most recent or current occurrence, using a 0 to 4, 0 to 6, or 0 to 7 scale. A version of the SADS for use with children and adolescents, the **Kiddie Schedule for Affective Disorders and Schizophrenia (KSADS)**, is also available. [originally developed in 1978 by U.S. psychiatrist Robert L. Spitzer (1932– ) and U.S. clinical psychologist Jean Endicott (1936– )]

**schedule-induced polydipsia** see ADJUNCTIVE BEHAVIOR; POLYDIPSIA.

**schedule of reinforcement** in conditioning, a rule that determines which instances of a response will be reinforced. There are numerous types of schedules of REINFORCEMENT, entries for which are provided elsewhere in the dictionary. Also called **reinforcement schedule**.

**Scheffé test** a POST HOC TEST used after a researcher obtains a significant F RATIO in an ANALYSIS OF VARIANCE that has more than two levels (i.e., more than two conditions of an independent variable that are being examined for differences among their mean values). It allows for the testing of all possible contrasts (weighted comparisons of any number of means) while controlling the probability of a TYPE I ERROR for the set of contrasts at a prespecified level. The Scheffé test is considered to be one of the most stringent MULTIPLE COMPARISON TESTS because it is conservative in its identification of statistically significant mean differences between groups. [Henry Scheffé (1907–1977), U.S. mathematician]

**schema** *n.* (*pl.* **schemata**) **1.** a collection of basic knowledge about a concept or entity that serves as a guide to perception, interpretation, imagination, or problem solving. For example, the schema “dorm room” suggests that a bed and a desk are probably part of the scene, that a microwave oven might or might not be, and that expensive Persian rugs probably will not be. Also called **cognitive schema**. See also FRAME; PERCEPTUAL SCHEMA. **2.** a cognitive struc-

ture representing a person's knowledge about some entity or situation, including its qualities and the relationships between these. Schemas are usually ABSTRACTIONS that simplify a person's world. In 1932, Frederic C. BARTLETT showed that past experiences are stored in memory as schemas; impressions of other people are also thought to be organized in this way. **3.** an outlook or assumption that an individual has of the self, others, or the world that endures despite objective reality. For example, “I am a damaged person” and “Anyone I trust will eventually hurt me” are negative schemas that may result from negative experiences in early childhood. A goal of treatment, particularly stressed in COGNITIVE THERAPY, is to help the client to develop more realistic, present-oriented schemas to replace those developed during childhood or through traumatic experiences. See also SELF-IMAGE; SELF-SCHEMA. —**schematic** *adj.*

**schema therapy** a therapeutic approach that integrates the techniques of COGNITIVE BEHAVIOR THERAPY with the depth-oriented and emotion-focused strategies of other approaches to bring about **schema change**—that is, to alter patterns of belief that individuals have derived about themselves, other individuals and social groups, and various situations from early experiences and that now interfere with their cognitive, emotional, and behavioral functioning. Schema therapy is used to treat individuals with chronic psychological conditions, such as personality disorders, eating disorders, and intractable couples problems. It has also been used for relapse prevention of depression, anxiety, and substance abuse. [developed in the 1990s by U.S. clinical psychologist Jeffrey E. Young (1950– )]

**schematic classification** see COMPLEMENTARY CLASSIFICATION.

**schematic image** a mental picture or representation of an object composed of that object's most conspicuous features. Once formed, the schematic image is the model against which similar perceptual configurations are judged.

**schematic representation** the characterization of individuals, objects, events, or processes in terms of their real or potential interactions with each other.

**scheme** *n.* a cognitive structure that contains an organized plan for an activity, thus representing generalized knowledge about an entity and serving to guide behavior. For example, there is a simple sucking scheme of infancy, applied first to a nipple and later to a thumb, soft toy, and so forth. This term is often used as a synonym of SCHEMA.

**schizencephalic** *adj.* denoting or relating to abnormal clefts or divisions in brain tissue. The deformities may result from maldevelopment during fetal life or early infancy or be produced by destructive lesions of the brain. —**schizencephaly** *n.*

**schizo-** (**schiz-**) *combining form* split or fissure.

**schizoaffective disorder** in *DSM-IV-TR*, an uninterrupted illness featuring at some time a MAJOR DEPRESSIVE EPISODE, MANIC EPISODE, or MIXED EPISODE concurrently with characteristic symptoms of schizophrenia (e.g., delusions, hallucinations, disorganized speech, catatonic behavior) and, in the same period, delusions or hallucinations for at least 2 weeks in the absence of prominent mood symptoms. *DSM-5* identifies the mood episodes only as either major depressive or manic and emphasizes that mood disturbances must be present for a majority of the time.

Also called **schizoaffective psychosis**; **schizoaffective schizophrenia**.

**schizoid** *adj.* denoting characteristics resembling schizophrenia but in a milder form, involving lack of affect, social passivity, and minimal introspection.

**schizoidism** *n.* a complex of behavioral traits that include seclusiveness, quietness, and general introversion, indicating a separation by the person from his or her surroundings, the confining of psychic interests to the self, and in many cases a tendency toward schizophrenia. Also called **schizoidia**. [defined by Eugen BLEULER]

**schizoid–manic state** a psychotic state combining features of both manic and schizophrenic excitement. Also called **schizomania**. [identified by Adolf MEYER, Austrian-born U.S. psychiatrist Abraham Brill (1874–1948), and Eugen BLEULER]

**schizoid personality disorder** a personality disorder characterized by long-term emotional coldness, absence of tender feelings for others, lack of desire for and enjoyment of close relationships, and indifference to praise or criticism and to the feelings of others. The eccentricities of speech, behavior, or thought that are characteristic of SCHIZOTYPAL PERSONALITY DISORDER are absent in those with schizoid personality disorder. It is included in both *DSM–IV–TR* and *DSM–5*.

**schizoid phenomena** in OBJECT RELATIONS THEORY, an individual's withdrawal into fantasy and avoidance of contact with others, due to fears of being abandoned or engulfed, while at the same time still craving social relationships. [introduced in 1968 by British psychoanalyst Harry Guntrip (1901–1975)]

**schizomania** *n.* see SCHIZOID–MANIC STATE.

**schizophrenia** *n.* a psychotic disorder characterized by disturbances in thinking (cognition), emotional responsiveness, and behavior, with an age of onset typically between the late teens and mid-30s. Schizophrenia was first formally described in the late 19th century by Emil KRAEPELIN, who named it *DEMENTIA PRAECOX*; in 1908, Eugen BLEULER renamed the disorder *schizophrenia* (Greek, “splitting of the mind”) to characterize the disintegration of mental functions associated with what he regarded as its FUNDAMENTAL SYMPTOMS of abnormal thinking and affect. According to *DSM–IV–TR*, the characteristic disturbances must last for at least 6 months and include at least 1 month of active-phase symptoms comprising two or more of the following: delusions, hallucinations, disorganized speech, grossly disorganized or catatonic behavior, or NEGATIVE SYMPTOMS (e.g., lack of emotional responsiveness, extreme apathy). These signs and symptoms are associated with marked social or occupational dysfunction. Some have argued (beginning with Bleuler) that disorganized thinking (see FORMAL THOUGHT DISORDER; SCHIZOPHRENIC THINKING) is the single most important feature of schizophrenia, but *DSM–IV–TR* and its predecessors have not emphasized this feature, at least in their formal criteria. *DSM–5* retains essentially the same criteria but emphasizes that delusions, hallucinations, or disorganized speech must be among the symptoms required for diagnosis. It also eliminates the five distinct subtypes of schizophrenia previously described in *DSM–IV–TR*: CATATONIC SCHIZOPHRENIA, DISORGANIZED SCHIZOPHRENIA, PARANOID SCHIZOPHRENIA, RESIDUAL SCHIZOPHRENIA, and UNDIFFERENTIATED SCHIZOPHRENIA. —**schizophrenic** *adj.*

**Schizophrenia Patient Outcomes Research Team (PORT)** a group of researchers established in 1992 by the Agency for Health Care Policy and Research and the National Institute of Mental Health. The team conducted a 5-year study to assess the treatment and management of schizophrenia (including pharmacotherapies, psychological and family interventions, vocational rehabilitation, and assertive community treatment) and subsequently developed 15 recommendations for improving patient outcomes. The researchers reviewed the literature on schizophrenia treatment outcomes and also surveyed a random sample of 719 individuals diagnosed with schizophrenia in two U.S. states to determine how the scientific evidence compared with actual clinical practice in outpatient and inpatient settings in both urban and rural areas. It was found that the overall rates at which patients' treatment conformed to the study recommendations were generally below 50%, indicating the need for greater efforts to ensure that treatment research results are translated into practice, and that the key to improving patient outcomes is adoption of a comprehensive and individualized strategy that includes not only proper doses of appropriate medications but also patient and family education and support.

**schizophrenic episode** a period during which an individual exhibits prominent symptoms of schizophrenia, such as hallucinations, delusions, disordered thinking, and disturbances in emotional responsiveness and behavior. See also ACUTE SCHIZOPHRENIC EPISODE.

**schizophrenic reaction** a former diagnosis for the symptoms of schizophrenia. Coined around 1911 by Adolf MEYER, the term signified a cluster of maladaptive disturbances that he believed developed in reaction to psychosocial stressors. His views were an argument against the concept, originally advanced under the name of *DEMENTIA PRAECOX* by Emil KRAEPELIN, that characterized schizophrenia as a disease entity with purely biological causes. Schizophrenic reaction was one of several REACTION TYPES in Meyer's nomenclature of mental illness.

**schizophrenic thinking** pervasive, marked impairment of thinking in terms of LOOSENING OF ASSOCIATIONS and slowness of associations, representing POSITIVE SYMPTOMS and NEGATIVE SYMPTOMS, respectively, of schizophrenia. Because thinking must be inferred rather than observed, and because no single definition or test or technique of inference has been universally accepted, evaluation is usually limited to examining samples of speech or writing that the individual is inclined to express. On certain psychological tests (e.g., Rorschach, MMPI), schizophrenic thinking is identified by **deviant verbalizations**, which are unusual, exaggerated, or otherwise abnormal responses to items presented during the test, such as inventing a word (see NEOLOGISM) to describe a Rorschach inkblot. On the Whitaker Index of Schizophrenic Thinking (WIST; 1980), schizophrenic impairment of thinking is defined as simultaneously illogical, impaired, and without apparent awareness, all to a marked degree.

**schizophreniform disorder** in *DSM–IV–TR* and *DSM–5*, a disorder whose essential features are identical to those of schizophrenia except that the total duration is between 1 and 6 months (i.e., intermediate between BRIEF PSYCHOTIC DISORDER and schizophrenia) and social or occupational functioning need not be impaired. The diagnosis applies without qualification to an episode of between 1 and 6 months' duration from which the individual has already recovered. The diagnosis is provisional when there is

no certainty of recovery within the 6-month period. If the disturbance persists beyond 6 months, the diagnosis would be changed to schizophrenia.

**schizophreniform psychosis** a type of psychosis in which symptoms typical of NUCLEAR SCHIZOPHRENIA are present but there is good PREMORBID ADJUSTMENT, sudden onset in response to a clear precipitating event, and a good prognosis and high probability of return to normal levels of functioning. Also called **schizophreniform state**. [proposed in the late 1930s by Norwegian psychiatrist Gabriel Langfeldt (1895–1983)]

**schizophrenogenic** *adj.* denoting a factor or influence viewed as causing or contributing to the onset or development of schizophrenia.

**schizophrenogenic mother** the stereotypic mother of an individual with schizophrenia. She is held to be emotionally disturbed, cold, rejecting, dominating, perfectionistic, and insensitive. At the same time, however, she is overprotective, fosters dependence, and is both seductive and rigidly moralistic. Historically, this type of mother was considered to play a causal role in the development of schizophrenia, but this view is no longer held. [first defined in 1948 by Frieda FROMM-REICHMANN]

**schizotaxia** *n.* a genetic predisposition to schizophrenia, deemed necessary for the disorder to manifest and held to be activated by severe environmental stresses. [presented as a concept in 1962 by Paul Everett MEEHL]

**schizotypal personality disorder** a personality disorder characterized by various oddities of thought, perception, speech, and behavior that are not severe enough to warrant a diagnosis of schizophrenia. Symptoms may include perceptual distortions, MAGICAL THINKING, social isolation, vague speech without incoherence, and inadequate rapport with others due to aloofness or lack of feeling. It is included in both *DSM-IV-TR* and *DSM-5*.

**schizotypy** *n.* in research contexts, a type of personality organization defined by milder forms of POSITIVE SYMPTOMS of schizophrenia, such as COGNITIVE SLIPPAGE, and NEGATIVE SYMPTOMS, such as inability to experience pleasure (see ANHEDONIA). Schizotypy is studied in individuals and family members as a predictor of or liability for the later occurrence of schizophrenia.

**Schmid-Fracarro syndrome** see CAT'S-EYE SYNDROME.

**Schnauzkrampf** *n.* see LIP PURSING.

**scholastic acceleration** see EDUCATIONAL ACCELERATION.

**scholastic achievement test** any test that measures a student's knowledge and ability in a specific area of academic study, such as chemistry, history, mathematics, Spanish, or literature.

**Scholastic Assessment Test (SAT)** a test used in selecting candidates for college admission, formerly called the **Scholastic Aptitude Test**. It measures critical reading abilities, mathematical reasoning abilities, and writing abilities developed over time through work done in school and alone. The critical reading section (formerly called the verbal section) tests the ability to understand and analyze what is read and to recognize relationships between parts of a sentence. The mathematics section tests the ability to solve problems involving arithmetic, algebra, and geometry. The writing section tests the ability to organize

thoughts, develop and express ideas, use language, and adhere to grammatical rules. The SAT is accepted by most public and private colleges in the United States as a standardized evaluation test for the purpose of competitive admission discrimination.

**Scholasticism** *n.* the system of logic, philosophy, and theology taught by university scholars in medieval Europe. It was based on ARISTOTELIAN logic, the writings of the early Christian fathers, and the authority of tradition and dogma. Major preoccupations included the attempt to reconcile faith with reason and the dispute between NOMINALISM and REALISM. Prominent Scholastics included Thomas AQUINAS, French philosopher Jean Burridan (c. 1295–1358), Scottish theologian John Duns Scotus (c. 1226–1308), and English Franciscan monk and philosopher William of Occam (c. 1285–1347). —**Scholastic** *n., adj.*

**school** *n.* **1.** a place or institution where people receive instruction. **2.** a major division of a university consisting of specialized, related subdivisions devoted to teaching, research, and scholarship. **3.** the adherents, collectively, of an approach to some field of subject matter having a developed theoretical framework and an associated literature. Examples of schools of psychology are behaviorism, functionalism, Gestalt psychology, structuralism, and psychoanalysis.

**school-ability test** an assessment designed to evaluate a student's educational achievements in order to obtain information that will subsequently enhance his or her learning. The assessment can include a variety of widely accepted tests and measurement techniques as the bases for judgment. Under the direction of trained and competent staff, the assessment will meet appropriate federal and state laws, Board of Education policy, and the criteria for ethical and professional teaching.

**school-activity record** **1.** a record of an individual's participation in the sports, clubs, and interscholastic and intramural activities of a school or institution. **2.** a listing of all such activities that are offered by a school or institution.

**School-Age Cognitive Battery** see DIFFERENTIAL ABILITY SCALES.

**School and College Ability Test (SCAT)** an academic aptitude test in three levels, administered from Grade 2 through Grade 12 to children performing above grade level. The test yields a verbal score, based on a verbal-analogies segment; a quantitative score, based on comparisons involving fundamental number operations; and a total score. It is often used to identify candidates for TALENTED AND GIFTED programs. [originally developed by the EDUCATIONAL TESTING SERVICE and now owned by The Johns Hopkins University Center for Talented Youth]

**school avoidance** see SCHOOL REFUSAL.

**school-based intervention** any strategy implemented in a classroom setting to improve the health and well-being of students, often by reducing or preventing pathology and problem behaviors (e.g., depression, social anxiety, cigarette smoking, drug or alcohol use, bullying and aggression). Requiring interdisciplinary coordination among school psychologists, counselors, social workers, teachers, and administrative staff, programs may be targeted at subgroups of high-risk individuals or implemented across the general school population of children and adolescents. Interventions may incorporate such activities as specially designed lectures, guided online lessons, group discussions,



role play, and special homework assignments to be completed with parents.

**school counseling** guidance—offered at school or elsewhere to students, parents, and other caregivers—that focuses on students' academic, personal, social, and career adjustment, development, and achievement. Counseling is offered by certified and licensed professionals at all educational levels, from elementary through college and professional school.

**school grade** **1.** a letter or number representing the quality of academic work. **2.** a group of students who are taught together at the same level, usually grouped by age, or the children who belong to such a grouping.

**schooling** *n.* **1.** in animal behavior, the formation of large AGGREGATIONS of fish. Schooling is thought to minimize predation through CONFUSION EFFECTS and DILUTION EFFECTS or to improve hydrodynamic properties so that individual fish can move more efficiently through water. **2.** the process of educating students in a formal setting or the provision of education.

**school integration** **1.** the process of bringing all parts of a classroom or community environment together into a whole, using such means as computers, communication with local-government officials, and applied workplace learning. **2.** the reduction or elimination of racial segregation in public schools. This has been attempted by artificially reconfiguring the racial balance within all district schools to reflect the proportionate racial balance in the community as a whole.

**school neuropsychology** an emerging specialty that seeks to provide teachers, educational administrators, and others with a better understanding of their students' cognitive processing strengths and weaknesses, with the ultimate goal of informing their development of educational practices that will most benefit each individual learner. **School neuropsychologists** observe student behavior; administer and interpret NEUROPSYCHOLOGICAL TESTS and other standardized assessment instruments; and use student profiling systems, curriculum-based measures, and progress monitoring. Although school neuropsychology often concentrates on children, particularly those with learning and other disabilities, it serves adolescents and adults as well. See also PEDIATRIC NEUROPSYCHOLOGY.

**school phobia** see SCHOOL REFUSAL.

**school psychology** a field of psychology concerned with the PSYCHOEDUCATIONAL PROBLEMS and other issues arising in primary and secondary schools. The responsibilities of the **school psychologist** include involvement in overall curriculum planning, individualized curriculum assessment and planning, administration of psychoeducational tests, interviews with parents concerning their child's progress and problems, pupil behavior problems, counseling of teachers and students, and research on systematic educational questions and issues. See BEHAVIORAL CONSULTATION.

**school readiness** **1.** the developmental level at which a child is prepared to adjust to school. **2.** any of a variety of programs designed to prepare children of below kindergarten age for attending formal school by helping them acquire certain skills, such as being able to pay attention to adult-directed tasks for short periods of time, to speak in five- to six-word sentences, and to identify letters of the alphabet. These programs are often referred to as **prekindergarten**

or **nursery school**. **3.** efforts to help communities provide the best environments for children, especially in the areas of health, early education, and school entry. The emphasis is on reducing factors that could detract from children's readiness to attend school.

**school refusal** persistent reluctance to go to school, which usually occurs during the primary school years and is often a symptom of an educational, social, or emotional problem. School refusal may be a feature of SEPARATION ANXIETY DISORDER. It may be triggered by a stressor (e.g., loss of a pet or loved one, a change of school, loss of a friend due to a move), or it may occur after a summer vacation when the child has spent more time with the primary caregiver. School refusal is often associated with complaints of physical symptoms (e.g., upset stomach, nausea, dizziness, headache) and anxiety at the start of the day. Also called **school avoidance**; **school phobia**.

**school truancy** see TRUANCY.

**Schröder staircase** an AMBIGUOUS FIGURE of a staircase, which can be perceived as seen either from above or from underneath the stairs, depending on the perspective of the observer. It is often confused with the STAIRCASE ILLUSION. [Heinrich **Schröder** (1810–1885), German bacteriologist and educator]

**Schultze's acroparesthesia** see ACROPARESTHESIA. [Friedrich **Schultze** (1848–1934), German neurologist]

**schwa** *n.* a nondistinct neutral vowel represented in the INTERNATIONAL PHONETIC ALPHABET by the symbol ə. In English, it is very common in unstressed syllables, such as the first syllable of *alone*.

**Schwann cell** a type of nonneuronal peripheral nervous system cell (GLIA) that forms the MYELIN SHEATH around axons. Extensions of a single Schwann cell wind tightly and many times around several neighboring axons, so that the myelin sheath consists of multiple layers of the Schwann-cell plasma membrane. [Theodor **Schwann** (1810–1882), German physiologist]

**schwannoma** *n.* a type of tumor that develops from SCHWANN CELLS. Although typically benign, schwannomas tend to displace and compress surrounding neurons as they grow. A schwannoma is very similar to a NEUROFIBROMA but is distinguished by its capsule.

**schwannomatosis** *n.* see NEUROFIBROMATOSIS.

**sciatic nerve** a large peripheral nerve that connects the receptor and effector cells in the leg to the spinal cord. Pain in the leg, which may extend over the entire length of this nerve, from the buttocks to the foot, is called **sciatica**. The cause is most commonly a SLIPPED DISK pressing on the nerve root emerging from the spinal cord.

**science** *n.* the systematic study of structure and behavior in the physical, natural, and social worlds, involving the generation, investigation, and testing of HYPOTHESES, the accumulation of data, and the formulation of general laws and theories. There are several major branches, including the natural sciences (e.g., biology, physics) and the social sciences. The subdisciplines of psychology are themselves divided among the different branches. For example, neuroscience and the study of the biological bases for behavior can be classed with the natural sciences, whereas social psychology and many aspects of clinical psychology can be seen as belonging to the social sciences. See SCIENTIFIC EXPLANATION; SCIENTIFIC METHOD.

**scientific explanation** an account of an event, behavior, or thought that is couched in terms of an established set of scientific principles, facts, and assumptions. Typical forms of explanation may be reductionistic, analyzing a phenomenon into components and describing how they combine to produce the phenomenon; ontogenic, relating the phenomenon to a universal set of developmental stages; empiricistic, describing a phenomenon in terms of the conditions that have been observed to produce it; or metaphoric or categorical, identifying a phenomenon as similar in some important respects to other phenomena already understood. Such an explanation stated systematically is generally known as a **THEORY**.

**scientific jury selection** the use of the methods of social science to identify prospective jurors who may be favorably predisposed to one's side in a legal dispute.

**scientific management** generally, the application of scientific methods to achieve improved worker efficiency and work conditions. More specifically, the term refers to the approach introduced by U.S. engineer Frederick W. Taylor (1856–1915) in the late 19th century and publicized in a 1911 book. This approach, also known as **Taylorism** or the **Taylor system of scientific management**, involves (a) studying the work to determine the most efficient way of performing tasks (see **TIME AND MOTION STUDY**) and (b) paying workers piece-rate incentives to adopt these methods (see **PIECEWORK**).

**scientific method** a set of procedures, guidelines, assumptions, and attitudes required for the organized and systematic collection, interpretation, and verification of data and the discovery of reproducible evidence, enabling laws and principles to be stated or modified. See also **SCIENCE**; **SCIENTIFIC EXPLANATION**.

**scientific psychology** the body of psychological facts, theories, and techniques that have been developed and validated through the use of the **SCIENTIFIC METHOD**. They thus depend on objective measurement and the replication of results under controlled or known conditions. See **EXPERIMENTAL PSYCHOLOGY**.

**scientific rationality** the qualities of reason and logic that characterize, or ought to characterize, scientific inquiry. For many, science is the epitome of rationality because of its adherence to the rules of logic and evidence, its rejection of supernatural explanations, its devotion to objectivity, and its careful public testing of hypotheses. A commitment to standards and procedures of this kind is usually taken to be the criterion by which a discipline, such as psychology, may be judged to be a science. More narrowly, scientific rationality is sometimes equated with **POSITIVISM**.

**scientific reasoning** a type of reasoning that involves the generation of hypotheses and the systematic testing of those hypotheses.

**scientific revolution** a major change in the theoretical framework of a field of science, as identified by U.S. philosopher of science Thomas Kuhn (1922–1996). Research carried out within the framework of a **NORMAL SCIENCE**—that is, one with an active **PARADIGM** that defines the subject matter and methods of the science—will over time yield **ANOMALIES** that are inconsistent with predicted results. When a sufficient number of anomalies occur, a **CRISIS** stage may emerge, which motivates scientists and theorists to rethink the fundamental assumptions and methods of the science, and a complete reformulation may take place.

This drastically changes both the activities and perspective of the scientists involved and the nature and subject matter of the science, at which time a new normal science may emerge. See also **PARADIGM CLASH**; **PARADIGM SHIFT**.

**scientism** *n.* an uncritical commitment to a particular view of science and scientific methods that leads its adherents to dismiss all other approaches as intellectually invalid. The term is mainly used by those who criticize the assumptions of Western science as arrogant or flawed, who maintain that scientific methods are inappropriate in certain fields or incapable of apprehending certain kinds of truth, or who reject the implication that all philosophical questions will one day reduce to scientific questions. —**scientistic** *adj.*

**scientist-practitioner model** the concept underlying university training of doctoral clinical (or other applied) psychologists in the United States that is intended to prepare individuals both to provide services and to conduct research on mental health problems, essentially integrating these two functions in their professional work by making a laboratory of their applied settings and studying scientifically both the phenomena that are the focus of their services and the results of those services. The purpose of the model is to ensure that practitioners contribute to the scientific development of their field. The training emphasizes research techniques applicable to therapeutic settings. The model emerged from a conference held in Boulder, Colorado, in 1949, which was sponsored by the U.S. Veterans Administration and the National Institute of Mental Health. Also called **Boulder model**.

**Scientology** *n.* a movement and belief system, first incorporated as a religion in 1953, that emphasizes the harmful effects of **ENGRAMS** (memory traces) of past traumatic experiences. Adherents practice a technique known as **DIANETICS**, in which interactions with an *auditor* and the use of a device called an *E-meter* (essentially a gauge of the electrodermal response; see **GALVANIC SKIN RESPONSE**) can lead eventually to a posited liberated state known as *being clear*. Scientology also has its own elaborate cosmology, in which humans are believed to be reincarnated “*thetans*,” immaterial, divine beings who have become trapped in the material world. [founded by U.S. science-fiction writer L(afayette) Ron(al)d Hubbard (1911–1986)] —**Scientologist** *n.*

**scieropia** *n.* a visual anomaly in which objects appear to be in a shadow. It can have emotional or psychological causes, in which case it is identified as **scierneuropisia**.

**SCII** abbreviation for Strong–Campbell Interest Inventory. See **STRONG INTEREST INVENTORY**.

**scintillating scotoma** see **SCOTOMA**.

**sciosophy** *n.* any system of thought, such as **ASTROLOGY**, that claims knowledge of natural or supernatural phenomena but that is not supported by scientific methods. See **PSEUDOSCIENCE**. [coined by U.S. biologist and ichthyologist David Starr Jordan (1851–1931)]

**scissors gait** a type of gait observed, for example, in some patients with cerebral palsy who cross their legs in scissors fashion when walking.

**sclera** *n.* the tough, white outer coat of the eyeball, which is continuous with the cornea at the front and the sheath of the optic nerve at the back of the eyeball.

**sclero-** (**scler-**) *combining form* hardness.

**sclerosis** *n.* hardening of tissues, usually as a consequence of disease or aging. It particularly affects the nervous system (see AMYOTROPHIC LATERAL SCLEROSIS; MULTIPLE SCLEROSIS) and the circulatory system (see ARTERIOSCLEROSIS; ATHEROSCLEROSIS). —**sclerotic** *adj.*

**SCL-90-R** abbreviation for SYMPTOM CHECKLIST-90-REVISED.

**SCN** abbreviation for SUPRACHIASMATIC NUCLEUS.

**scoliosis** *n.* a lateral (sideways) curvature of the spine. See also KYPHOSIS; LORDOSIS.

**-scope** *suffix* instrument for observing (e.g., OSCILLOSCOPE).

**scope of attention** **1.** the extent to which an individual is able to attend to and process a range of different items at the same time. A distinction is sometimes made between **perceptual scope of attention**, which is the capacity to process a range of sensory stimuli (see APPREHENSION SPAN), and **conceptual scope of attention**, which is the ability to deal simultaneously with a number of ideas or concepts. **2.** the range of stimuli that an individual is actively focusing his or her attention upon at any particular time. The scope of attention will be more or less narrow depending on the demands of the task at hand and a range of subjective factors. See ATTENTIONAL NARROWING; FOCAL ATTENTION; SELECTIVE ATTENTION.

**scopo- (scop-)** *combining form* observation or watching.

**scopolamine** *n.* an ANTICHOLINERGIC DRUG found as an alkaloid in HENBANE and related plants. Its most common therapeutic use is for the prevention of motion sickness; in the past, it was sometimes used in labor to produce twilight sleep (a conscious but drowsy state with lack of sensitivity to pain) and amnesia for the event. Small doses can have a sedative effect, but large doses may cause restlessness, agitation, or delirium. Also called **hyoscine**. U.S. trade names: **Scopace**; **Transderm-Scop**.

**scopophilia** *n.* sexual pleasure derived from watching others in a state of nudity, undressing, or engaging in sexual activity. If scopophilia is persistent, the condition is essentially VOYEURISM. Also called **scotophilia**.

**score** **1.** *n.* a quantitative value assigned to test results or other measurable responses. **2.** *vb.* to assign scores to responses using some predetermined criteria.

**score band** see BANDING.

**score equating** the process of ensuring that results from one version or administration of a test have the same distribution as those obtained from another version or administration, so that the interpretation of the results can be as fair as possible to all test takers. Also called **observed-score equating**.

**scorer reliability** see INTERRATER RELIABILITY.

**scoring** *n.* the application of an answer key to a test or survey for the purpose of obtaining a value (SCORE) that reflects an individual's position on an underlying construct. The answer key would typically indicate individual scores for the different responses on each item (e.g., from 1 to 7), such that the values per item can then be summed or averaged to obtain a composite score. Some instruments may have multiple subscales yielding separate values.

**scoterythrous vision** a type of color blindness in which reds appear darkened because of a deficiency in perceiving the red end of the spectrum.

**scoto- (scot-)** *combining form* **1.** darkness (e.g., SCOTOPIC). **2.** blindness (e.g., SCOTOMA).

**scotoma** *n.* an area of partial or complete loss of vision in the visual field. Vision may be depressed (**relative scotoma**), altered (**scintillating scotoma**), or completely lost (**absolute scotoma**). Scotomas can occur either in the central visual field (see CENTRAL SCOTOMA) or in the periphery (see PARACENTRAL SCOTOMA). See also VISUAL FIELD DEFECT.

**scotomization** *n.* in psychoanalytic theory, the tendency to ignore or be blind to impulses or memories that would threaten the individual's EGO. Scotomization is a defensive process and may also be a form of RESISTANCE. Also called **scotomatization**. See also BLIND SPOT.

**scotophilia** *n.* see NYCTOPHILIA.

**scotopic** *adj.* pertaining to low light levels and consequently being reliant on the RETINAL ROD system.

**scotopic stimulation** visual stimulation with dim targets, usually under conditions that specifically activate the RETINAL ROD system. Compare PHOTOPIC STIMULATION.

**scotopic vision** vision that occurs in dim light by means of the RETINAL ROD system. Because scotopic vision does not permit color discrimination, the visual scene appears in gray scale. However, the closer the illumination of a target is to 510 nm in wavelength, the brighter it will appear relative to other targets with the same energy, since this is the peak wavelength sensitivity for the rod system. Also called **twilight vision**. Compare PHOTOPIC VISION.

**scotopsin** *n.* the specific form of OPSIN found in RETINAL RODS. Scotopsin combines with 11-*cis* retinal to form RHO-DOPSIN, which is the functional photopigment with sensitivity to photons in the rods.

**scramble competition** in animal behavior, the mating rivalry that ensues when females are broadly dispersed or synchronous in their breeding, so that males do not benefit from holding territories or defending resources. Instead, males range widely and mate with any female they encounter, with little or no courtship behavior or MATE SELECTION. The males that are able to mate first with a female generally have the most REPRODUCTIVE SUCCESS.

**screen defense** in psychoanalytic theory, a DEFENSE MECHANISM in which a memory, fantasy, or dream image is unconsciously employed to conceal the real but disturbing object of one's feelings.

**screening** *n.* **1.** a procedure or program to detect early signs of a disease in an individual or population. Individuals at increased hereditary risk of developing a disease are advised to follow regular screening plans. See also SCREENING TEST. **2.** the initial evaluation of a patient to determine his or her suitability for psychological or medical treatment generally, a specific treatment approach, or referral to a treatment facility. This evaluation is made on the basis of medical or psychological history, MENTAL STATUS EXAMINATION, diagnostic formulation, or some combination of these. **3.** the process of selecting items for a psychological test. **4.** the process of determining, through a preliminary test, whether an individual is suitable for some purpose or task. See also SELECTION TEST.

**screening audiometry** rapid group measurement of audibility using a tone or tones of fixed level.

**screening experiment** a preliminary study in which a large number of factors are examined with the aim of filtering out those that show little association with the stud-

ied outcome. This allows researchers to narrow the field of potentially important factors before devoting resources to further study. See **PILOT STUDY**.

**screening sample** in survey methodology, a large group of individuals who are asked a preliminary set of questions in order to identify a much narrower subset of the population with an attribute of interest. For example, a nationwide survey of businesses might allow researchers to identify and then study in greater depth those companies that were started by business owners over 60 years old.

**screening test** any testing procedure designed to separate out people or items with a given characteristic or property. Screening tests are typically used to distinguish people who have a disease, disorder, or premorbid condition from those who do not; they may be used, for example, in primary health care settings at intake to identify people who are depressed and need further clinical attention. Screening tests are designed to be broadly sensitive, and subsequent highly specific or focused testing is often required to confirm the results. They are also often designed to be brief to facilitate broad classifications.

**screening tests for young children** checklists or assessment protocols that have been developed to detect risk factors associated with certain conditions during infancy and early childhood through the primary school years. Such tests do not provide diagnostic information but instead are used with large numbers of children to identify those who may require further assessment for emotional disturbances, intellectual disabilities, neurological conditions, or other disorders.

**screen magnifier** an adaptation for individuals with visual impairment that enlarges both text and graphical information displayed on a personal computer screen. Screen magnifiers may be built into the operating system provided by the computer manufacturer or purchased as separate products.

**screen memory** in psychoanalytic theory, a memory of a childhood experience, usually trivial in nature, that unconsciously serves the purpose of concealing or screening out, or is a conflation of, an associated experience of a more significant and perhaps traumatic nature. Also called **cover memory**; **replacement memory**.

**screen reader** a software program for individuals with visual impairment that converts both text and graphical information on a personal computer screen to a form that can be spoken through a **SPEECH SYNTHESIZER** or shown on a refreshable **BRAILLE** display.

**screen touch matching** in parapsychology experiments using **ZENER CARDS**, a technique in which the participant indicates his or her guess concerning the symbol on the top card in an inverted deck by pointing to one of five positions corresponding to each of the possible symbols. The card is then placed in this position, still face down, for later checking. Because the person handling the cards never sees them face up, the technique is used in tests of **CLAIRVOYANCE** as opposed to **TELEPATHY**. Also called **screened touch matching**. See also **BASIC TECHNIQUE**.

**scree plot** in **EXPLORATORY FACTOR ANALYSIS**, a graphic that shows (in descending order) the **EIGENVALUES** of the **COMMUNALITY**-adjusted correlation matrix. Researchers examine the plot to identify a "break" in the curve between strong, dominant factors at the top and smaller factors at the bottom: In this way, they can determine which factors

to retain in the analysis. The plot was named by Raymond B. CATTELL, in analogy to the sloping heaps of differently sized rocks (scree) that form at the foot of a mountain.

**script** *n.* **1.** a cognitive schematic structure—a mental road map—containing the basic actions (and their temporal and causal relations) that comprise a complex action. Also called **script schema**. **2.** a structured representation consisting of a sequence of **CONCEPTUAL DEPENDENCIES** grouped together to capture the semantic relationships implicit in everyday human situations. It was designed for the purpose of computer-based story understanding. [created in 1966 by U.S. cognitive and computer scientist Roger C. Schank (1946– ) and U.S. psychologist Robert P. Abelson (1928–2005)] **3.** see **PRESCRIPTION DRUG**. **4.** see **SCRIPT ANALYSIS**.

**script analysis** in **TRANSACTIONAL ANALYSIS**, the examination of the client's unconscious life plan, or **script**, which is based on fantasies, attitudes, and games or plays derived from the individual's early experiences. [developed by Canadian-born U.S. psychiatrist Eric Berne (1910–1970)]

**script theory** **1.** the proposition that discrete affects, such as joy and fear, are prime motivators of behavior and that personality structure and function can be understood in terms of self-defining affective scenes and scripts. [proposed by Silvan S. TOMKINS] **2.** in **TRANSACTIONAL ANALYSIS**, the theory that an individual's approach to social situations follows a sequence that was learned and established early in life.

**scrivener's palsy** an archaic name for **WRITER'S CRAMP**.

**scrupulosity** *n.* overconscientiousness with respect to matters of right and wrong, often manifested as an obsession with moral or religious issues (e.g., preoccupation that one may commit a sin and go to hell) that results in compulsive moral or religious observance and that is highly distressing. Although it is often also called **religious obsessive-compulsive disorder**, it is more typically associated with **OBSESSIVE-COMPULSIVE PERSONALITY DISORDER**.

**scrying** *n.* a **DIVINATION** practice in which a person attempts to see visions of or gain insights about the past, present, or future by staring into fire, smoke, or (more commonly) a shiny, opaque, or reflective medium, such as water, crystals or a crystal ball, glass, or mirrors. See also **CRYSTAL GAZING**.

**SCU** abbreviation for **SPECIAL CARE UNIT**.

**sculpting** *n.* see **FAMILY SCULPTING**.

**S<sup>D</sup>** symbol for **DISCRIMINATIVE STIMULUS**.

**SD** symbol for **STANDARD DEVIATION**.

**SDAT** abbreviation for **SENILE DEMENTIA OF THE ALZHEIMER'S TYPE**.

**S data** see **Q DATA**.

**SDO** abbreviation for **SOCIAL DOMINANCE ORIENTATION**.

**SDS** **1.** abbreviation for **SYMPTOMS OF DEMENTIA SCREENER**. **2.** abbreviation for **ZUNG SELF-RATING DEPRESSION SCALE**.

**SDT** **1.** abbreviation for **SIGNAL DETECTION THEORY**. **2.** abbreviation for **SOCIAL DOMINANCE THEORY**.

**SE** symbol for **STANDARD ERROR**.

**seamstress's cramp** a type of **OCCUPATIONAL CRAMP** affecting the hands and manifested by the inability to perform such manual operations as threading a needle and

using scissors to cut cloth. See also REPETITIVE STRAIN INJURY.

**search** *n.* **1.** a mental process in which a set of memories or other MENTAL REPRESENTATIONS is checked for the presence or absence of a particular target item. For example, one might search one's memory for the name of a former teacher. **2.** a task in which a person is asked to check an array of presented stimuli, or a previously memorized list of stimuli, to determine whether any of a set of target stimuli is in the array or list. See VISUAL SEARCH. See also CONSISTENT MAPPING; VARIED MAPPING. **3.** in problem solving, the process by which the solver attempts to find the correct answer or best solution from among a range of alternatives. See BACKWARD SEARCH; BEST-FIRST SEARCH; EXHAUSTIVE SEARCH; HEURISTIC SEARCH; SELF-TERMINATING SEARCH. **4.** in artificial intelligence, the systematic investigation of states of a problem or game as part of finding a solution. There are multiple approaches to the search, including BACKTRACK SEARCH, DEPTH-FIRST SEARCH, BREADTH-FIRST SEARCH, and A\* SEARCH, and many techniques are available for investigating the relevance of these approaches for different applications.

**search asymmetry** in studies of VISUAL SEARCH, the situation in which a search for the presence of a feature produces one pattern of results but a search for the absence of that feature produces another. For example, searching for a Q in a field of Os (i.e., searching for the "tail" segment in the Q) is relatively easy, but searching for an O in a field of Qs (i.e., searching for the absence of this segment) is difficult.

**search image** a predator's visual or odor-based sense of a prey animal. Predators develop a search image for particular prey through repeated encounters with it, after which they may temporarily specialize in that animal even in the presence of other suitable prey. They may, however, develop new search images after repeated encounters with other prey.

**search of associative memory (SAM)** a GLOBAL MEMORY MODEL used to explain recall and recognition memory in laboratory studies. Information may reside in SHORT-TERM MEMORY, from which it may be stored in LONG-TERM MEMORY or used to search long-term memory. Associations can be formed among items in memory and between items and the context in which they occur. See also DUAL-STORE MODEL OF MEMORY. [described in 1981 by U.S. cognitive psychologist Richard M. Shiffrin (1942– ) and Dutch psychologist Jeroen G. W. Raaijmakers]

**Seashore audiometer** an instrument used to measure threshold sound intensity. [Carl Emil SEASHORE]

**Seashore Measures of Musical Talent** a series of recorded subtests of the components of musical aptitude, including tonal memory, time awareness, rhythm awareness, pitch discrimination, timbre awareness, and loudness discrimination. In these six subtests, various pairs of tones, tonal sequences, or rhythmic patterns are presented and the participant must distinguish each along the particular dimension of interest. For example, in the time awareness subtest, the participant must indicate for each of 50 tone pairs whether the second tone is longer or shorter than the first. Also called **Seashore Measures of Musical Ability**. [originally developed in 1919 and subsequently revised in 1939 by Carl Emil SEASHORE]

**Seashore Rhythm Test** a neuropsychological test in which the participant listens to a recording of pairs of

rhythmic patterns and indicates whether they are the same or different. The test is used by neuropsychologists to measure generalized cerebral function, although it was developed as a subtest of the SEASHORE MEASURES OF MUSICAL TALENT to predict musical talent and knowledge. [Carl Emil SEASHORE]

**seasickness** *n.* MOTION SICKNESS occasioned by sea travel.

**seasonal affective disorder (SAD)** a mood disorder in which there is a predictable occurrence of MAJOR DEPRESSIVE EPISODES, MANIC EPISODES, or both at particular times of the year. The typical pattern is the occurrence of major depressive episodes during the fall or winter months. Also called **seasonal mood disorder**.

**seasonality effect** the observation that individuals with schizophrenia are most likely to have been born during the months of January to April. The hypothesized significance of the season of birth is uncertain. See also VIRAL HYPOTHESIS. [advanced by U.S. psychiatrist E. Fuller Torrey (1937– )]

**seasonal mood disorder** see SEASONAL AFFECTIVE DISORDER.

**seasonal variation** behavioral, psychological, or physiological changes that vary over seasons or that occur in response to seasonal changes. In nonhuman animals and plants, seasonal variation is often controlled by PHOTOPERIODISM. Examples include the increased rate of food intake and body weight gain in hibernating animals in late summer, seasonal migrations, and seasonal changes in gonad size and hormone production in temperate-zone species leading to reproduction at optimal times.

**seat of mind** the proposed place or organ in the body that serves as the physical location of the mind (or, in CARTESIAN DUALISM, the location in the body where mind and body interact; see CONARIUM). In current thinking, the brain is the seat of the mind; historically, other organs have been proposed, such as the heart. Some theories suggest that the mind (or the spirit) is diffused throughout the body.

**Seattle Longitudinal Study** a comprehensive ongoing study of intelligence and cognitive functioning from young adulthood to old age. Using a sequential design (a combination of cross-sectional and longitudinal data-collection methods), the study began in 1956, with testing done in 7-year intervals up to the present. Original testing was based on the Primary Mental Abilities Test (see PRIMARY ABILITY); in subsequent intervals of the study, other tests were added to investigate various influences (e.g., cognitive style, personality, health, lifestyle, family environment, brain changes) on cognitive functioning during the aging process. Approximately 6,000 individuals, ranging in age from 22 to 103, have participated in the study since its inception. [conducted by U.S. psychologists K. Warner Schaie (1928– ) and, since 1983, Sherry L. Willis]

**Seckel syndrome** a familial disorder, now linked to a defect on chromosome 3 (locus 3q22.1–24), marked by MICROCEPHALY, a beaklike nose, prominent eyes, a narrow face, short stature, and intellectual disability. It was originally called **bird-headed dwarfism**. Now also called **Seckel nanism**; **Virchow-Seckel syndrome**. [reported in 1960 by Helmut P. G. Seckel (1900–1960), German physician; the term *bird-headed dwarfism* was introduced by Rudolf Virchow (1821–1902), German pathologist]

**seclusiveness** *n.* the tendency to isolate oneself from social contacts or human relationships. See also **PRIVACY**. —**seclusive** *adj.*

**secondary aging** changes due to biological aging but accelerated by disabilities resulting from disease or produced by extrinsic factors, such as stress, trauma, lifestyle, and the environment. Secondary aging is often distinguished from **PRIMARY AGING**, which is governed by inborn and age-related processes, but the distinction is not a precise one.

**secondary amenorrhea** see **AMENORRHEA**.

**secondary appraisal** in the **COGNITIVE APPRAISAL THEORY** of emotion, one's evaluation of his or her ability to cope with the consequences of an interaction with the environment, which follows a **PRIMARY APPRAISAL**. See also **COPING POTENTIAL**; **CORE RELATIONAL THEMES**. [proposed by Richard S. LAZARUS]

**secondary attention** active attention that requires conscious effort, such as the attention needed to analyze a painting or sculpture. In classical psychology, the term is used to denote a higher kind of attention, developed in humans after **PRIMARY ATTENTION**. Also called **active attention**. See also **VOLUNTARY ATTENTION**.

**secondary auditory cortex (A2)** see **AUDITORY CORTEX**.

**secondary care** health care services provided by medical specialists (e.g., cardiologists, urologists, dermatologists) to whom, typically, patients are referred by a **PRIMARY CARE PROVIDER**. Compare **PRIMARY CARE**; **TERTIARY CARE**.

**secondary cause** a factor that contributes to the onset of symptoms of a disorder but that in itself would not be sufficient to cause the disorder.

**secondary circular reaction** in **PIAGETIAN THEORY**, a repetitive action emerging around 4 to 5 months of age that signifies the infant's aim of making things happen. This forward step occurs during the **SENSORIMOTOR STAGE**. The infant repeats actions, such as rattling the crib, that have yielded results in the past but is not able to coordinate them so as to meet the requirements of a new situation. Usually near the end of the child's 1st year, that coordination ability emerges: In what is called **coordination of secondary circular reactions** (or of **secondary schemes**), the child becomes increasingly adept at the purposeful combination of secondary circular reactions to achieve a desired aim, such as picking up a pillow to get a toy placed underneath, and is able to choose and coordinate previously developed **SCHEMES** that are logically related to the requirements of new situations. See **PRIMARY CIRCULAR REACTION**; **TERTIARY CIRCULAR REACTION**.

**secondary control** behavior that, though not directly controlling, is aimed at producing a sense of control by altering oneself (e.g., one's values, priorities, behavior) so as to be more in line with the environment. Compare **PRIMARY CONTROL**. See **LOCUS OF CONTROL**.

**secondary coping** a stress-management strategy in which a person seeks to adjust his or her hopes, expectations, attributions, and other aspects of the self to achieve a better fit with current events and prevailing conditions. This adaptation of oneself to the environment represents a more internally focused **COPING STRATEGY** that generally is applied when stressors cannot easily be counteracted directly. It includes such mental actions as distraction, positive thinking, **COGNITIVE RESTRUCTURING**, and rethinking

about the stressor or problem in such a way as to facilitate acceptance. Also called **secondary control coping**. Compare **PRIMARY COPING**. [identified in 1982 by Fred M. Rothbaum (1949–2011) and John R. Weisz (1945– ), U.S. clinical and developmental psychologists, and Samuel S. Snyder, U.S. developmental psychologist]

**secondary data** information cited in a study that was not gathered directly by the current investigator but rather was obtained from an earlier study or source. The data may be archived or may be accessed through contact with the original researcher. When consulting or analyzing this information, the investigator should be sensitive to the original research questions and the conditions under which the observations were gathered. Compare **PRIMARY DATA**.

**secondary defense symptoms** a set of defensive measures used by obsessive individuals when their primary defenses against repressed memories no longer offer protection. The secondary defenses usually include obsessional thinking, including **DOUBTING OBSESSION**, and speculations, which may be expressed as phobias, ceremonials, superstitions, or pedantry. [defined by Sigmund FREUD]

**secondary deviance** see **PRIMARY DEVIANCE**.

**secondary disposition** see **PERSONAL DISPOSITION**.

**secondary drive** a learned drive; that is, a drive that is developed through association with or generalization from a **PRIMARY DRIVE**. For example, in an **AVOIDANCE CONDITIONING** experiment in which a rat must go from one compartment into another to escape an electric shock, the secondary drive is fear of the shock and the primary drive with which it is associated is avoidance of pain. Also called **acquired drive**.

**secondary elaboration** in psychoanalysis, the process of altering the memory and description of a dream to make it more coherent and less fragmentary or distorted. See also **DREAM-WORK**.

**secondary emotion** an emotion that is not recognized or manifested universally across cultures or that requires social experience for its construction. For some theorists, **PRIDE** represents a secondary emotion, stemming from the conjunction of a **PRIMARY EMOTION (JOY)** and a favorable public reaction. Other secondary emotions include **ENVY**, **FRUSTRATION**, and **JEALOUSY**.

**secondary environment** an environment that is incidental or marginally important in a person's life and in which interactions with others are comparatively brief and impersonal. An example is a bank or a shop. Compare **PRIMARY ENVIRONMENT**.

**secondary gain** in psychoanalytic theory, the advantage derived from a **NEUROSIS** in addition to the **PRIMARY GAIN** of relief from anxiety or internal conflict. Advantages may include extra attention, sympathy, avoidance of work, and domination of others. Such gains are secondary in that they are derived from others' reactions to the neurosis instead of from causal factors. They often prolong the neurosis and create resistance to therapy. Also called **advantage by illness**.

**secondary group** compared to a **PRIMARY GROUP**, a larger, less intimate, and more goal-focused group typical of more complex societies. Such social groups influence members' attitudes, beliefs, and actions but as a supplement to the influence of small, more interpersonally intensive primary groups. Whereas primary groups, such as families and children's play groups, are the initial socializ-

ing agents, secondary groups, such as work groups, clubs, congregations, associations, and so on, become increasingly influential during adolescence and adulthood.

**secondary gustatory cortex** see TASTE CORTEX.

**secondary hypertension** see HYPERTENSION.

**secondary identification** in psychoanalytic theory, identification with admired figures other than parents.

**secondary memory (SM)** memory that retains a large number of items relatively permanently, in contrast to PRIMARY MEMORY. The term was used in DUAL-STORE MODELS OF MEMORY before being replaced by LONG-TERM MEMORY. [introduced by William JAMES]

**secondary mood disorder** a prolonged, pervasive emotional disturbance that occurs in the context of another disorder and whose symptoms may be caused by that other disorder.

**secondary motivation** motivation that is created by personal or social incentives (e.g., the urge to learn classical music or become a movie star) rather than by primary, physiological needs (e.g., for food). Compare PRIMARY MOTIVATION.

**secondary motor cortex** see MOTOR CORTEX.

**secondary narcissism** in psychoanalytic theory, self-love that develops later in life, after the original infantile PRIMARY NARCISSISM, and occurs when the LIBIDO is withdrawn from OBJECTS and centered on the self.

**secondary need** a need developed through association with or generalization from a PRIMARY NEED. Also called **derived need**.

**secondary oocyte** see OOGENESIS.

**secondary personality** a second discrete identity that repeatedly controls behavior in individuals with DISSOCIATIVE IDENTITY DISORDER. This personality is in sharp contrast to the original, PRIMARY PERSONALITY and generally has a different name as well as dramatically different attitudes, behavior, manner of speaking, and style of dress.

**secondary position** any location of binocular fixation other than the PRIMARY POSITION.

**secondary prevention** intervention for individuals or groups that demonstrate early psychological or physical symptoms, difficulties, or conditions (i.e., subclinical problems), which is intended to prevent the development of more serious dysfunction or illness. Compare PRIMARY PREVENTION; TERTIARY PREVENTION.

**secondary process** in psychoanalytic theory, conscious, rational mental activities under the control of the EGO and the REALITY PRINCIPLE. This mental process, which includes problem solving, judgment, planning, and systematic thinking, enables individuals to meet both the external demands of the environment and the internal demands of their instincts in rational, effective ways. Also called **secondary process thinking**. Compare PRIMARY PROCESS.

**secondary quality** in the philosophy of John LOCKE, a sensible quality of an object that does not exist in the object itself but rather in the experience of the perceiver. Color, for example, is a secondary quality, since the sensation of a particular color can only be produced by an object under certain conditions of light. Compare PRIMARY QUALITY.

**secondary reinforcement 1.** in OPERANT CONDITION-

ING, the process in which a neutral stimulus acquires the ability to influence the future probability of a particular response by virtue of being paired with another stimulus that naturally enhances such probability. That is, the initially neutral stimulus or circumstance functions as effective REINFORCEMENT only after special experience or training. For example, a person teaching a dog to understand the command "sit" might provide a treat and a simultaneous popping noise from a clicker tool each time the dog successfully performs the behavior. Eventually, the clicker noise itself (the **conditioned** or **secondary reinforcer**) can be used alone to maintain the desired behavior, with no treat reward being necessary. **2.** the contingent occurrence of such a stimulus or circumstance after a response. Also called **conditioned reinforcement**. Compare PRIMARY REINFORCEMENT.

**secondary reinforcer** see NATURAL REINFORCER; SECONDARY REINFORCEMENT.

**secondary repression** see REPRESSION PROPER.

**secondary reward** a reward with a learned value that facilitates the retrieval of a PRIMARY REWARD.

**secondary sensory area** any of the regions of the cerebral cortex that receive direct projections from the PRIMARY SENSORY AREA for any sense modality. An example is the SECONDARY SOMATOSENSORY AREA. Also called **nonprimary sensory area**.

**secondary sensory ending** see FLOWER-SPRAY ENDING.

**secondary sex characteristic** see SEX CHARACTERISTIC.

**secondary somatosensory area (S2)** an area of the cerebral cortex, located in the PARIETAL LOBE on the upper bank of the LATERAL SULCUS, that receives direct projections from the PRIMARY SOMATOSENSORY AREA and other regions of the anterior parietal cortex. It has outputs to other parts of the lateral parietal cortex and to motor and premotor areas. See also SOMATOSENSORY AREA.

**secondary spermatocyte** see SPERMATOGENESIS.

**secondary stuttering** dysfluency in speech characterized by uncomfortable awareness of and attempts to modify the dysfluency. Effort, fear, and anxiety are typically conveyed through abnormal or unusual movements of the face, head, or body (e.g., tics, blinking, lip tremor, head jerks, fist clenching). Compare PRIMARY STUTTERING.

**secondary suggestibility** a form of SUGGESTIBILITY that responds to indirect or hidden influence, as contrasted with direct or PRIMARY SUGGESTIBILITY. Some test results have indicated that these forms of suggestibility are only weakly correlated. Also called **indirect suggestibility**. See also TERTIARY SUGGESTIBILITY. [proposed by Hans EYSENCK]

**secondary symptoms 1.** symptoms that are not a direct result of a disorder but are associated with or incidental to those that are (e.g., social avoidance accompanying obsessive-compulsive disorder). **2.** symptoms that appear in the second stage of a disorder or that are derived from an earlier traumatic event, disease process, or disordered condition. **3.** according to Eugen BLEULER, those symptoms of schizophrenia, such as delusions and hallucinations, that are shared with other disorders and therefore not specifically diagnostic of schizophrenia. Bleuler theorized that these symptoms do not stem directly from the disease

but rather begin to operate when the person reacts to some internal or external process. Also called **accessory symptoms**. Compare **FUNDAMENTAL SYMPTOMS**; **PRIMARY SYMPTOMS**.

**secondary task** in ergonomics, a task that is peripheral to a central or **PRIMARY TASK** in a situation requiring **MULTIPLE-TASK PERFORMANCE**. The operator is expected to allocate sufficient cognitive resources to processing the primary task before allocating remaining resources to processing the secondary task.

**secondary task methodology** an experimental design used in the study of attention in which participants perform a primary task as well as possible and a secondary task to the extent possible while maintaining performance on the primary task. Performance on the secondary task provides a profile of the attention required by the primary task at various phases. See also **DUAL-TASK PERFORMANCE**.

**secondary taste cortex** see **TASTE CORTEX**.

**secondary territory 1.** a space routinely used by a person or group who does not control or use it exclusively (e.g., the local tennis court). Habitues may harbor feelings of possession, but they will acknowledge others' claims. Compare **PRIMARY TERRITORY**; **PUBLIC TERRITORY**. See also **PROXEMICS**. **2.** in animal behavior, see **HOME RANGE**.

**secondary traumatization 1.** see **INTERGENERATIONAL TRAUMA**. [term introduced in 1985 by U.S. psychiatrist Robert A. Rosenheck and Indian-born U.S. psychiatrist Pramila M. Nathan] **2.** see **VICARIOUS TRAUMATIZATION**.

**secondary visual cortex (V2)** the area immediately surrounding the primary visual cortex (see **STRIATE CORTEX**) in the **OCCIPITAL LOBES**, receiving signals from it secondarily for analysis and further discrimination of visual input in terms of motion, shape (particularly complex shapes), and position. See also **PRESTRIATE CORTEX**; **V2**.

**secondary visual system** the visual pathway that lies outside of, and is phylogenetically older than, the **PRIMARY VISUAL SYSTEM**. Retinal input travels directly to the **SUPERIOR COLLICULUS** and then to visual nuclei in the thalamus other than the lateral geniculate nucleus (i.e., the **PULVINAR** and **LATERAL POSTERIOR NUCLEUS**) before terminating in the **PRESTRIATE CORTEX**. The vision supported by the secondary visual system is relatively poor for the detection of form but allows localization and detection of movement. It functions relatively well in the newborn. See also **BLIND-SIGHT**.

**second cranial nerve** see **OPTIC NERVE**.

**second-degree relative** a grandparent, aunt, uncle, or cousin. The closeness of a relative with a particular hereditary disease has implications in assessing the risk for a particular person. Compare **FIRST-DEGREE RELATIVE**.

**second-generation antipsychotic** see **ANTIPSYCHOTIC**; **ATYPICAL ANTIPSYCHOTIC**.

**second messenger** an ion or molecule inside a cell whose concentration increases or decreases in response to stimulation of a cell **RECEPTOR** by an agonist (e.g., a neurotransmitter, hormone, or drug). The second messenger acts to relay and amplify the signal from the agonist (the first messenger) by triggering a range of cellular activities. For example, receptors for the catecholamine neurotransmitters epinephrine and norepinephrine are coupled to **G PROTEINS**, whose activation in postsynaptic neurons affects levels of second messengers that act to open or close cer-

tain **ION CHANNELS**. Second messengers include **CYCLIC AMP**, **CYCLIC GMP**, **IP<sub>3</sub>** (see **INOSITOL PHOSPHATES**), and calcium ions.

**second moment** see **MOMENT**.

**second-order conditioning** in **CLASSICAL CONDITIONING**, the establishment of a conditioned response as a result of pairing a neutral stimulus with a conditioned stimulus that gained its effectiveness by being paired with an unconditioned stimulus. See **HIGHER ORDER CONDITIONING**.

**second-order factor** a latent construct that emerges from a further **FACTOR ANALYSIS** (i.e., a **second-order factor analysis**) of the primary dimensions derived from correlations among a set of items or variables. The higher order dimensions so derived are held to generate the **FIRST-ORDER FACTORS** that in turn generate observed responses at the level of the individual item or scale.

**second-order interaction** in **ANALYSIS OF VARIANCE** or **REGRESSION ANALYSIS**, an effect in which three independent variables combine to have a nonadditive influence on a dependent variable. See **HIGHER ORDER INTERACTION**.

**second-order language** see **METALANGUAGE**.

**second-order neuron** the second neuron in any neural pathway. In the somatosensory system, for example, a second-order neuron receives input from a **FIRST-ORDER NEURON** in the spinal cord and transmits it to the thalamus.

**second-order schedule** a **SCHEDULE OF REINFORCEMENT** in which the units counted are not single responses but completions of a particular reinforcement schedule (the **unit schedule**). For example, in a second-order fixed-ratio 5 of fixed-interval 30-second schedule [**FR 5 (FI 30 seconds)**], reinforcement is delivered only after five successive **FI 30-second** schedules have been completed. Often, a brief stimulus of some sort is presented on completion of each unit schedule.

**second-person perspective** the point of view of one person aware of another's subjectivity, as in an **I-THOU** relationship. Compare **FIRST-PERSON PERSPECTIVE**; **THIRD-PERSON PERSPECTIVE**.

**second quartile** see **QUARTILE**.

**second-rank symptoms** common manifestations of schizophrenia that may be seen in other disorders as well. They include **RESTRICTED AFFECT**, confusion or bewilderment, and the sudden onset of paranoid, persecutory, and other types of delusions. Although not specifically indicative of schizophrenia, second-rank symptoms nonetheless may be useful for differential diagnosis in certain situations. They are the complement of **FIRST-RANK SYMPTOMS**. [part of a diagnostic classification system for schizophrenia proposed in 1938 by German psychiatrist Kurt Schneider (1887–1967)]

**second sight** an alleged paranormal faculty that enables some individuals to see events that are remote in time or space. See **CLAIRVOYANCE**; **PRECOGNITION**.

**second sleep** see **SEGMENTED SLEEP**.

**secretin** *n.* a hormone produced by the upper small intestine in response to the arrival of hydrochloric acid from the stomach. Secretin stimulates secretion of pancreatic juice by the pancreas and of bile by the liver. Its function was discovered in 1902 by British physiologists William Maddock Bayliss (1860–1924) and Ernest Starling (1866–



1927), and it was the first substance demonstrated to be a hormone.

**secretion** *n.* **1.** the synthesis and discharge of specific substances from cells (which may be organized in glands) into other parts of the body. The substance produced may be released directly into the blood (an ENDOCRINE secretion) or through a duct (see EXOCRINE GLAND). **2.** the substance discharged by this process. —**secretory** *adj.*

**SECs** abbreviation for STIMULUS EVALUATION CHECKS.

**sect** *n.* a group whose members adhere to a distinctive set of doctrines, beliefs, and rituals. The term is often applied to a dissenting faction that breaks away from a larger religious, political, or other social organization. —**sectarian** *adj.*

**section** *n.* **1.** a thin slice of tissue (e.g., brain tissue) that can be examined microscopically. See CROSS SECTION. **2.** an image of a body part in any plane obtained by such techniques as COMPUTED TOMOGRAPHY or MAGNETIC RESONANCE IMAGING.

**sectioning** *n.* the educational strategy of offering the same course, typically taught by the same teacher, several times during the day. This enables many students to take the same course but keeps the teacher–pupil ratio low.

**Section 504 plan** written documentation of the accommodations needed for any student with disabilities so that his or her individual educational needs are met as adequately as the needs of students without disabilities, in compliance with U.S. legislation Section 504 of the Rehabilitation Act of 1973. Students are in a general education setting, and accommodations include educational interventions, aids, and services. See also INDIVIDUALIZED EDUCATION PROGRAM.

**secular** *adj.* civil, temporal, and free from religious influence or affiliation. A secular society, for example, is one in which various religions may exist but in which the laws and governing institutions have no basis in religious doctrine. —**secularism** *n.* —**secularist** *n.* —**secularize** *vb.*

**secular humanism** a broad perspective, increasingly influential in Western countries since the mid-20th century, that can be characterized by some or all of the following: (a) a belief in seeking solutions to human problems through science and rational thought rather than through religion or traditional forms of morality; (b) a focus on this world rather than on a putative afterlife; (c) an emphasis on an intrinsic human potential for growth rather than on human limitation or sinfulness; (d) a search for new truth and a belief in free thought, free speech, and free inquiry as the means to find it; (e) an acceptance of cultural and human diversity, including sexual diversity; and (f) an acceptance of some degree of RELATIVISM in ethics, usually accompanied by some type of UTILITARIANISM in practice.

**secure attachment** **1.** in the STRANGE SITUATION, the positive parent–child relationship, in which the child displays confidence when the parent is present, shows mild distress when the parent leaves, and quickly reestablishes contact when the parent returns. Compare INSECURE ATTACHMENT. **2.** an adult attachment style that combines a positive INTERNAL WORKING MODEL OF ATTACHMENT of oneself, characterized by a view of oneself as worthy of love, and a positive internal working model of attachment of others, characterized by the view that others are generally accepting and responsive. Compare DISMISSIVE ATTACHMENT; FEARFUL ATTACHMENT; PREOCCUPIED ATTACHMENT.

**secure base** a place of safety, represented by an attachment figure (e.g., a parent), that an infant uses as a base from which to explore a novel environment. The infant often returns or looks back to the parent before continuing to explore. Also called **secure base phenomenon**.

**secure treatment setting** a locked residential setting providing safety and treatment services for adolescent or adult offenders, usually felons, with intellectual or developmental disabilities.

**security** *n.* a sense of safety, confidence, and freedom from apprehension. In psychology, security is believed to be engendered by such factors as warm, accepting parents and friends; development of age-appropriate skills and abilities; and experiences that build a stable sense of self. The development of security in the psychotherapeutic context (most often referred to as TRUST) is seen as a mediating goal that encourages open exploration of emotional and behavioral issues and is considered to be part of a strong and healthy THERAPIST–PATIENT RELATIONSHIP.

**security blanket** see TRANSITIONAL OBJECT.

**security operations** in the approach of Harry Stack SULLIVAN, a variety of interpersonal defensive measures, such as arrogance, boredom, or anger, that are used as a protection against anxiety or loss of self-esteem.

**security theory** the proposition that infants and young children need to develop a secure dependence on their parents before they can explore unfamiliar situations. Lack of this SECURE BASE hampers a child from exploration and therefore from acquiring new skills. Mary D. Salter AINSWORTH used this theory as the initial framework for her studies on infant attachment. [proposed by William Emet BLATZ]

**SED** abbreviation for serious EMOTIONAL DISTURBANCE.

**sedative** **1.** *n.* a drug that has a calming effect and therefore relieves anxiety, agitation, or behavioral excitement by depressing the central nervous system. The degree of sedation depends on the agent, the size of the dose, the method of administration, and the condition of the patient. A drug that sedates in small doses may induce sleep in larger doses and may be used as a HYPNOTIC; such drugs are commonly known as **sedative–hypnotics**. BENZODIAZEPINES are commonly used as sedatives. **2.** *adj.* producing sedation.

**sedative, hypnotic, and anxiolytic drug** any of a group of CNS DEPRESSANTS that have been developed for therapeutic use because of their calming effect (i.e., sedative) and ability to induce sleep (i.e., hypnotic) and reduce anxiety (i.e., anxiolytic). They include the BARBITURATES, MEPROBAMATE, and the BENZODIAZEPINES. At low doses, these drugs are prescribed for daytime use to reduce anxiety; at higher doses, many of the same drugs are prescribed as sleeping pills. Although efficacious when used sparingly, over the long term all induce marked tolerance, and cessation of use can precipitate potentially life-threatening withdrawal phenomena. Acute abuse can yield dangerous intoxication effects, and chronic abuse can cause a range of serious, irreversible conditions.

**sedative, hypnotic, or anxiolytic abuse** in DSM–IV–TR, a pattern of use of sedative, hypnotic, or anxiolytic drugs marked by recurrent significant adverse consequences related to the repeated ingestion of these substances. This diagnosis is preempted by the diagnosis of SEDATIVE, HYPNOTIC, OR ANXIOLYTIC DEPENDENCE: If the criteria for abuse and dependence are both met, only the lat-

ter diagnosis is given. Both have now been subsumed in *DSM-5* under **sedative, hypnotic, or anxiolytic use disorder** and are no longer considered distinct diagnoses.

**sedative, hypnotic, or anxiolytic dependence** in *DSM-IV-TR*, a pattern of repeated or compulsive use of sedative, hypnotic, or anxiolytic drugs despite significant behavioral, physiological, and psychosocial problems associated with their use and possible tolerance and withdrawal symptoms if use is suspended (see *SEDATIVE, HYPNOTIC, OR ANXIOLYTIC WITHDRAWAL*). The separate diagnoses for dependence on and abuse of these substances have been subsumed in *DSM-5* under **sedative, hypnotic, or anxiolytic use disorder** and are no longer considered distinct entities.

**sedative-, hypnotic-, or anxiolytic-induced persisting amnesic disorder** a disturbance in memory due to the persisting effects of sedative, hypnotic, or anxiolytic drugs. The ability to learn new information or to recall previously learned information is impaired enough to interfere markedly with social or occupational functioning and to represent a significant decline from a previous level of functioning. Unlike those diagnosed with *ALCOHOL-INDUCED PERSISTING AMNESIC DISORDER*, people diagnosed with this disorder can recover memory functioning.

**sedative, hypnotic, or anxiolytic intoxication** in *DSM-IV-TR* and *DSM-5*, a reversible syndrome specific to the recent ingestion of sedative, hypnotic, or anxiolytic drugs. It includes clinically significant behavioral or psychological changes (e.g., inappropriate sexual or aggressive behavior, mood lability, impaired judgment, impaired social or occupational functioning), as well as one or more signs of physiological involvement (e.g., slurred speech, an unsteady gait, involuntary eye movements, memory or attentional problems, incoordination, stupor or coma).

**sedative, hypnotic, or anxiolytic withdrawal** in *DSM-IV-TR* and *DSM-5*, a characteristic withdrawal syndrome, potentially life threatening, that develops after cessation of (or reduction in) prolonged, heavy consumption of sedative, hypnotic, or anxiolytic drugs. Symptoms may include autonomic hyperactivity; increased hand tremor; insomnia; nausea or vomiting; transient visual, tactile, or auditory hallucinations or illusions; psychomotor agitation; anxiety; either a transient worsening (rebound) of the condition that prompted treatment or a recurrence of that condition; and tonic-clonic seizures. Risks of physiological dependence and withdrawal are present with long-term use of all benzodiazepines and similarly acting anxiolytics. Short-acting benzodiazepines pose particular withdrawal risks, and patients taking high doses of short-acting agents must be carefully withdrawn over an extended period to avoid adverse outcomes. See also *SUBSTANCE WITHDRAWAL*.

**sedative, hypnotic, or anxiolytic withdrawal delirium** in *DSM-IV-TR* and *DSM-5*, a reversible syndrome that develops over a short period of time (usually hours to days) following cessation of prolonged, heavy consumption of sedative, hypnotic, or anxiolytic drugs. It involves a disturbance of consciousness (e.g., reduced ability to focus, sustain, or shift attention) accompanied by changes in cognition (e.g., memory deficit, disorientation, language disturbance) in excess of those usually associated with withdrawal from these substances.

**sedative occupation** an activity or task, such as knitting, that has a soothing or sedating effect because of its repetitious nature. Compare *STIMULATING OCCUPATION*.

**seduction** *n.* **1.** the inducement of a person to participate in sexual intercourse, without the use of force. **2.** more generally, the act or process of attracting or alluring. —**seduce** *vb.*

**SEE** symbol for STANDARD ERROR OF ESTIMATE.

**SEEKING system** collectively, those parts of the brain (e.g., nucleus accumbens, amygdala) within or connected to the MESOLIMBIC SYSTEM and MESOCORTICAL SYSTEM that are associated with goal-directed behaviors and are strongly influenced by DOPAMINE. [coined by Estonian-born U.S. physiological psychologist Jaak Panksepp (1943– )]

**segment** *n.* in linguistics, a consonantal or vowel PHONEME occurring as part of a consecutive sequence of these. See *SUPRASEGMENTAL*. —**segmental** *adj.*

**segmental reflex** see *SPINAL REFLEX*.

**segmentation** *n.* **1.** division of a whole into parts. **2.** in linguistics, the process through which a hearer separates speech into a sequence of identifiable words and phonemes. **3.** the division of an animal's body into a number of similar compartments (segments or metameres). Metameric segmentation is most apparent in annelid worms, in which the arrangement of muscles, blood vessels, nerves, and so on recurs in each segment. **4.** see *CLEAVAGE*.

**segmented regression** see *PIECEWISE REGRESSION*.

**segmented sleep** a pattern in which two periods of nighttime sleep are separated by an extended period of wakefulness. It has been suggested that this pattern, called **first sleep** and **second sleep** and often involving a third period of light sleep during the day, may have been the norm for human beings before industrialization and the advent of electric lighting. See *POLYPHASIC SLEEP*. [described by U.S. historian A. Roger Ekirch in 2001]

**segregated model** in evaluation research, an administrative relationship, used in *FORMATIVE EVALUATION*, between the program director, the production unit, and the evaluation unit as three distinct entities. In this model, the production unit and the evaluation unit have equal importance and share improved access to the program director. Compare *INTEGRATED MODEL*.

**segregation** *n.* **1.** the separation or isolation of people (e.g., ethnic groups) or other entities (e.g., mental processes) so that there is a minimum of interaction between them. **2.** in genetics, the separation of the paired ALLELES of any particular gene during cell division (see *MEIOSIS*), leading to sex-cell formation. **3.** in genetics, separation of the sister CHROMATIDS of each chromosome during normal cell division (*MITOSIS*).

**segregation analysis** a statistical method to determine if particular traits show *MENDELIAN INHERITANCE*.

**seismic communication** the use of the ground or other substrate by some animals to transmit signals between individuals. Rabbits, some frogs, and kangaroo rats thump on the ground with their feet in distinctive patterns that provide cues for individual recognition and may serve to attract mates or repel intruders. Ongoing research by U.S. biologist Caitlin O'Connell-Rodwell (1965– ) has established that elephants use seismic methods for long-distance communication, including estrus calls.

**seizure** *n.* a discrete episode of uncontrolled, excessive electrical discharge of neurons in the brain. The resulting clinical symptoms vary based on the type and location of the seizure. See *EPILEPSY*.

**seizure disorder** see EPILEPSY.

**selected group** a sample explicitly chosen with respect to specific criteria related to the purpose of a research study. For example, in a study of attitudes of older adults, a researcher might choose a sample of citizens ages 65 and over from four geographic regions in the United States. Also called **selected sample**.

**selection** *n.* **1.** the differential survival of some individuals and their offspring compared with others, causing certain physical or behavioral traits to be favored in subsequent generations. The general process is known as NATURAL SELECTION, with components of INDIVIDUAL SELECTION and KIN SELECTION. **2.** the process of choosing an item (e.g., an individual, an object, a measurement) from a larger universe of units for a purpose, such as study, testing, classifying, or working (hiring employees).

**selection bias** see SAMPLING BIAS.

**selection invariance** in choosing among applicants for employment, admission to college, or other purposes, the property of a selection procedure such that it is equally efficient (i.e., has a similar numbers of errors) for all subgroups of applicants (e.g., ethnic or income groups). Selection invariance is the empirically testable assumption that there is equal SENSITIVITY and equal SPECIFICITY across all groups. Compare MEASUREMENT INVARIANCE.

**selectionist brain theory** see NEURAL DARWINISM.

**selection model** a two-stage REGRESSION ANALYSIS used to estimate PARAMETERS and STANDARD ERRORS in an unbiased way when scores for one aspect of the sample may be affected by a nonrandom selection process. An example of data that could be appropriate for this method is women's salaries: Some aspects of the data could be modeled using standard regression methods, but the preponderance of zero salaries (reflecting a decision by some women not to work) would also need to be incorporated into the analysis. See also TRUNCATED DISTRIBUTION.

**selection pressure** a measure of the influence that NATURAL SELECTION has on the survival of some genotypes over others and thus the degree to which it alters the genetic composition of a population over successive generations.

**selection ratio** the proportion of those eligible to be selected for a purpose (e.g., inclusion in research) that actually are selected. In PERSONNEL SELECTION, for example, it is the number of applicants who are hired to perform a job in an organization divided by the total number of applicants. The lower the selection ratio, the more competitive the hiring situation will be and the more useful (all other factors being held constant) any given PREDICTOR VARIABLE will be in making selection decisions.

**selection research** the use of empirical investigation to determine the reliability, validity, utility, and fairness of procedures used in PERSONNEL SELECTION and to maximize the effectiveness of these procedures.

**selection test** any physical or mental test to assess an individual's suitability for a task. Such tests are usually used to screen and select people for occupational and educational placement. See also EMPLOYMENT TEST.

**selective action** an action whereby a reinforcer may have a greater effect on some responses than on others (i.e., its effects are selective).

**selective adaptation** the observation that perceptual

adaptation can occur in response to certain stimulus qualities while being unaffected by others. For example, color adaptation can take place independently of motion adaptation.

**selective agent** a factor in the environment that exerts SELECTION PRESSURE and brings about NATURAL SELECTION.

**selective amnesia** the forgetting of particular issues, people, or events that is too extensive to be explained by normal forgetfulness and that is posited to be organized according to emotional, rather than temporal, parameters. The selectivity appears to be of benefit to or convenient for the person who cannot remember. See also DISSOCIATIVE AMNESIA.

**selective attention** concentration on certain stimuli in the environment and not on others, enabling important stimuli to be distinguished from peripheral or incidental ones. Selective attention is typically measured by instructing participants to attend to some sources of information but to ignore others at the same time and then determining their effectiveness in doing this. Also called **controlled attention**; **directed attention**; **executive attention**. See also FOCAL ATTENTION.

**selective breeding** the breeding of nonhuman animals with known genetic characteristics to produce a particular kind of animal or to produce uniform animals with identical genetic characteristics.

**selective cell death** an early developmental process in which neurons that are not activated by sensory and motor experience die.

**selective dropout** the nonrandom loss of participants from a study that occurs when an identified feature of the study design (e.g., topic studied, number of tasks) interacts with respondent characteristics (e.g., depression, education level). See ATTRITION.

**selective estrogen receptor modulator (SERM)** see ANTIESTROGEN.

**selective inattention** **1.** unmindful absence or failure of attention to particular physical or emotional stimuli. **2.** a perceptual defense in which anxiety-provoking or threatening experiences are ignored or forgotten. [defined by Harry Stack SULLIVAN]

**selective information processing** the processing of attitude-relevant information in a biased manner. Although a number of potential biases are possible, it has traditionally been assumed that when this type of processing occurs, the bias will be toward confirming the attitude. Bias can occur at one or more of the following stages of processing: exposure, attention, encoding, perception, and retrieval. See also BIASED ELABORATION; BIASING FACTOR; DEFENSIVE PROCESSING.

**selective learning** learning to make only one of several possible responses or learning about one stimulus when several stimuli are available. A particular response or stimulus could have a selective advantage due to biological PREPAREDNESS, previous experience, or salience in a given situation. See also KAMIN EFFECT; OVERSHADOWING.

**selective listening** attending to only one stream of auditory stimuli when two or more streams are presented.

**selective mutism** in DSM-IV-TR and DSM-5, a rare disorder, most commonly but not exclusively found in young children, characterized by a persistent failure to speak in certain social situations (e.g., at school) despite

the ability to speak and to understand spoken language. Age of onset is usually before 5 years, and the failure to speak lasts at least 1 month (not counting the first month at school, when many children are shy about talking). Generally, these individuals function normally in other ways, although some may have additional disabilities. Most learn age-appropriate skills and academic subjects. Currently, selective mutism is thought to be related to severe anxiety and SOCIAL PHOBIA, and it is classified as an anxiety disorder in *DSM-5*, but the exact cause is unknown. It was formerly called **elective mutism**.

**selective optimization with compensation** a process used in **SUCCESSFUL AGING** to adapt to biological and psychological deficits associated with aging. The process involves emphasizing and enhancing those capacities affected only minimally by aging (selective optimization) and developing new means of maintaining functioning in those areas that are significantly affected (compensation). [described by German psychologists Paul B. **BALTES** and Margret M. Baltes (1939–1999)]

**selective perception** the process in which people choose to attend to one or a few stimuli from the myriad array of stimuli presented to the senses at any one time. See also **MOTIVATIONAL SELECTIVITY**; **PERCEPTUAL SET**.

**selective permeability** the property of a membrane that allows some substances to pass through but not others.

**selective placement** see **JOB PLACEMENT**.

**selective potentiation** the enhancement of the sensitivity or activity of certain **NEURAL CIRCUITS**.

**selective rearing** an experimental paradigm in which a nonhuman animal is raised from birth or from the time of eye opening under conditions that restrict its visual experience. This induces long-term changes in the structure and function of its visual system. For example, **MONOCULAR REARING** reduces the number of neurons in the **STRIATE CORTEX** that are sensitive to binocular stimulation and alters the structure of the **OCULAR DOMINANCE COLUMNS**; rearing with prism goggles that restrict the orientations that are visible can alter the orientation selectivity of neurons and the **ORIENTATION COLUMNS** in the striate cortex.

**selective reminding test** any memory test in which the participant is given the answer when it cannot be remembered so that he or she is more likely to answer correctly on subsequent trials. For instance, if the word *pencil* is presented on a list-learning task and the participant is unable to recall it, the word would then be presented along with other words not recalled. The best known of the clinical selective reminding tests is the **Buschke–Fuld Selective Reminding Test**.

**selective response** a response that has been differentiated from a group of possible alternative responses.

**selective retention** variation between individuals in the capacity to remember with respect to the vividness, accuracy, quantity, and specific contents of memory. This selectivity is usually determined by such factors as interest, experience, motivation, and emotional arousal.

**selective serotonin reuptake inhibitor** see **SSRI**.

**selective silence** in psychotherapy, a prolonged silence imposed by the therapist to generate tension that may encourage the client to speak, thus beginning or resuming communication in a session.

**selective value** the relative importance of any factor in determining the evolution of organs, traits, or species through **NATURAL SELECTION**. See also **SELECTIVE AGENT**.

**selegiline** *n.* a drug used orally as an adjunct in the treatment of Parkinson's disease and transdermally in the treatment of depression. At low doses, it selectively inhibits the enzyme **MONOAMINE OXIDASE B (MAO-B)**—which degrades the neurotransmitter dopamine—and thereby increases levels of dopamine in the brain. Because selegiline is an irreversible **MONOAMINE OXIDASE INHIBITOR (MAOI)**, and at higher doses it inhibits both **MAO-A** and **MAO-B**, great care must be taken not to exceed the therapeutic dosage in order to avoid the severe adverse effects of nonselective, irreversible MAOIs. Adverse drug interactions have been observed with commonly prescribed antidepressants, and thus, concurrent administration of selegiline and these should be avoided. Also called **deprenyl**. U.S. trade names: **Eldepryl**; **EMSAM**.

**self** *n.* the totality of the individual, consisting of all characteristic attributes, conscious and unconscious, mental and physical. Apart from its basic reference to personal **IDENTITY**, being, and experience, the term's use in psychology is wide-ranging. According to William **JAMES**, self can refer either to the person as the target of appraisal (i.e., one introspectively evaluates how one is doing) or to the person as the source of **AGENCY** (i.e., one attributes the source of regulation of perception, thought, and behavior to one's body or mind). Carl **JUNG** maintained that the self gradually develops by a process of **INDIVIDUATION**, which is not complete until late maturity is reached. Alfred **ADLER** identified the self with the individual's **LIFESTYLE**, the manner in which he or she seeks fulfillment. Karen D. **HORNEY** held that one's **REAL SELF**, as opposed to one's idealized self-image, consists of one's unique capacities for growth and development. Gordon W. **ALLPORT** substituted the word **PROPRIUM** for self and conceived of it as the essence of the individual, consisting of a gradually developing body sense, identity, self-estimate, and set of personal values, attitudes, and intentions. Austrian-born U.S. psychoanalyst Heinz Kohut (1913–1981) used the term to denote the sense of a coherent, stable (yet dynamic) experience of one's individuality, continuity in time and space, autonomy, efficacy, motivation, values, and desires; he believed that this sense emerges through healthy narcissistic development empathically supported by the significant figures in one's early life and that, conversely, narcissistic developmental failure leads to a fragile or incoherent sense of self. See **SELF PSYCHOLOGY**. See also **FALSE SELF**; **MULTIPLE SELVES**; **PHENOMENAL SELF**; **SENSE OF SELF**; **TRUE SELF**.

**self-abasement** *n.* 1. the act of degrading or demeaning oneself. 2. extreme submission to the will of another person. Also called **self-debasement**.

**self-abuse** *n.* a euphemism for **MASTURBATION**. The term apparently evolved from an attempt by certain 18th-century religious and medical writers to identify masturbation as “the sin of Onan” (see **ONANISM**) and to substantiate unscientific claims that a number of disorders (e.g., blindness, intellectual disability) were produced by masturbation.

**self-acceptance** *n.* a relatively objective sense or recognition of one's abilities and achievements, together with acknowledgment and acceptance of one's limitations. Self-acceptance is often viewed as a major component of mental health.

**self-activity** *n.* the performance of actions that have been determined by oneself, with or without dependence on outside activators.

**self-actualization** *n.* the complete realization of that of which one is capable, involving maximum development of abilities and full involvement in and appreciation for life, particularly as manifest in PEAK EXPERIENCES. The term is associated especially with Abraham MASLOW, who viewed the process of striving toward full potential as fundamental yet obtainable only after the basic needs of physical survival, safety, love and belongingness, and esteem are fulfilled. Also called **self-realization**.

**self-administration** *n.* **1.** among humans, the taking of a medication (e.g., injecting insulin) or an abused substance (e.g., injecting heroin, inhaling cannabis) by the individual himself or herself. **2.** in nonhuman animal research, a procedure used to study the rewarding effects of drugs. Animals (usually primates or rodents) are required to perform an OPERANT RESPONSE (e.g., lever pressing) to receive a drug infusion, which is delivered via an intravenous catheter or through a CANNULA implanted in the brain. Also called **drug self-administration**.

**self-advocacy** *n.* the process by which people make their own choices and exercise their rights in a self-determined manner. For people with developmental and other disabilities, for example, self-advocacy might entail making informed decisions about what services to accept, reject, or insist be altered.

**self-affirmation** *n.* **1.** any behavior that confirms the moral and adaptive adequacy of the self. See SELF-AFFIRMATION THEORY. **2.** in psychotherapy, a positive statement or set of such statements about the self that a person is required to repeat on a regular basis, often as part of a treatment for depression, negative thinking, or low self-esteem. **3.** in performance or competitive situations, any thought about oneself that is believable and vivid and that reinforces positive characteristics, abilities, or skills.

**self-affirmation theory** the concept that people are motivated to maintain views of themselves as well adapted, moral, competent, stable, and able to control important outcomes. When some aspect of this self-view is challenged, people experience psychological discomfort. They may attempt to reduce this discomfort by directly resolving the inconsistency between the new information and the self, by affirming some other aspect of the self, or both. Self-affirmation theory has been used as an alternative to COGNITIVE DISSONANCE THEORY for explaining some phenomena. See also DISSONANCE REDUCTION; SELF-CONSISTENCY PERSPECTIVE. [originally proposed by U.S. psychologist Claude M. Steele (1946– )]

**self-alienation** *n.* estrangement from oneself, typically accompanied by significant emotional distancing. The self-alienated individual is frequently unaware of or largely unable to describe his or her own intrapsychic processes.

**self-analysis** *n.* **1.** generally, the investigation or exploration of the self for the purpose of better understanding personal thoughts, emotions, and behavior. Self-analysis occurs consciously and nonconsciously in many contexts of daily life, and with assistance from the therapist, it is a crucial process within most forms of psychotherapy. **2.** an attempt to apply the principles of PSYCHOANALYSIS to a study of one's own drives, feelings, and behavior. Early in his career, Sigmund FREUD proposed self-analysis as part of the preparation of an analyst, and much of his early psy-

choanalytic theory was based on his own self-analysis as described in *The Interpretation of Dreams* (1900). He later dropped the idea in favor of a TRAINING ANALYSIS. Nonetheless, most psychoanalysts conduct an ongoing self-analysis to monitor for COUNTERTRANSFERENCE and blind spots as they work with patients. —**self-analytic** *adj.*

**self-appraisal** *n.* see SELF-CONCEPT.

**self as agent** **1.** the self that has goals, plans, and control over voluntary actions. Gordon W. ALLPORT and others considered this term to be similar in meaning to the “I” in the thought of William JAMES (see NOMINATIVE SELF). See also SELF AS OBSERVER. **2.** the aspect of the self that has agency and plays a role in a psychic process. In this sense, the term is closer to James’s “me” (see EMPIRICAL SELF).

**self as known** the self that is known through reflection (see EMPIRICAL SELF). In the thought of William JAMES, it contrasts with the SELF AS OBSERVER or knower and is synonymous with the “me.”

**self as observer** the self that has access to conscious experiences and knowledge, including knowledge of the self. In the thought of William JAMES, it contrasts with the SELF AS KNOWN and is synonymous with the “I” (see NOMINATIVE SELF). See also SELF AS AGENT.

**self-assertion** *n.* the act of putting forward one's opinions or of taking actions that express one's needs, rights, or wishes. Self-assertion is often seen as a goal of treatment and in some cases is specifically targeted by structured group treatments. —**self-assertive** *adj.*

**self-assessment** *n.* see SELF-CONCEPT.

**self-assessment motive** the desire to gain accurate information about the self. It leads people to seek highly diagnostic feedback (see DIAGNOSTICITY) and to reject flattery or other bias. Also called **accuracy motive**; **appraisal motive**. Compare CONSISTENCY MOTIVE; SELF-ENHANCEMENT MOTIVE. See also SELF-VERIFICATION MOTIVE.

**self-awareness** *n.* self-focused attention or knowledge. There has been a continuing controversy over whether nonhuman animals have self-awareness. Evidence of this in animals most often is determined by whether an individual can use a mirror to groom an otherwise unseen spot on its own forehead. A few chimpanzees, gorillas, and orangutans have passed this test. See also SELF-FOCUS.

**self-awareness theory** any theory of the consequences of focusing attention on the self. Distinctions are sometimes made between subjective self-awareness, arising directly from the observation and experience of oneself as the source of perception and behavior, and objective self-awareness, arising from comparison between the self and (a) the behaviors, attitudes, and traits of others or (b) some perceived standard for social correctness in any one of these areas.

**self-care** *n.* activities required for personal care, such as eating, dressing, or grooming, that can be managed by an individual without the assistance of others.

**self-care children** see LATCHKEY CHILDREN.

**self-categorization theory** an explanation of the cognitive processes that align people's self-conceptions with the groups to which they belong. According to the theory, perceivers not only classify others into SOCIAL CATEGORIES but also recognize their own membership in such categories and apply STEREOTYPES pertaining to those categories to themselves. See also AUTOSTEREOTYPING. [developed by

British psychologist John C. Turner (1947–2011) and his colleagues]

**self-censure** *n.* an individual's conscious self-blame, condemnation, or guilt in judging his or her own behavior to be inconsistent with personal values or standards of moral conduct.

**self-clarity** *n.* a certainty of identity and a confidence that one possesses certain traits and attributes. Individuals with low SELF-ESTEEM are more likely to lack self-clarity than are individuals with high self-esteem.

**self-compassion** *n.* a construct derived from Buddhist thought and entailing a noncritical stance toward one's inadequacies and failures. It has been suggested that if SELF-CRITICISM can lead to negative emotions, self-compassion may promote well-being by protecting one from the negative emotional implications of one's perceived failings.

**self-completion theory** the theory that many behaviors are performed to claim desired identities, so that by behaving in a certain way one is symbolically proving oneself to be a certain kind of person. Insecurity about being the sort of person one wants to be is often the reason for engaging in such self-completing acts. For example, a person who takes pride in being very fit and active may respond to the first signs of illness or exhaustion by increasing, rather than reducing, his or her activities.

**self-complexity** *n.* the number of separate, unrelated aspects of the SELF-CONCEPT. For instance, a woman might think of herself in terms of her various social roles (lawyer, friend, mother), her relationships (colleague, competitor, nurturer), her activities (running, playing tennis, writing), her superordinate traits (hard working, creative), her goals (career success), and so forth. People low in self-complexity have few distinct facets of the self-concept, so they react more extremely to positive and negative events relevant to one of those aspects. People high in self-complexity have multiple distinct self-aspects, so they react less extremely to such events.

**self-concept** *n.* one's description and evaluation of one-self, including psychological and physical characteristics, qualities, skills, roles, and so forth. Self-concepts contribute to the individual's sense of identity over time. The conscious representation of self-concept is dependent in part on nonconscious schematization of the self (see SCHEMA). Although self-concepts are usually available to some degree to the consciousness, they may be inhibited from representation yet still influence judgment, mood, and behavioral patterns. Also called **self-appraisal**; **self-assessment**; **self-evaluation**; **self-rating**. See SELF-IMAGE; SELF-PERCEPTION.

**self-concept test** a type of personality assessment designed to determine how participants view their own attitudes, values, goals, body concept, personal worth, and abilities. The TENNESSEE SELF-CONCEPT SCALE is an example.

**self-confidence** *n.* **1.** self-assurance: trust in one's abilities, capacities, and judgment. Because it is typically viewed as a positive attitude, the bolstering of self-confidence is often a mediate or end goal in psychotherapy. **2.** a belief that one is capable of successfully meeting the demands of a task. —**self-confident** *adj.*

**self-confrontation** *n.* the examination of one's attitudes, behaviors, and shortcomings to provide an impetus to change and to gain insight into how one is perceived by others.

**self-conscious emotion** an emotion generated when events reflect on the worth or value of the self in one's own or others' eyes. Self-conscious emotions include SHAME, PRIDE, GUILT, and EMBARRASSMENT. Also called **self-evaluative emotion**.

**self-consciousness** *n.* **1.** a personality trait associated with the tendency to reflect on or think about oneself. Psychological use of the term (e.g., in personality measures) refers to individual differences in self-reflection, not to embarrassment or awkwardness (see sense **3**). Some researchers have distinguished between two varieties of self-consciousness: (a) **private self-consciousness**, or the degree to which people think about private, internal aspects of themselves (e.g., their thoughts, motives, and feelings) that are not directly open to observation by others; and (b) **public self-consciousness**, or the degree to which people think about public, external aspects of themselves (e.g., their physical appearance, mannerisms, and overt behavior) that can be observed by others. **2.** see REFLECTIVE CONSCIOUSNESS. **3.** extreme sensitivity about one's behavior, appearance, or other attributes and excessive concern about the impression one makes on others, which may lead to embarrassment or awkwardness in the presence of others. —**self-conscious** *adj.*

**self-consistency** *n.* **1.** behavior or traits that have a high degree of internal harmony and stability. **2.** the compatibility of all aspects of a theory or system.

**self-consistency perspective** a variation of COGNITIVE DISSONANCE THEORY in which cognitive dissonance is considered particularly likely to occur when an inconsistency involves some aspect of the self. This perspective differs from SELF-AFFIRMATION THEORY in that dissonance can be reduced only by resolving the specific inconsistency that gave rise to the discomfort; it does not allow for the possibility that dissonance can be reduced by affirming some other aspect of the self. [originally proposed by U.S. psychologist Elliot Aronson (1932– )]

**self-consistency theory** see CONSISTENCY THEORY.

**self-construal** *n.* any specific belief about the self. The term is used particularly in connection with the distinction between INDEPENDENT SELF-CONSTRUALS and INTERDEPENDENT SELF-CONSTRUALS.

**self-contradiction** *n.* **1.** in logic, a fundamental inconsistency between two or more premises of a single argument, such that they cannot both be true. **2.** more generally, a deep inconsistency between two or more beliefs, intentions, desires, or behaviors of an individual or of a group. —**self-contradictory** *adj.*

**self-control** *n.* the ability to be in command of one's behavior (overt, covert, emotional, or physical) and to restrain or inhibit one's impulses. In circumstances in which short-term gain is pitted against long-term greater gain, self-control is the ability to opt for the long-term outcome. Choice of the short-term outcome is called **impulsive-ness**. See also SELF-DISCIPLINE; SELF-REGULATION. —**self-controlled** *adj.*

**self-control technique** a method used in BEHAVIOR THERAPY in which clients are trained to evaluate their own behavior and reinforce desired behavior with appropriate material or social rewards.

**self-control therapy** a form of BEHAVIOR THERAPY that involves self-monitoring (e.g., keeping diaries of behavior), self-evaluation, goal setting, BEHAVIOR CONTRACTS,

self-reinforcement, and relapse prevention. Also called **self-management therapy**. [developed by Austrian-born U.S. clinical psychologist Frederick H. Kanfer (1925–2002)]

**self-correction** *n.* any situation in which an individual makes an error but fixes it spontaneously, with no external instructions or cues.

**self-criticism** *n.* the evaluation of one's own behavior and attributes, with recognition of one's weaknesses, errors, and shortcomings. Although self-criticism can have a positive effect in fostering personal growth, a tendency toward harsh self-criticism is thought by some to be a risk factor for depression. —**self-critical** *adj.*

**self-debasement** *n.* see SELF-ABASEMENT.

**self-deception** *n.* the process or result of convincing oneself of the truth of something that is false or invalid, particularly the overestimation of one's abilities and concurrent failure to recognize one's limitations.

**self-defeating behavior** repetitive actions by an individual that invite failure or misfortune and thus prevent him or her from attaining goals or fulfilling desires.

**self-defeating personality disorder** in *DSM-III-R* (but not in later *DSM* editions), a personality disorder characterized by a reluctance to seek pleasurable activities, an encouragement of others to exploit or take advantage of oneself, a focus on one's very worst personal features, and a tendency to sabotage one's good fortunes. See also MASOCHISTIC PERSONALITY DISORDER.

**self-definition** *n.* **1.** a self-view, self-concept, or other belief about the self. **2.** personal independence. See AUTONOMY.

**self-demand schedule** in animal or child-rearing studies, a feeding schedule regulated by the individual's needs and desires, in contrast to a fixed or rigid schedule. Also called **demand feeding**.

**self-denial** *n.* the act of suppressing desires and forgoing satisfactions.

**self-derogation** *n.* the tendency to disparage oneself, often unrealistically. It frequently is associated with a MAJOR DEPRESSIVE EPISODE.

**self-desensitization** *n.* a procedure used in BEHAVIOR THERAPY in which the individual, when confronted with objects or situations that arouse anxiety, engages in coping strategies designed to reduce anxiety, such as repeating positive self-statements, mentally rehearsing a potential confrontation, or employing muscle relaxation. See also DESENSITIZATION; SYSTEMATIC DESENSITIZATION.

**self-destructiveness** *n.* actions by an individual that are damaging and not in his or her best interests. The individual may not be aware of the damaging influence of the actions or may on some level wish for the resulting damage. The behavior may be repetitive and resistant to treatment, sometimes leading to suicide attempts. —**self-destructive** *adj.*

**self-determination** *n.* the process or result of engaging in behaviors without interference or undue influence from other people or external demands. Self-determination refers particularly to behaviors that improve one's circumstances, including effective decision making, problem solving, self-management, self-instruction, and self-advocacy.

**self-determination theory** the concept that regula-

tion of behavior varies along a continuum from externally controlled (e.g., to obtain rewards or avoid punishments) to autonomous or intrinsically motivated (e.g., to have fun or explore interests). The theory emphasizes the importance of INTRINSIC MOTIVATION for producing healthy adjustment and asserts that negative outcomes ensue when people feel that they are driven mainly by external forces and extrinsic rewards.

**self-detoxification** *n.* see DETOXIFICATION.

**self-development** *n.* the growth or improvement of one's qualities and abilities.

**self-differentiation** *n.* the tendency to seek recognition for one's individuality and uniqueness, particularly in contrast to the other members of one's social group. See OPTIMAL DISTINCTIVENESS THEORY.

**self-directedness** *n.* see CLONINGER'S PSYCHOBIOLOGICAL MODEL OF PERSONALITY; TEMPERAMENT AND CHARACTER INVENTORY.

**self-discipline** *n.* **1.** the control of one's impulses and desires, forgoing immediate satisfaction in favor of long-term goals. **2.** resolute adherence to a regimen or course of action in order to achieve one's goals. See also DELAY OF GRATIFICATION; SELF-CONTROL; SELF-REGULATION. —**self-disciplined** *adj.*

**self-disclosure** *n.* the act of revealing personal or private information about one's self to other people. In relationships research, self-disclosure has been shown to foster feelings of closeness and intimacy. In psychotherapy, the revelation and expression by the client of personal, innermost feelings, fantasies, experiences, and aspirations is believed by many to be a requisite for therapeutic change and personal growth. Additionally, pertinent revelation by the therapist of his or her personal details to the client can—if used with discretion—be a valuable tool to increase rapport and earn the trust of the client.

**self-discovery** *n.* the process of searching for and finding one's unique self or identity.

**self-discrepancy** *n.* an incongruity between different aspects of one's self-concept, particularly between one's ACTUAL SELF and either the IDEAL SELF or the OUGHT SELF. [derived from the theory of U.S. psychologist E. Tory Higgins (1946–)]

**self-dynamism** *n.* the pattern of motivations or drives that comprise one's SELF-SYSTEM, including especially the pursuit of biological satisfaction, security, and freedom from anxiety. [proposed by Harry Stack SULLIVAN]

**self-effacement** *n.* **1.** acting in such a way as to avoid drawing attention to oneself or making oneself noticeable. **2.** in the approach of Karen D. HORNEY, a neurotic idealization of compliance, dependency, and selfless love as a reaction to identification with the hated self. See also COMPLAINT CHARACTER; NEUROTIC TREND. —**self-effacing** *adj.*

**self-efficacy** *n.* an individual's subjective perception of his or her capability to perform in a given setting or to attain desired results, proposed by Albert BANDURA as a primary determinant of emotional and motivational states and behavioral change. Also called **perceived self-efficacy**.

**self-enhancement** *n.* any strategic behavior designed to increase either SELF-ESTEEM or the esteem of others. Self-enhancement can take the form of pursuing success or merely distorting events to make them seem to reflect bet-

ter on the self. Compare SELF-PROTECTION. See also COMPENSATORY SELF-ENHANCEMENT.

**self-enhancement motive** the desire to think well of oneself and to be well regarded by others. This motive causes people to prefer favorable, flattering feedback rather than accurate but possibly unfavorable information about themselves. Compare SELF-ASSESSMENT MOTIVE; SELF-VERIFICATION MOTIVE.

**self-enucleation** *n.* see AUTOENUCLEATION.

**self-esteem** *n.* the degree to which the qualities and characteristics contained in one's SELF-CONCEPT are perceived to be positive. It reflects a person's physical self-image, view of his or her accomplishments and capabilities, and values and perceived success in living up to them, as well as the ways in which others view and respond to that person. The more positive the cumulative perception of these qualities and characteristics, the higher one's self-esteem. A reasonably high degree of self-esteem is considered an important ingredient of mental health, whereas low self-esteem and feelings of worthlessness are common depressive symptoms.

**self-esteem stability** the magnitude of short-term fluctuations around a typical or baseline degree of self-esteem. It is distinguished from self-esteem level (i.e., high or low), which is more global and relatively enduring over time. In contrast, stability-related fluctuations may be in response to external, environmentally based events (e.g., receiving positive or negative feedback on a task) or internally based events (e.g., reflecting on one's progress, or lack thereof, toward a goal). Individuals with unstable self-esteem tend to be particularly susceptible to perceiving threats to self-worth in the environment and are at higher risk for experiencing depressive symptoms.

**self-evaluation** *n.* see SELF-CONCEPT.

**self-evaluation maintenance model** a conceptual analysis, related to SOCIAL COMPARISON THEORY, in which an individual is assumed to maintain a positive self-evaluation by (a) associating with high-achieving individuals who excel in areas with low relevance to his or her sense of self-worth and (b) avoiding association with high-achieving individuals who excel in areas that are personally important to him or her. [developed by U.S. social psychologists Abraham Tesser (1941– ), Jennifer D. Campbell (1944– ), and their colleagues]

**self-evaluative emotion** see SELF-CONSCIOUS EMOTION.

**self-evident** *adj.* perceived immediately by the mind to be true without need of supporting argument or empirical evidence. In DEDUCTIVE REASONING, it is customary to begin an argument from a proposition that is considered self-evident (an AXIOM). Philosophers have also held various types of INNATE IDEA to be self-evident.

**self-examination** *n.* see SELF-REFLECTION.

**self-exciting circuit** a NEURAL CIRCUIT or NEURAL PATHWAY in which part of the output is fed back to the original cell, thus maintaining activity. See POSITIVE FEEDBACK; RECURRENT CIRCUIT.

**self-expression** *n.* free expression of one's feelings, thoughts, talents, attitudes, or impulses through such means as verbal communication; the visual, decorative, literary, and performing arts; and other commonplace activities (e.g., gardening, sports).

**self-extension** *n.* according to Gordon W. ALLPORT, an

early stage in the development of the PROPRIUM or self, beginning roughly at age 4 and marked by the child's emerging ability to incorporate people, objects, and abstractions into the self-concept. Self-extension is the investment of ego in those entities outside of the self with which the individual feels affinity or identification.

**self-extinction** *n.* in psychoanalytic theory, a form of neurotic behavior in which the patient lacks experience of himself or herself as an entity and identifies vicariously with the experiences and lives of others. [introduced by Karen D. HORNEY]

**self-feeding** *n.* the act of feeding oneself without the direct assistance of others. Some individuals with disabilities may not be capable of self-feeding, whereas others may be able to feed themselves with the help of certain ASSISTIVE TECHNOLOGY devices.

**self-focus** *n.* **1.** the direction of conscious attention on oneself and one's thoughts, needs, desires, and emotions. **Trait self-focus** refers to a chronic habit or pattern of SELF-CONSCIOUSNESS, whereas **state self-focus** refers to OBJECTIVE SELF-AWARENESS. An excess of trait self-focus has been associated with the development of, or with heightened vulnerability to, several mental health disorders, such as alcohol abuse, depression, and anxiety disorders. Also called **self-focused attention**. **2.** the capacity of an individual to analyze and evaluate his or her mental and emotional states. **3.** excessive concern for the self and its needs: selfishness. —**self-focused** *adj.*

**self-focused coping** in situations considered stressful, the combination of behavioral tendencies to blame oneself (i.e., believe the situation results entirely from one's actions) and to keep to oneself (i.e., avoid interacting with others).

**self-fulfilling prophecy** a belief or expectation that helps to bring about its own fulfillment, as, for example, when a person expects nervousness to impair his or her performance in a job interview or when a teacher's preconceptions about a student's ability influence the child's achievement for better or worse. See PYGMALION EFFECT; UPWARD PYGMALION EFFECT. See also BEHAVIORAL CONFIRMATION; DEMAND CHARACTERISTICS; EXPECTANCY EFFECT.

**self-gratification** *n.* the satisfaction of the needs of the self.

**self-guide** *n.* a specific image or standard for the self that can be used to direct SELF-REGULATION. In particular, self-guides include mental representations of valued or preferred attributes; that is, ideals and notions of how one ought to be. These may be chosen by the self or may come from others.

**self-handicapping** *n.* a strategy of creating obstacles to one's performance, so that future anticipated failure can be blamed on the obstacle rather than on one's lack of ability. If one succeeds despite the handicap, it brings extra credit or glory to the self. The concept originally was proposed to explain alcohol and drug abuse among seemingly successful individuals. —**self-handicap** *vb.*

**self-help** *n.* a focus on self-guided, in contrast to professionally guided, efforts to cope with life problems. Self-help can involve self-reliance, in which one addresses such problems on one's own (e.g., by reading self-help books), or it can involve joining with others to address shared concerns together, as in SELF-HELP GROUPS.

**self-help clearinghouse** an organization that serves



as an information and referral source about self-help groups in a given locality or region, providing up-to-date directories of all groups in that jurisdiction, as well as national self-help group resources. It is an important resource for citizens, groups, and professionals. Some clearing-houses also provide consultation to groups and group leaders and attempt to educate the public and professionals about the nature, value, and availability of groups.

**self-help group** a group composed of individuals who meet on a regular basis to help one another cope with a life problem. Unlike therapy groups, self-help groups are not led by professionals, do not charge a fee for service, and do not place a limit on the number of members. They provide many benefits that professionals cannot provide, including friendship, mutual support, EXPERIENTIAL KNOWLEDGE, identity, a sense of belonging, and other by-products of a positive group process. Each group also develops its own ideology or set of beliefs about the cause of and best means to address the problem that brings members together; the ideology is unique to that group and serves as an aid or “antidote” to its particular type of problem. For instance, the ideology of ALCOHOLICS ANONYMOUS (AA) includes the belief that alcoholism is a lifelong problem and that the first step in addressing it (see TWELVE-STEP PROGRAM) is for group members to admit that they do not have control over their drinking. Of the various types of self-help groups, AA represents only one; it falls into a broader category of groups whose focal problem is addiction or compulsive behavior (e.g., GAMBLERS ANONYMOUS). Other types of self-help groups include those focused on a life stress or transition (e.g., COMPASSIONATE FRIENDS), those focused on mental health concerns (e.g., NATIONAL ALLIANCE ON MENTAL ILLNESS), and those focused on a particular physical disease or disorder (e.g., the National Multiple Sclerosis Society). See also MUTUAL SUPPORT GROUP; SUPPORT GROUP.

**self-hypnorelaxation** *n.* a form of SELF-HYPNOSIS in which clients are trained to respond to their own relaxation suggestions.

**self-hypnosis** *n.* the process of putting oneself into a trance or trancelike state, typically through AUTOSUGGESTION. Also called **autohypnosis**. Compare HETEROHYPNOSIS.

**self-ideal** *n.* see EGO-IDEAL.

**self-ideal Q sort** a technique used to measure the discrepancy between an individual's existing and ideal SELF-CONCEPTS. Participants are required to sort descriptions of characteristics twice, first with regard to how they see themselves and then in terms of how they would like to be.

**self-identification** *n.* the act of construing one's identity in particular terms, usually as a member of a particular group or category (e.g., “I am Hispanic,” “I am a lesbian,” “I am a father”) or as a person with particular traits or attributes (e.g., “I am intelligent,” “I am unlucky,” “I am fat”).

**self-identity** *n.* see IDENTITY.

**self-image** *n.* one's view or concept of oneself. Self-image is a crucial aspect of an individual's personality that can determine the success of relationships and a sense of general well-being. A negative self-image is often a cause of dysfunctions and of self-abusive, self-defeating, or self-destructive behavior.

**self-image bias** the tendency of people to judge others according to criteria on which they themselves score

highly. The more favorably a person rates himself or herself on some trait, the more central and important that trait is likely to be in how the person perceives others. The self-image bias is one subtle way in which the SELF-CONCEPT influences how the person perceives others.

**self-inflicted wound** see DELIBERATE SELF-HARM.

**self-injurious behavior** see DELIBERATE SELF-HARM.

**self-insight** *n.* understanding oneself in some depth. It is a mediate goal or the desired outcome of many types of psychotherapy.

**self-instructional imagery** imagery that is used in the learning or perfection of a skill. It may be the image of a past performance used to detect errors for correction, or it may be the image of an unperformed alteration of a skill. See MENTAL PRACTICE.

**self-instructional training** a form of COGNITIVE BEHAVIOR THERAPY used to modify maladaptive beliefs and cognitions and develop new skills in an individual. The therapist identifies the client's maladaptive thoughts (e.g., “Everybody hates me”) and models appropriate behavior while giving spoken constructive **self-instructions** (or **self-statements**). The client then copies the behavior while repeating these instructions aloud. See also SELF-STATEMENT TRAINING. [developed by U.S. psychologist Donald Meichenbaum (1940– )]

**self-interest** *n.* one's personal advantage or benefit. Self-interested behavior includes both the pursuit of rewards and benefits and the avoidance of costs, dangers, and harm.

**self-inventory** *n.* a questionnaire or series of statements on which participants check characteristics or traits that they perceive to apply to themselves.

**selfish gene hypothesis** the postulate that the sole purpose of genes is to replicate themselves and that genes are the overriding units of selection (i.e., the entities upon which NATURAL SELECTION operates). Hence, any mutation enhancing gene replication (and transmission) would be selected for. Many contemporary evolutionary biologists argue that this view oversimplifies the relationship between genes and organisms and is extreme in its notion that genes consistently override selection on the organism or population level. They accept, however, the principal notion of gene replication as consistent with a number of processes in evolution. [proposed by British biologist Richard Dawkins (1941– ) in his 1976 book *The Selfish Gene*]

**selfish herd** in animal behavior, a gathering of highly selfish individuals each jostling to keep other individuals between them and a source of danger. Individuals end up clustered in groups not for mutual defense or cooperation but simply because each individual is looking after its own interests by using the others as a shield.

**selfishness** *n.* the tendency to act excessively or solely in a manner that benefits oneself, even if others are disadvantaged. —**selfish** *adj.*

**self-love** *n.* 1. regard for and interest in one's own being or contentment. 2. excessive self-regard, or a narcissistic attitude toward one's body, abilities, or personality. See EGOTISM; NARCISSISM.

**self-managed reinforcement** see SELF-REINFORCEMENT.

**self-management** *n.* 1. an individual's control of his or

her behavior, particularly regarding the pursuit of a specific objective (e.g., weight loss). Self-management is usually considered a desirable aspect for the individual personally and socially, but some forms of self-management may be detrimental to mental and physical health. Psychotherapists and counselors often seek to provide clients with methods of identifying the latter and modifying them into the former. **2.** a BEHAVIOR THERAPY program in which clients are trained to apply techniques that will help them modify an undesirable behavior, such as smoking, excessive eating, or aggressive outbursts. Clients learn to pinpoint the problem, set realistic goals for changing it, use various CONTINGENCIES to establish and maintain a desired behavior, and monitor progress.

**self-management therapy** see SELF-CONTROL THERAPY.

**self-medication** *n.* see MEDICATION.

**self-monitoring** *n.* **1.** a method used in behavioral management in which individuals keep a record of their behavior (e.g., time spent, form and place of occurrence, feelings during performance), especially in connection with efforts to change or control the self. For example, a therapist may assign a client self-monitoring as homework to encourage better SELF-REGULATION by that person. **2.** a personality trait reflecting an ability to modify one's behavior in response to situational pressures, opportunities, and norms. High self-monitors are typically more apt to conform their behavior to the demands of the situation, whereas low self-monitors tend to behave in accord with their internal feelings.

**self-monitoring observation** self-tracking of one's behaviors, attitudes, or emotions over time. In research studies and clinical interventions focused on weight loss, for example, participants are encouraged to keep track of their eating patterns, their feelings related to their eating, and triggers for not maintaining their diet. This enables a clinician or researcher to review periods when the participant is outside the clinical setting or laboratory. Compare ANALOGUE OBSERVATION; NATURALISTIC OBSERVATION.

**self-mutilation** *n.* the act of disfiguring oneself through DELIBERATE SELF-HARM.

**self-object (selfobject)** *n.* in SELF PSYCHOLOGY, one's experience of another person (object) as part of, rather than as separate and independent from, one's self, particularly when the object's actions affirm one's narcissistic well-being. The need for self-objects can be an aspect of psychopathology, as when an individual's self-esteem requires constant shoring up from others. [first described by Austrian-born U.S. psychoanalyst Heinz Kohut (1913–1981)]

**self-objectification** *n.* the achievement of objective knowledge about the self or self-understanding. It is one of Gordon W. ALLPORT's set of seven adaptive characteristics for psychological maturity.

**self-object transference (selfobject transference)** see NARCISSISTIC TRANSFERENCE.

**self-organizing system** any system whose elements spontaneously interact in such a way as to create a higher level structure as a result of their intrinsic properties. Many biological molecules show spontaneous self-organization, but purely physical systems do so as well, as in phase changes in water at different temperatures.

**self-perception** *n.* a person's view of his or her self or of any of the mental or physical attributes that constitute the

self. Such a view may involve genuine self-knowledge or varying degrees of distortion. Also called **self-percept**. See also PERCEIVED SELF; SELF-CONCEPT.

**self-perception theory** the hypothesis that people often have only limited access to their attitudes, beliefs, traits, or psychological states. In such cases, they must attempt to infer the nature of these internal cues in a manner similar to the inference processes they use when making judgments about other people. For example, a person may infer what his or her attitude is by considering past behaviors related to the ATTITUDE OBJECT: Approach behaviors imply a positive attitude; avoidance behaviors imply a negative attitude. Self-perception theory has been offered as an alternative explanation for some phenomena traditionally interpreted in terms of COGNITIVE DISSONANCE THEORY. The theory has also been used to explain the success of the FOOT-IN-THE-DOOR TECHNIQUE. [originally proposed by U.S. psychologist Daryl J. Bem (1938– )]

**self-presentation** *n.* any behaviors intended to convey a particular image of, or particular information about, the self to other people. Self-presentational motives explain why an individual's behavior often changes as soon as anyone else is thought to be present or watching. Canadian-born U.S. sociologist Erving Goffman (1922–1982) likened self-presentation to a theatrical (dramaturgical) performance in which individuals strive to create an image of themselves through their verbal and nonverbal displays in order to influence the impressions formed by those around them. Some common strategies of self-presentation include EXEMPLIFICATION, SELF-PROMOTION, and SUPPLICATION. See also IMPRESSION MANAGEMENT. —**self-presentational** *adj.*

**self-preservation instinct** the fundamental tendency of humans and nonhuman animals to behave so as to avoid injury and maximize chances of survival (e.g., by fleeing from dangerous situations or predators). In his early formulations of classic psychoanalytic theory, Sigmund FREUD proposed that self-preservation was one of two instincts that motivated human behavior, the other being the SEXUAL INSTINCT. In his later formulations, he combined both instincts into the concept of EROS, or the LIFE INSTINCT, and opposed them to THANATOS, the DEATH INSTINCT. Also called **self-preservative instinct**; **survival instinct**.

**self-promotion** *n.* in SELF-PRESENTATION theory, a strategy of making oneself look good to others by highlighting or exaggerating one's competence and abilities.

**self-protection** *n.* any strategic behavior designed to avoid losing either SELF-ESTEEM or the esteem of others. Self-protection fosters a risk-avoidant orientation and is often contrasted with SELF-ENHANCEMENT.

**self psychology** **1.** any system of psychology focused on the self. **2.** a school of psychoanalytical theory that stresses the importance, in healthy self-development, of an individual's relationships with others and locates the source of many psychological problems in caregivers' lack of responsiveness to the child's emotional needs. In self-psychological therapy, the therapist attempts to build an empathetic relationship with the patient, rather than keep an emotional distance as in classic psychoanalytical practice. [pioneered by Austrian-born U.S. psychoanalyst Heinz Kohut (1913–1981)]

**self-punishment** *n.* the act of inflicting physical or psychological harm on oneself for one's perceived misdeeds. Self-punishment ranges from blaming oneself unjustifiably

for negative occurrences to attempting suicide, and it commonly occurs in severe cases of MAJOR DEPRESSIVE DISORDER.

**self-rating** *n.* **1.** see SELF-CONCEPT. **2.** in psychological measurement, the act of reporting on or describing characteristics of oneself.

**self-rating scale** any questionnaire, inventory, survey, or other instrument in which participants are asked to assess their own characteristics (e.g., attitudes, interests, abilities, performance). See also SELF-REPORT; SELF-REPORT INVENTORY.

**self-realization** *n.* see SELF-ACTUALIZATION.

**self-reference** *n.* a tendency to relate events or information to the self, such as by directing discussions toward one's personal concerns and perceptions. —**self-refer** *vb.* —**self-referential** *adj.*

**self-reference effect** the widespread tendency for individuals to have a superior or enhanced memory for stimuli that relate to the self or SELF-CONCEPT.

**self-referral** *n.* the act of consulting a health care practitioner without being directed to by a medically qualified professional or similar person or without being forced to seek such help by an employer, a spouse, or the courts. Self-referred individuals are often viewed as more motivated for treatment and more likely to admit to problems.

**self-reflection** *n.* **1.** examination, contemplation, and analysis of one's thoughts, feelings, and actions. The condition of or capacity for this is called **self-reflexivity**. **2.** see REFLECTIVE CONSCIOUSNESS.

**self-regulated learning** the process of continuously monitoring and controlling one's learning. For example, students studying for a test might periodically test themselves to determine what they have learned, and then they might devote additional studying to the material that is not as well learned. Self-regulated learning involves METACOGNITION, cognitive control, motivation, and strategic use of learning behaviors.

**self-regulation** *n.* the control of one's behavior through the use of self-monitoring (keeping a record of behavior), self-evaluation (assessing the information obtained during self-monitoring), and self-reinforcement (rewarding oneself for appropriate behavior or for attaining a goal). Self-regulatory processes are stressed in BEHAVIOR THERAPY. See also SELF-CONTROL; SELF-MANAGEMENT.

**self-regulatory resources theory** a model stating that self-regulation depends on a global, but finite, pool of resources that can be temporarily depleted by situational demands. See EGO DEPLETION; VOLITION.

**self-reinforcement** *n.* the rewarding of oneself for appropriate behavior or the achievement of a desired goal. The **self-reward** may be, for example, buying a treat for oneself after studying for an exam. Also called **self-managed reinforcement**.

**self-relevance** *n.* see EGO INVOLVEMENT.

**self-report** *n.* a statement or series of answers to questions that an individual provides about his or her state, feelings, thoughts, beliefs, past behaviors, and so forth. Self-report methods rely on the honesty and self-awareness of the participant (see SELF-REPORT BIAS) and are used especially to measure behaviors or traits that cannot easily be directly observed by others.

**self-report bias** a methodological problem that arises when researchers rely on asking people to describe their thoughts, feelings, or behaviors rather than measuring these directly and objectively. People may not give answers that are fully correct, either because they do not know the full answer or because they seek to make a good impression (see SOCIAL DESIRABILITY). The self-report bias is often cited as a reason to use direct observation whenever practicable.

**self-report inventory** a questionnaire on which participants indicate the degree to which the descriptors listed apply to them. Also called **self-report scale**.

**self-repudiation** *n.* denial of one's pleasure or rights, usually out of a sense of guilt or low self-esteem.

**self-respect** *n.* a feeling of self-worth and self-esteem, especially a proper regard for one's values, character, and dignity.

**self-reward** *n.* see SELF-REINFORCEMENT.

**self-righting** *n.* the ability to right oneself, that is, to rebound from adversity by taking effective actions to adapt to it and by seeking a functional accommodation within the constraints imposed by the environment. See also COPING BEHAVIOR; RESILIENCE.

**self-schema** *n.* a cognitive framework comprising organized information and beliefs about the self that guides a person's perception of the world, influencing what information draws the individual's attention as well as how that information is evaluated and retained. Compare SOCIAL SCHEMA.

**self-selected groups design** an experimental design in which participants choose their group or the condition to which they will be exposed. Because the assignment of participants to research conditions is nonrandom, causal inference from data gleaned in such experiments is questionable. See QUASI-EXPERIMENTAL DESIGN.

**self-selection bias** a type of BIAS that can arise when study participants choose their own treatment conditions, rather than being randomly assigned. In such cases, it is impossible to state unambiguously that a study result is due to the treatment condition and not to the preexisting characteristics of those individuals who chose to be in this condition. Also called **self-selection effect**. See also SAMPLING BIAS.

**self-serving bias** the tendency to interpret events in a way that assigns credit for success to oneself but denies one's responsibility for failure, which is blamed on external factors. The self-serving bias is regarded as a form of self-deception designed to maintain high self-esteem. Compare GROUP-SERVING BIAS.

**self-standards model** a version of COGNITIVE DISSONANCE THEORY stating that the effects of inconsistent behavioral outcomes will differ depending on whether they are assessed against a personal standard or a normative standard. This theory is an attempt to explain the differing effects of self-esteem on cognitive dissonance that have been documented in the literature and to integrate aspects of the NEW-LOOK THEORY, SELF-CONSISTENCY PERSPECTIVE, and SELF-AFFIRMATION THEORY. [proposed by U.S. psychologists Jeff Stone and Joel Cooper (1943– )]

**self-statement** *n.* see SELF-INSTRUCTIONAL TRAINING; SELF-STATEMENT TRAINING.

**self-statement modification** a technique designed to change maladaptive ideas about the self that are uncov-

ered in COGNITIVE BEHAVIOR THERAPY. See also SELF-INSTRUCTIONAL TRAINING.

**self-statement training (SST)** a type of COGNITIVE REHEARSAL that involves periodically thinking or saying something positive about oneself, such as "I am a capable individual who is worthy of respect." It is used in SELF-INSTRUCTIONAL TRAINING. See also INNER DIALOGUE; SELF-AFFIRMATION.

**self-stereotyping** *n.* see AUTOSTEREOTYPING.

**self-stimulation** *n.* **1.** the act or process of inducing or increasing the level of arousal in oneself. It can be observed in various situations; for example, infants who are understimulated may explore their surroundings or babble to themselves. **2.** see INTRACRANIAL STIMULATION; PLEASURE CENTER. **3.** see MASTURBATION.

**self-suggestion** *n.* see AUTOSUGGESTION.

**self-synchrony** *n.* see SYNCHRONY.

**self-system** *n.* the relatively fixed personality of the individual resulting from relationships with his or her parents and other significant adults, in which approved attitudes and behavior patterns tend to be retained and disapproved actions and attitudes tend to be blocked out. [first described by Harry Stack SULLIVAN]

**self-talk** *n.* an internal dialogue in which an individual utters phrases or sentences to himself or herself. **Negative self-talk** often confirms and reinforces negative beliefs and attitudes, such as fears and false aspirations, which have a correspondingly negative effect on the individual's feelings (e.g., a sense of worthlessness) and reactions (e.g., DEMOTIVATION). In certain types of psychotherapy, one of the tasks of the therapist is to encourage the client to replace self-defeating, negative self-talk with more constructive, **positive self-talk**. In sport, athletes are trained to use positive self-talk to cue the body to act in particular ways, to cue attentional focus, to motivate, to reinforce self-efficacy, and to facilitate the creation of an IDEAL PERFORMANCE STATE. See also INTERNALIZED SPEECH; RATIONAL EMOTIVE BEHAVIOR THERAPY. [described by Albert ELLIS]

**self-terminating search** any SEARCH process in which the search is ended as soon as a given target is detected. This may be a search for target items in memory, a VISUAL SEARCH, or any problem-solving exercise that involves finding the correct solution among a number of alternatives. Compare EXHAUSTIVE SEARCH.

**self-test** *n.* a test that can be administered without the help of a trained professional.

**self-transcendence** *n.* **1.** the state in which an individual is able to look beyond himself or herself and adopt a larger perspective that includes concern for others. Some psychologists maintain that self-transcendence is a central feature of the healthy individual, promoting personal growth and development. [first described by Viktor E. FRANKL] **2.** see CLONINGER'S PSYCHOBIOLOGICAL MODEL OF PERSONALITY; TEMPERAMENT AND CHARACTER INVENTORY.

**self-understanding** *n.* the attainment of knowledge about and insight into one's characteristics, including attitudes, motives, behavioral tendencies, strengths, and weaknesses. The achievement of self-understanding is one of the major goals of certain forms of psychotherapy.

**self-validation factor** a variable that serves to affect confidence in the validity of cognitive responses generated during ELABORATION of attitude-relevant information. See

also ELABORATION-LIKELIHOOD MODEL; MULTIPLE ROLES IN PERSUASION.

**self-verbalization** *n.* **1.** self-directed private speech or thinking aloud. Self-verbalization can be a cognitive strategy that fosters internal self-regulation by verbally controlling behavior. Often used as a learning tool, it can be used to teach new skills, enhance problem-solving abilities, or alter previously held beliefs. Varying perspectives on this type of speech include the work of Lev VYGOTSKY, Jean PIAGET, and Alexander LURIA. **2.** see SELF-TALK.

**self-verification motive** the desire to seek information about oneself that confirms one's chronic self-views, regardless of whether this information is good or bad. This desire is often stronger than the SELF-ENHANCEMENT MOTIVE, wherein people seek favorable information about themselves, or the SELF-ASSESSMENT MOTIVE, wherein people seek accurate information about themselves. People seek self-verification (a) by gravitating toward situations and relationship partners in which they will receive self-confirmation, (b) by striving to elicit self-verifying feedback through their behavior, and (c) by selectively attending to, recalling, and interpreting evaluations in ways that tend to maintain their own views of themselves. [first proposed in 1983 by U.S. social psychologist William B. Swann (1952– )]

**self-view** *n.* an umbrella term for various forms of self-definition, including global SELF-ESTEEM and specific beliefs about oneself (SELF-CONCEPTS).

**self-worth** *n.* an individual's evaluation of himself or herself as a valuable, capable human being deserving of respect and consideration. Positive feelings of self-worth tend to be associated with a high degree of SELF-ACCEPTANCE and SELF-ESTEEM.

**SEM** abbreviation for STRUCTURAL EQUATION MODELING.

**SEM 1.** symbol for STANDARD ERROR OF MEASUREMENT. **2.** symbol for STANDARD ERROR OF THE MEAN.

**sem-** combining form signs or meaning.

**semantic** *adj.* of or pertaining to meaning, particularly that of words and other symbols. For example, **semantic analysis** is a computational process for examining in detail the language used within a text so as to extract and analyze its stated and often implied meanings; the method utilizes statistical manipulations of word usage frequencies to clarify relationships among elements or identify thematic patterns.

**semantic anomia** loss or impairment of the ability to understand the correct meaning of words or to situate them into their conceptual categories (e.g., the word *dress* in the category of *clothing*). Recent research suggests that semantic anomia is due to degradation of semantic knowledge caused by damage to the temporal lobe.

**semantic aphasia** a form of APHASIA characterized by loss or impairment of the ability to find the proper words to convey meaning appropriately when speaking. See also LOGICOGRAMMATICAL DISORDER.

**semantic code** the means by which the conceptual or abstract components of an object, idea, or impression are stored in memory. For example, the item *typewriter* could be remembered in terms of its functional meaning or properties. Compare IMAGERY CODE.

**semantic counseling** a type of COUNSELING in which

emphasis is placed on interpretations of meanings, particularly those related to adjustment and maladjustment.

**semantic dementia** a type of FRONTOTEMPORAL DEMENTIA resulting from focal degeneration of the polar and inferolateral regions of the temporal lobes. It is characterized by a selective, progressive impairment in SEMANTIC MEMORY, leading to difficulties in object naming, comprehension of words and their appropriate use in conversation, and appreciation and use of objects. Nonsemantic aspects of language, as well as perceptual and spatial skills, are preserved.

**semantic differential** a type of scale that researchers use to assess a respondent's views on a certain topic (e.g., a stimulus such as a word or photograph, the quality of some experience). Participants are asked to rate the topic on a scale that has pairs of opposites, such as *bad-good*, *unpleasant-pleasant*, or *competitive-cooperative*, as ANCHORS or reference points. For example, the bipolar opposites *bad* and *good* may be scaled along 7 points and the respondent asked to position himself or herself along the 7-point continuum for a given topic. Generally, the anchors are focused on three dimensions—evaluation, activity, and potency. Responses to word pairs assessing the evaluative dimension are scaled in some way (e.g., according to theory, by EXPLORATORY FACTOR ANALYSIS) so that items can be averaged or summed to arrive at an index of attitudes. This procedure is one of the most widely used methods of assessing attitudes and may be used in psychometric testing or in various settings, such as marketing and politics, to gauge public reactions to a product, issue, or personality. See also ATTITUDE OBJECT; DIRECT ATTITUDE MEASURE. [developed in the 1950s by U.S. psychologists Charles E. OSGOOD, George J. Suci, and Percy H. Tannenbaum (1927–2009)]

**semantic dissociation** a distortion between words and their culturally accepted meanings that is characteristic of the THOUGHT DISORDER of individuals with schizophrenia. It includes **semantic dissolution**, marked by a complete loss of meaning and the ability to communicate; **semantic dispersion**, in which meaning and the correct use of syntax are lost or reduced; **semantic distortion**, in which meaning may be transferred to neologisms; and **semantic halo**, marked by coherent but vague and ambiguous language.

**semantic encoding** cognitive ENCODING of new information that focuses on its meaningful aspects as opposed to its perceptual characteristics. This will usually involve some form of ELABORATION. See also DEEP PROCESSING.

**semantic fluency** the ability to generate words in different categories (e.g., types of dogs). It is often assessed within a 1 minute time frame. Also called **category fluency**.

**semantic generalization** a result of CLASSICAL CONDITIONING in which a word, phrase, or sentence functions as a conditioned stimulus because it shares the same (or highly similar) meaning with a word, phrase, or sentence that has already been established, via direct pairing with an unconditioned stimulus, as a conditioned stimulus. For example, the word *delicious*, when paired with actual food, will eventually elicit the response of salivation. After *delicious* is established as a conditioned stimulus, related words or phrases (e.g., *tasty*) may elicit the same or similar responses. See STIMULUS EQUIVALENCE.

**semanticity** *n.* 1. the property of language that allows it

to represent events, ideas, actions, and objects symbolically, thereby endowing it with the capacity to communicate meaning. According to Roger BROWN, it is one of the formal properties of language. See PRODUCTIVITY. 2. in nonhuman animal communication, the meaning conveyed through vocalizations (e.g., alarm calls).

**semantic jargon** a symptom of fluent APHASIAS (e.g., WERNICKE'S APHASIA) in which individuals utter real words and sentences but in combinations that have little meaning. For example, an individual asked about his or her poor vision might reply, "My wires don't hire right." See also JARGON APHASIA.

**semantic knowledge** general information that one has acquired; that is, knowledge that is not tied to any specific object, event, domain, or application. It includes word knowledge (as in a dictionary) and general factual information about the world (as in an encyclopedia) and oneself. Also called **generic knowledge**.

**semantic memory** memory for general factual knowledge and concepts, of the kind that endows information with meaning and ultimately allows people to engage in such complex cognitive processes as recognizing objects and using language. Impairments of semantic memory may be seen following brain injury as well as in certain neurological disorders, particularly dementia. For instance, people with Alzheimer's disease often find it increasingly difficult to categorize and name items (i.e., to refer to an apple as an apple) as their memory deficits worsen. Semantic memory is considered by many theorists to be one of the two forms of DECLARATIVE MEMORY, the other being EPISODIC MEMORY. [defined in 1972 by Endel TULVING]

**semantic network** a GRAPH used to capture conceptual relationships. Created by the artificial intelligence research community, it was originally used in programs designed to understand natural (human) language. Nodes in the network represented entities and their properties in a domain. The arc link reflected the semantic nature of the property. This system has been used to model human information storage (particularly the means by which words are connected to meanings and associations in long-term memory), with latencies in retrieval times supposedly reflecting the length of the path of the network searched for the required response.

**semantic paradox** see PARADOX.

**semantic paraphasia** a form of PARAPHASIA in which conversational speech is fairly fluent but objects are misnamed, although some associative connection may exist. For example, a pipe may be called a "smoker" and glasses a "telescope."

**semantic priming** an effect in which the processing of a stimulus is more efficient after the earlier processing of a meaningfully related stimulus, as opposed to an unrelated or perceptually related stimulus. For example, responses to the word *nurse* would be faster following presentation of the word *doctor* than of the word *purse*.

**semantic primitive** one of the fundamental building blocks thought to be involved in the construction of meaning in language. Many refer to a basic physical property or simple sensation; for example, the concept *car* could be reduced to the semantic primitives *moves*, *fast*, *noisy*, *shiny*, and so on. Semantic primitives are thought to play an important role in language development in young children.

**semantics** *n.* 1. in linguistics, the study of meaning in

language, as opposed to the study of formal relationships (GRAMMAR) or sound systems (PHONOLOGY). **2.** aspects of language that have to do with meaning, as distinguished from SYNTACTICS. **3.** in logic and philosophy, the study of the relationships between words or phrases and the things or concepts to which they refer. Compare SEMIOTICS.

**semantic satiation** the effect in which a word seems to lose its meaning after it has been repeated many times in rapid succession. The reasons for this effect remain poorly understood.

**semantic therapy** a form of psychotherapy in which clients are trained to examine undesired word habits and distorted ideas so that they can think more clearly and critically about their aims, values, and relationships. This approach is based on an active search for the meaning of the key words a client uses and on practicing the formation of clear abstractions, as well as on uncovering hidden assumptions and increasing awareness of the emotional tone behind the words the client has been using. Polish-born U.S. philosopher and scientist Alfred Korzybski (1879–1950) and U.S. psychologist Wendell A. L. Johnson (1906–1965) were major early exponents of this approach. See also GENERAL SEMANTICS.

**semasiology** *n.* the study of development and change in the meanings of words. See also SEMANTICS.

**semeiosis** *n.* see SEMIOSIS.

**semen** *n.* the fluid released during EJACULATION. It contains sperm and secretions of the PROSTATE gland, BULBOURETHRAL GLANDS, and SEMINAL VESICLES. Also called **seminal fluid**.

**semenarche** *n.* see SPERMARCHE.

**semicircular canals** a set of three looped tubular channels in the inner ear that detect movements of the head and provide the sense of dynamic equilibrium that is essential for maintaining balance. They form part of the VESTIBULAR APPARATUS. The channels are filled with fluid (endolymph) and are oriented roughly at right angles to each other. Hence, they can monitor movements in each of three different planes. Each canal has an enlarged portion, the **ampulla**, inside which is a sensory structure called a **crista**. This consists of HAIR CELLS whose fine extensions are embedded in a gelatinous cap (the **cupula**). When the head moves in a certain plane, endolymph flows through the corresponding canal, displacing the cupula and causing the hairs to bend. This triggers the hair cells to fire nerve impulses, thus sending messages to the brain about the direction and rate of movement.

**semiconscious** *adj.* describing states of partial wakefulness, such as drowsiness, stupor, or intermittent coma.

**semi-interquartile range** see QUARTILE DEVIATION.

**seminal** *adj.* **1.** of or relating to SEMEN. **2.** formative: strongly influencing development (e.g., of ideas, events, conditions).

**seminal analysis** see SPERM ANALYSIS.

**seminal discharge** the discharge of semen that normally occurs during coital ejaculation, nocturnal emission, or masturbation.

**seminal duct** see VAS DEFERENS.

**seminal fluid** see SEMEN.

**seminal vesicle** either of two membranous pouches,

approximately 8 cm (3 in) long in human males, located between the bladder and the rectum. The seminal vesicles secrete and store a fluid that mixes with secretions of the prostate gland to form the bulk of the SEMEN.

**seminiferous tubule** any of numerous minute, convoluted tubules in the lobules of the TESTIS. The seminiferous tubules are lined with germ cells that give rise to spermatozoa (see SPERMATOGENESIS). They also contain SERTOLI CELLS. Each lobule of a testis may contain one to several seminiferous tubules, and a single testis may contain as many as 400 lobules.

**semiology** *n.* see SEMIOTICS.

**semiosis (semeiosis)** *n.* the process by which objects, words, gestures, and other entities become associated with particular meanings and function as SIGNS within a particular sign system. See SEMIOTICS.

**semiotic function** see SYMBOLIC FUNCTION.

**semiotic movement** a trend toward formalization of systems of visual communication by the use of signs or symbols that are not a part of the standard alphabet. The semiotic movement, which has been particularly popular in the United States, promotes the acceptance of “rules of grammar” for symbolic logic, mathematical formulas, or other symbolic systems that may be analogous to language.

**semiotics** *n.* the study of verbal and nonverbal SIGNS and of the ways in which they communicate meaning within particular sign systems. Unlike SEMANTICS, which restricts itself to the meanings expressed in language, semiotics is concerned with human symbolic activity generally. As an academic discipline, semiotics developed within the general framework of 20th-century STRUCTURALISM, taking as its premise the view that signs can only generate meanings within a pattern of relationships to other signs. Also called **semiology**. [introduced by Charles S. PEIRCE]

**sempartial correlation** see PART CORRELATION.

**semipermeable membrane** a membrane that allows some but not all molecules to pass through. See also PERMEABILITY.

**semistructured interview** see PATTERNED INTERVIEW.

**semitone** *n.* the difference in pitch between two adjacent notes on a CHROMATIC scale (e.g., between D and D<sup>#</sup> or D and D<sup>b</sup>). More precisely, it is the logarithm of a frequency ratio.

**semivowel** *n.* **1.** a vowellike speech sound that functions as a consonant in that it forms a syllable when combined with a true VOWEL. Examples are [w] as in *well* and [y] as in *yellow*. Compare SONANT. **2.** a LIQUID speech sound.

**sender** *n.* in TELEPATHY experiments, the participant who attempts to transmit information to the RECEIVER. See also AGENT.

**senescence** *n.* **1.** the biological process of growing old or the period during which this process occurs. **2.** the state or condition of being old. —**senescent** *adj.*

**senile** *adj.* **1.** associated with advanced age, referring particularly to cognitive or behavioral deterioration relating to old age. **2.** an obsolescent term used to describe an older adult with dementia.

**senile dementia** see DEMENTIA.

**senile dementia of the Alzheimer's type (SDAT)** an older name for DEMENTIA of the Alzheimer's type with onset after age 65.

**senile miosis** a reduction in the size of the pupil that occurs in old age and that is caused by atrophy of the muscles controlling dilation of the pupil, which restricts the amount of light that enters the eye.

**senile plaque** see AMYLOID PLAQUE.

**senility** *n.* an obsolescent term for dementia associated with advanced age.

**senior citizen** an older adult, especially one who is retired or has reached the age of retirement (generally 65 years or older).

**senium** *n.* an older, less commonly used term for the period of old age.

**sensate focus** an approach in which people with sexual dysfunction are trained to focus attention on their own natural sensual cues and gradually achieve the freedom to enjoy sensory stimuli. Therapy is conducted by teams of male and female professionals in joint interviews with the partners. The procedures use prescribed body-massage exercises designed to give and receive pleasure, initially involving body parts other than the breasts and genitals and then moving to these areas. This approach eliminates performance anxiety and allows the partners to relax and enjoy the sensual experience of body caressing without the need to achieve erection or orgasm. Sensate focus therapy is one component of the program developed by U.S. sex researchers William H. Masters (1915–2001) and Virginia E. Johnson (1925–2013).

**sensation** *n.* **1.** the process or experience of perceiving through the senses. See SENSORY SYSTEM. **2.** an irreducible unit of experience produced by stimulation of a sensory RECEPTOR and the resultant activation of a specific brain center, producing basic awareness of a sound, odor, color, shape, or taste or of temperature, pressure, pain, muscular tension, position of the body, or change in the internal organs associated with such processes as hunger, thirst, nausea, and sexual excitement. Also called **sense datum**; **sense impression**; **sensum**. **3.** in the STRUCTURALISM of Edward Bradford TITCHENER, one of the three structural elements of mental experience, the other two being images and feelings. **4.** in general usage, a thrilling or exciting experience. See SENSATION SEEKING. —**sensational** *adj.*

**sensationalism** *n.* in philosophy, the position that all knowledge originates in sensations and that even complex abstract ideas can be traced to elementary sense impressions. See ASSOCIATIONISM; EMPIRICISM. —**sensationalist** *adj.*

**sensation level** the perceived intensity of a particular sensation. An example is the intensity of an auditory stimulus as experienced by a given listener (**auditory sensation level**).

**sensation seeking** the tendency to search out and engage in thrilling activities as a method of increasing stimulation and arousal. It typically takes the form of engaging in highly stimulating activities that have an element of danger, such as skydiving or race-car driving. See also NOVELTY SEEKING.

**Sensation-Seeking Scale (SSS)** a 40-item, forced-choice questionnaire designed to quantitatively measure individual differences among late adolescents and adults in optimal levels of stimulation and arousal. Items pertain to

preferences for intensities of sensation (temperatures, sounds, tastes, colors), familiarity as opposed to novelty, routine as opposed to irregularity, and security as opposed to adventure. Each item relates to one of four subfactor scales: Thrill and Adventure Seeking, representing a desire to engage in unusual or risky physical activities; Experience Seeking, representing a need for a variety of inner experiences; Disinhibition, representing impulsiveness, extraversion, and a hedonistic lifestyle; and Boredom Susceptibility, representing a dislike of repetition, predictability, and monotony. The SSS total score for all 40 items is used as an overall measure of sensation seeking, with higher totals indicating people with a strong need for stimulation who tend to seek relatively high levels of sensory input. Many variations of the SSS exist, including brief forms and forms designed for children, and the instrument also has been translated from English into several other languages. Also called **Zuckerman Sensation-Seeking Scale**. [originally developed in 1964 by clinical psychologist Marvin Zuckerman and colleagues]

**sensation threshold** see ABSOLUTE THRESHOLD.

**sensation type** in the ANALYTIC PSYCHOLOGY of Carl JUNG, a FUNCTIONAL TYPE dominated by sensory perception, such that the individual experiences the world primarily through his or her senses. It is one of Jung's two IRRATIONAL TYPES, the other being the INTUITIVE TYPE. See also FEELING TYPE; THINKING TYPE.

**sensation unit** a discriminable sensory experience. See DIFFERENCE THRESHOLD.

**sense** **1.** *n.* any of the media through which one gathers information about the external environment or about the state of one's body in relation to the environment. They include the five primary senses—vision, hearing, taste, touch, and smell—as well as the senses of pressure, pain, temperature, kinesthesia, and equilibrium. Each sense has its own receptors, responds to characteristic stimuli, and has its own pathways to a specific part of the brain. Also called **sense modality**; **sensory modality**. **2.** *n.* a particular awareness of a physical dimension or property (e.g., time, space) or of an abstract quality, usually one that is desirable (e.g., humor, justice). **3.** *n.* good judgment or intelligence manifested by, or absent from, a person. **4.** *n.* the gist or general meaning of something, such as an argument, play, or event. **5.** *vb.* to perceive something using the senses. **6.** *vb.* to make an emotional or cognitive judgment about something, such as another person's mood.

**sense datum** see SENSATION.

**sense distance** an interval between two distinct sensations along a given dimension, such as the distance between the notes C and G on the musical scale.

**sense experience** awareness produced by stimulation of a sensory RECEPTOR.

**sense impression** see SENSATION.

**sense modality** see SENSE.

**sense of coherence** **1.** a perception of having clarity or intelligibility, that is, of being capable of thinking and expressing oneself in a clear and consistent manner. **2.** the ability to present a narrative of oneself in a way that is understandable and easy to follow. Sense of coherence is considered a PROTECTIVE FACTOR against the deleterious effects of stress on physical and mental health. [proposed by U.S.-born Israeli medical sociologist Aaron Antonovsky (1923–1994)]

**sense of equilibrium** the sense that enables the maintenance of balance while sitting, standing, walking, or otherwise maneuvering the body. A subset of PROPRIOCEPTION, it is in part controlled by the VESTIBULAR SYSTEM in the inner ear, which contains VESTIBULAR RECEPTORS that detect motions of the head. Also called **equilibratory sense**; **labyrinthine sense**; **static sense**; **vestibular sense**.

**sense of presence** **1.** the sense of being in a particular place or time period. **2.** awareness of one's current existence. **3.** an intimate sense of the nearness of invisible entities, such as God, spirits, and so on. **4.** in VIRTUAL REALITY technology, the user's sense of being inside the simulated environment.

**sense of self** an individual's feeling of IDENTITY, uniqueness, and self-direction. See also SELF-CONCEPT; SELF-IMAGE.

**sense organ** a body part, such as the eye or ear, that contains or comprises RECEPTOR cells, which are sensitive to particular stimuli, together with associated structures specialized to receive this sensory input. Also called **sensory organ**; **sensory receptor organ**.

**sense-ratios method** a system of scaling sensory magnitudes by adjusting pairs of stimuli until they are perceived to have the same ratio of intensity as a pair of reference stimuli.

**sensibilia** *pl. n.* things that are capable of being sensed.

**sensibility** *n.* **1.** a capacity to respond to an emotional situation with refined or intense feeling. **2.** the capacity to receive sensory input.

**sensible** *adj.* **1.** showing reason and sound judgment. **2.** capable of receiving sensory input (e.g., feeling pain). **3.** receptive to external influences. **4.** felt or perceived as real or material.

**sensitive** **1.** *adj.* responsive to stimuli, changes in the environment, feelings, or other phenomena; that is, having SENSITIVITY. **2.** *adj.* having well-developed or intense affective SENSIBILITY. **3.** *n.* in spiritualism and parapsychology, a person who is supposedly capable of receiving knowledge by paranormal means, as in CLAIRVOYANCE and TELEPATHY, or of perceiving AURAS and similar alleged phenomena beyond the range of normal perception. See also MEDIUM; PSYCHIC.

**sensitive dependence** the tendency for complex, dynamic systems to be highly sensitive to initial conditions, so that two such systems with starting points that are almost identical may become extremely divergent over time. In other words, the future states of complex systems are very dependent on small differences in their initial states. The best known example of sensitive dependence is the so-called BUTTERFLY EFFECT. One possible explanation for this phenomenon is that measurements in chaotic systems are imprecise, so that prediction becomes extremely difficult. See CHAOS THEORY.

**sensitive period** a stage in development when an organism can most rapidly acquire a particular skill or characteristic. For example, in humans, the 1st year of life is considered significant for the development of a secure attachment bond. Lack of appropriate growth-dependent experiences during a sensitive period does not permanently and irreversibly affect development, as it would during a CRITICAL PERIOD, but rather makes the acquisition process outside the period more difficult.

**sensitive soul** in the thought of ARISTOTLE, the type of

soul possessed by nonhuman animals. The sensitive soul has the capacity to receive and react to sense impressions but does not have a capacity for rational thought. Compare RATIONAL SOUL; VEGETATIVE SOUL.

**sensitive zone** any point on the body that is highly responsive to a particular type of stimulus, such as touch or pain.

**sensitivity** *n.* **1.** the capacity to detect and discriminate. In SIGNAL DETECTION THEORY, sensitivity is measured by D PRIME ( $d'$ ). **2.** the probability that results from a test will indicate a positive diagnosis given that the individual actually has the condition for which he or she is being tested. Compare SPECIFICITY. **3.** in physiology, the ability of a cell, tissue, or organism to respond to changes in its external or internal environment. Sensitivity is a fundamental property of all living organisms. **4.** awareness of and responsiveness to the feelings of others. **5.** susceptibility to being easily hurt or offended.

**sensitivity analysis** an evaluation of the extent to which the overall outcome of a model or system will be affected by potential changes to the input. This type of analysis is often used when the values of key variables are uncertain or subject to change, such as in financial planning. In research studies, sensitivity analysis enables researchers to understand the boundaries of their statistical models and design updated models that can account for the data at hand.

**sensitivity training** a group process focused on the development of self-awareness, productive interpersonal relations, and responsiveness to the feelings, attitudes, and needs of others. The primary method used in sensitivity training is open, unstructured discussion with a leader functioning as an observer and facilitator, although other techniques, such as ROLE PLAY, may be used. Sensitivity training is common in HUMAN RELATIONS TRAINING, with various types of groups (e.g., workers, executives) meeting for different time periods (e.g., once a week, over a week-end). See also ACTION RESEARCH; PERSONAL-GROWTH LABORATORY; T-GROUP. [originated by Kurt LEWIN and Carl ROGERS]

**sensitization** *n.* **1.** a form of nonassociative learning in which an organism becomes more responsive to most stimuli after being exposed to unusually strong or painful stimulation. **2.** the increased effectiveness of an eliciting stimulus as a function of its repeated presentation. Water torture, in which water is dripped incessantly onto a person's forehead, is a good example. **3.** see REVERSE TOLERANCE.

**sensor** *n.* **1.** a RECEPTOR cell or organ. **2.** a device that responds to the presence of something (e.g., a smoke detector).

**sensorimotor** *adj.* **1.** describing activity, behavior, or brain processes that involve both sensory (afferent) and motor (efferent) functions. **2.** describing a mixed nerve that contains both afferent and efferent fibers.

**sensorimotor aphasia** a combination of sensory or receptive APHASIA and motor or expressive aphasia, in which there is impairment or loss of the ability to perceive and understand language as well as to use it. See also GLOBAL APHASIA.

**sensorimotor arc** a REFLEX ARC consisting of an afferent sensory branch and an efferent motor branch.

**sensorimotor cortex** areas of the cerebral cortex that



are concerned with somatosensory and motor functions. The primary MOTOR CORTEX lies just in front of the central sulcus, whereas the PRIMARY SOMATOSENSORY AREA is just behind it.

**sensorimotor intelligence** in PIAGETIAN THEORY, knowledge that is obtained from sensory perception and motor actions involving objects in the environment. This form of cognition characterizes children in the SENSORIMOTOR STAGE.

**sensorimotor memory 1.** a recollection, commonly of a traumatic experience, that is encoded in terms of sensations and actions rather than verbally. Frequently, it is a memory of an event that occurred during the period of CHILDHOOD AMNESIA, which commonly lasts up to the age of 3 years. See also BODY MEMORY. **2.** see PROCEDURAL MEMORY.

**sensorimotor rhythm (SMR)** a rhythmical electrical impulse of 12 Hz to 14 Hz recorded over the ROLANDIC CORTEX in the brain. It is used in NEUROFEEDBACK studies and procedures. See BRAIN WAVES.

**sensorimotor stage** in PIAGETIAN THEORY, the first major stage of cognitive development, extending from birth through 2 years of age. Evolving over several subphases of increasingly complex behavior—from BASIC REFLEX to various degrees of CIRCULAR REACTION to MENTAL COMBINATION—the sensorimotor stage is characterized by the development of sensory and motor processes and by the infant's first knowledge of the world acquired by interacting with the environment. Some rudimentary awareness of the reality of time, space, and cause and effect is present. See also CONCRETE OPERATIONAL STAGE; FORMAL OPERATIONAL STAGE; PREOPERATIONAL STAGE.

**sensorineural deafness** the loss or absence of hearing function due to pathology in the inner ear or along the nerve pathway from the inner ear to the brainstem. Also called **nerve deafness**; **sensorineural impairment**. Compare CENTRAL DEAFNESS; CONDUCTION DEAFNESS.

**sensorineural lesion** any damage to structures of the auditory system along the nerve pathway from the inner ear to the associated brain centers. **Childhood sensorineural lesions** may be congenital and due to a failure of such structures to develop normally in the fetal stage, or they may result from postnatal infection (e.g., measles, mumps, scarlet fever), whereas **adult sensorineural lesions** are due to injury or disease, such as a tumor.

**sensorium** *n.* **1.** the human sensory apparatus and related mental faculties considered as a whole. The state of the sensorium is tested through the traditional MENTAL STATUS EXAMINATION; the sensorium may be **clear** (i.e., functioning normally) or **clouded** (lacking ability to concentrate and think clearly). **2.** see SENSORIUM COMMUNE.

**sensorium commune** a hypothetical location in the brain formerly held to be the seat of sensation in humans and nonhuman animals and the site for the operations of the SENSUS COMMUNIS. Also called **sensorium**.

**sensory** *adj.* relating to the SENSES, to SENSATION, or to a part or all of the neural apparatus and its supporting structures that are involved in any of these. See SENSORY SYSTEM.

**sensory acuity** the extent to which one is able to detect stimuli of minimal size, intensity, or duration.

**sensory adaptation** see ADAPTATION.

**sensory amimia** see AMIMIA.

**sensory amusia** see AMUSIA.

**sensory aphasia** see WERNICKE'S APHASIA.

**sensory aprosodia** an inability to understand the emotional inflections of language, that is, the rhythm, pitch, and "melody" of speech. Compare MOTOR APROSODIA.

**sensory area** any area of the cerebral cortex that receives input from sensory neurons, usually via the thalamus. There are specific areas for the different senses, and they are functionally differentiated into PRIMARY SENSORY AREAS and SECONDARY SENSORY AREAS. Also called **sensory cortex**; **sensory projection area**.

**sensory ataxia** lack of muscular coordination (see ATAXIA) due to the loss of the sense of limb movements (see PROPRIOCEPTION).

**sensory awareness training 1.** the methods used in SENSATE FOCUS and similar therapies to help an individual become more aware of his or her own feelings and sensations and learn new ways of experiencing them. **2.** in sport, training an athlete to become aware of the kinesthetic sensations experienced while performing and of the sensations related to arousal level.

**sensory bias** the display of sensory preferences that may not relate to species-typical signals. Female tungara frogs prefer a low-pitched chuck note that males add to courtship calls, and females of a closely related species also prefer low-pitched chuck notes, even though males of their species do not produce these notes. The preference for low-pitched chuck notes is a sensory bias that can be exploited by any males able to add such a note to their mating calls. See SENSORY EXPLOITATION.

**sensory circle** an area of the skin that gives rise to nervous activity when stimulated, analogous to a RECEPTIVE FIELD. It was thought that skin areas with greater spatial acuity would have smaller sensory circles. [first described by Ernst Heinrich WEBER]

**sensory conditioning** see SENSORY PRECONDITIONING.

**sensory consciousness** awareness of the visual, tactile, olfactory, auditory, and taste qualities of stimuli. Compare HIGHER ORDER CONSCIOUSNESS.

**sensory conversion symptoms** one of two types of symptoms of CONVERSION DISORDER, the other being MOTOR CONVERSION SYMPTOMS. Examples of sensory conversion symptoms include loss of touch or pain sensation, double vision, blindness, deafness, tinnitus, and hallucinations.

**sensory cortex** see SENSORY AREA.

**sensory cue** a visual, tactual, olfactory, gustatory, or auditory stimulus that evokes a response or a behavior pattern.

**sensory deficit** a loss, absence, or marked impairment of vision, hearing, taste, touch, or smell.

**sensory deprivation** the reduction of sensory stimulation to a minimum in the absence of normal contact with the environment. Sensory deprivation may be induced (e.g., via the use of a FLOTATION TANK) for experimental or clinical purposes, or it may occur in a real-life situation (e.g., in deep-sea diving). Although short periods of sensory deprivation can be beneficial, extended periods have detrimental effects, causing (among other things) hallucinations, delusions, hypersuggestibility, or panic. See also RESTRICTED ENVIRONMENTAL STIMULATION TECHNIQUE.

**sensory discrimination** the perceptual differentiation of stimuli, particularly closely related sensory stimuli (e.g., very similar shades of blue).

**sensory disorder** any disturbance in the optimum transmission of information from a sense organ to its appropriate reception point in the brain or spinal cord, particularly when related to an anatomical or physiological abnormality. An auditory disorder, for example, may be due to damage to the cochlear structures from injury or disease.

**sensory drive** see SENSORY EXPLOITATION.

**sensory engineering** see KANSEI ENGINEERING.

**sensory epilepsy** a type of epilepsy marked by seizures involving abnormal skin sensations (see PARESTHESIA), such as tingling, numbness, or burning. Such seizures may occur without loss of consciousness.

**sensory evoked potential** a type of EVOKED POTENTIAL recorded from electrodes placed on the scalp, overlying the cerebral cortex, in response to sensory stimulation. The stimuli may be visual, auditory, somatosensory, gustatory, or olfactory, and the mapping of sensory evoked potentials in the cortex helps to locate the different SENSORY AREAS. See also AUDITORY EVOKED POTENTIAL; VISUAL EVOKED POTENTIAL. Compare MOTOR EVOKED POTENTIAL.

**sensory exploitation** in animal behavior, the use of a SENSORY BIAS to gain increased REPRODUCTIVE SUCCESS by changing some feature of ornamentation or calling behavior to be more attractive to mates. For example, if low-frequency call notes are attractive to mates, then the first individuals to use these notes will achieve the greatest reproductive success. Also called **sensory drive**.

**sensory extinction** see PERCEPTUAL EXTINCTION.

**sensory field** the totality of the stimuli that impinge on a receptor or an individual at a given time.

**sensory gating** see GATING.

**sensory homunculus** a figurative representation, in distorted human form, of the relative sizes of the sensory areas in the brain that correspond to particular sensory parts of the body. The homunculus is arranged upside down with the largest proportional areas representing the face and hands. Compare MOTOR HOMUNCULUS.

**sensory inattention** see PERCEPTUAL EXTINCTION.

**sensory-information store (SIS)** see SENSORY MEMORY.

**sensory input** the stimulation of a sense organ, causing a nerve impulse to travel to its appropriate destination in the brain or spinal cord.

**sensory integration** the neural processes involved in perceiving, organizing, and evaluating sensory information across modalities, such as vision and hearing, and producing an adaptive response via impulses transmitted through the motor nerves. Development or enhancement of **sensory-integrative functioning** is an important goal of OCCUPATIONAL THERAPY.

**sensory integration dysfunction** a condition characterized by difficulties in organizing, processing, and analyzing sensory input (touch, movement, body awareness, sight, sound, smell, and taste). Also called **sensory processing disorder**. [first described by U.S. occupational therapist and psychologist A. Jean Ayres (1920–1989)]

**sensory intensity** the perceived strength or magnitude of a physical stimulus, predictably related to its actual magnitude by psychophysical laws. See STIMULUS-INTENSITY DYNAMISM.

**sensory interaction** the integration of sensory processes when performing a task, as in maintaining balance using sensory input from both vision and PROPRIOCEPTION. See also CROSS-MODAL ASSOCIATION; INTERSENSORY PERCEPTION; PERCEPTUAL SYNTHESIS.

**sensory leakage** in experiments on EXTRASENSORY PERCEPTION, the conveying of information about the TARGET to the SUBJECT through ordinary sensory channels, often by inadvertent cues from the tester. See also DEMAND CHARACTERISTICS; EXPERIMENTER BIAS.

**sensory memory** brief storage of information from each of the senses, in a relatively unprocessed form beyond the duration of a stimulus, for recoding into another memory (such as SHORT-TERM MEMORY) or for comprehension. For instance, sensory memory for visual stimuli, called ICONIC MEMORY, holds a visual image for less than a second, whereas that for auditory stimuli, called ECHOIC MEMORY, retains sounds for a little longer. Also called **sensory-information store (SIS)**; **sensory register**.

**sensory modality** see SENSE.

**Sensory Modality Assessment and Rehabilitation Technique (SMART)** see VEGETATIVE STATE.

**sensory modulation dysfunction** a condition characterized by difficulties in responding appropriately to sensory input (touch, movement, body awareness, sight, sound, smell, and taste). A person may be overresponsive or underresponsive to sensations or alternate rapidly between both response patterns.

**sensory neglect** an inability to attend to sensory information, usually from the left side of the body, as a result of brain injury, most often to the right hemisphere. Also called **perceptual neglect**. See MOTOR NEGLECT; UNILATERAL NEGLECT; VISUAL NEGLECT.

**sensory nerve** any nerve that conveys impulses from a sense organ to the central nervous system.

**sensory neuron** a neuron that receives information from the environment, via specialized RECEPTOR cells, and transmits this information—in the form of nerve impulses—through SYNAPSES with other neurons to the central nervous system.

**sensory organ** see SENSE ORGAN.

**sensory organization** the neural process of structuring and integrating impulses from sensory receptors so as to enable meaningful perception.

**sensory overload** a state in which one's senses are overwhelmed with stimuli, to the point that one is unable to process or respond to all of them. See also COGNITIVE OVERLOAD; COMMUNICATION OVERLOAD; INFORMATION OVERLOAD; STIMULUS OVERLOAD.

**sensory paralysis** a condition in which sensory function is impaired but movement is not necessarily lost.

**sensory pathway** any of the routes followed by nerve impulses traveling from sense organs toward sensory areas of the brain. See AFFERENT PATHWAY; NEURAL PATHWAY.

**Sensory Perceptual Examination** see REITAN-KLØVE SENSORY PERCEPTUAL EXAMINATION.

**sensory preconditioning** a form of CLASSICAL CONDITIONING established by initially pairing two neutral stimuli—A and B—and subsequently pairing A with an unconditioned stimulus. If B comes to elicit a response, then sensory preconditioning has occurred. Also called **sensory conditioning**.

**sensory processing disorder** see SENSORY INTEGRATION DYSFUNCTION.

**sensory projection area** see SENSORY AREA.

**sensory psychophysiology** the study of the relation between psychological and physiological functioning as it pertains to the senses and perception.

**sensory receptor organ** see SENSE ORGAN.

**sensory register** see SENSORY MEMORY.

**sensory root** see DORSAL ROOT.

**sensory spot** a skin spot or location of high sensitivity to tactile, thermal, or pain stimuli.

**sensory stimulation** the elicitation of a response in a sensory receptor by a stimulus.

**sensory substitution** the perception of a stimulus normally analyzed by one sense through the activity of another sense. Tactile sensations can substitute for visual input, for example, when the visual world is transcribed into tactile sensations for an individual who is blind. Sensory substitution requires an active translation of stimulation between sensory systems, in contrast to SYNESTHESIA, which is an involuntary association of one sense with another or one sensory attribute with another.

**sensory summation** the combining and integrating of sensory inputs at different levels of the nervous system. For example, sensory input will increase when multiple stimuli are summed over time (see TEMPORAL SUMMATION) or across space (see SPATIAL SUMMATION).

**sensory suppression** the phenomenon occurring in any sensory modality when an individual is given two sensory inputs simultaneously (such as a touch on the hand and face) but perceives only one of the stimuli.

**sensory system** the total structure involved in SENSATION, including the sense organs and their RECEPTORS, afferent sensory neurons, and SENSORY AREAS in the cerebral cortex at which these tracts terminate. There are separate systems for each of the senses. See AUDITORY SYSTEM; GUSTATORY SYSTEM; OLFACTORY SYSTEM; SOMATOSENSORY SYSTEM; VISUAL SYSTEM; VESTIBULAR SYSTEM.

**sensory test** a test designed to measure any of various sensory abilities, such as visual acuity, depth perception, color discrimination, or auditory acuity.

**sensory transduction** see TRANSDUCTION.

**sensual** *adj.* **1.** referring to the senses, particularly gratification of or appeal to the senses. **2.** referring to physical or erotic sensation.

**sensum** *n.* (*pl.* *sensa*) see SENSATION.

**sensuous** *adj.* describing the sensory aspect of an experience or something that is capable of arousing the senses.

**sensus communis** in the thought of ARISTOTLE, the mental faculty that takes data provided by the five senses and integrates them into unified perceptions. The operations of the *sensus communis* (Latin, “common sense”) were thought to occur in the SENSORIUM COMMUNE.

**sentence-completion test** a test in which the participant must complete an unfinished sentence by filling in the specific missing word or phrase. The test is typically used to evaluate personality. The participant is presented with an introductory phrase to which he or she may respond in any way. An example might be “Today I am in a \_\_ mood.” As a projective test, the sentence-completion test is an extension of the WORD-ASSOCIATION TEST in that responses are free and believed to contain psychologically meaningful material. Also called **incomplete-sentence test**.

**sentence-repetition test** a test in which the participant is required to repeat sentences of increasing difficulty and complexity directly after the examiner reads them. It is used primarily to measure memory skills.

**sentence-verification task** a procedure in which participants are briefly presented with simple sentences and asked to make quick judgments about them. For example, a person might have 5 seconds to read the sentence *The sky is blue* and respond whether it is true or false. Numerous variations of this basic task exist, including ones in which the focus is on different sentence characteristics or types of responses, ones in which sentences are matched with pictures, and ones in which individuals simultaneously perform other tasks (e.g., imagining a particular visual pattern). The sentence-verification task most commonly is used in cognitive research on SEMANTIC MEMORY and verbal comprehension.

**sentence** *n.* **1.** the simplest or most primitive form of cognition, consisting of a conscious awareness of stimuli without association or interpretation. **2.** the state of being SENTIENT.

**sentient** *adj.* capable of sensing and recognizing stimuli.

**sentimentality** *n.* the quality of being excessively or affectedly swayed by emotional situations, especially those of a romantic or maudlin nature. See also EMOTIONALITY. —**sentimental** *adj.*

**sentinel behavior** a form of animal behavior in which one member of a group watches for potential predators while others in the group forage, rest, or engage in social interactions. Sentinel behavior is often seen in COOPERATIVE-BREEDING species, with different individuals taking turns as sentinels with those carrying young or feeding.

**sentinel event** in health administration, an unexpected occurrence or variation in service delivery involving death or serious physical or psychological injury. The event is called “sentinel” because it sends a signal or sounds a warning that requires immediate attention.

**SEP** abbreviation for SOMATOSENSORY EVOKED POTENTIAL.

**separated display** in ergonomics, a machine display that separates critical information from more secondary information. The design is based upon the need to highlight important pieces of information so they stand out from other information on the display. Compare INTEGRATED DISPLAY.

**separation anxiety** the normal apprehension experienced by a young child when away (or facing the prospect of being away) from the person or people to whom he or she is attached (particularly parents). Separation anxiety is most active between 6 and 10 months of age. Separation from loved ones in later years may elicit similar anxiety. See SEPARATION DISTRESS.

**separation anxiety disorder** in DSM-IV-TR, an anx-

iety disorder occurring in childhood or adolescence that is characterized by developmentally inappropriate, persistent, and excessive anxiety about separation from the home or from major attachment figures. Other features may include marked ANTICIPATORY ANXIETY over upcoming separation and persistent and excessive worry about harm coming to attachment figures or about major events that might lead to separation from them (e.g., getting lost). There may also be SCHOOL REFUSAL, fear of being alone or going to sleep without major attachment figures present, separation-related nightmares, and repeated complaints of physical symptoms (e.g., vomiting, nausea, headaches, stomachaches) associated with anticipated separation. These symptoms cause clinically significant distress or impairment in functioning. In *DSM-5*, the criteria have been adjusted to recognize the existence of this disorder in adults; symptoms must be present for at least 6 months in adults versus 4 weeks in children.

**separation distress** discomfort and anxiety felt by an individual upon losing contact with an attachment figure, such as by a child after losing contact with a caregiver or by an adult in reaction to the traumatic loss of a spouse or partner. See SEPARATION ANXIETY.

**separation-individuation** *n.* a developmental phase in which the infant gradually differentiates himself or herself from the mother, develops awareness of his or her separate identity, and attains relatively autonomous status. [defined by Hungarian-born U.S. child psychoanalyst Margaret Schönberger Mahler (1897–1985)]

**separation strategy** see ACCULTURATION STRATEGIES.

**sepsis** *n.* the condition of tissues contaminated by the presence of pus-forming bacteria or other microorganisms or by the toxic substances produced by such microorganisms. When spread throughout the bloodstream, the condition is called SEPTICEMIA. —**septic** *adj.*

**sept** *n.* a subdivision of a CLAN or other large social unit, especially one based on (supposed) common ancestry. In Scotland and Ireland, a clan is often composed of several septs, which may be affiliated through a common loyalty or interest rather than a common ancestor. See also DESCENT GROUP.

**septal area** a region of the forebrain that contains the **septal nuclei** and the SEPTUM PELLUCIDUM, which separates the lateral ventricles. The septal nuclei, which include the NUCLEUS ACCUMBENS, form an integral part of the LIMBIC SYSTEM; they contribute fibers to the MEDIAL FOREBRAIN BUNDLE and have interconnections with the amygdala, hippocampus, and regions of the hypothalamus. Functionality of this area includes pleasure generation and anger suppression.

**septicemia** *n.* a severe (usually bacterial) infection of the bloodstream, typically as a result of microorganisms invading from an infection site elsewhere in the body. Septicemia may be characterized by fever, chills, and skin eruptions. A particularly hazardous complication is spread of the infection to tissues of the nervous system. Also called **bacteremia**; **blood poisoning**. See also SEPSIS.

**septum** *n.* (*pl.* **septa**) a thin partition or dividing wall, such as the nasal septum (see NASAL CAVITY) or the SEPTUM PELLUCIDUM. —**septal** *adj.*

**septum pellucidum** a triangular, two-layered translucent membrane separating the anterior horns of the two LATERAL VENTRICLES of the brain. It touches the CORPUS

CALLOSUM and the body of the FORNIX and is part of the SEPTAL AREA.

**sequela** *n.* (*pl.* **sequelae**) a residual effect of a disease, injury, or mental condition, often (but not necessarily) in the form of persistent or permanent impairment. Examples include paralysis, which may be the sequela of POLIOMYELITIS, and flashbacks, which may be the sequelae of traumatic stress.

**sequence effect** in WITHIN-SUBJECTS DESIGNS, a difference in scores that emerges because of a particular arrangement of treatments—that is, the presentation of one level of the independent variable has an effect on responses to another level of that variable. A researcher can test for a sequence effect by administering the treatments in various different arrangements (e.g., the arrangement ABC vs. ACB, vs. BCA, and so forth). The sequence effect is not to be confused with the ORDER EFFECT.

**sequential analysis** a class of statistical procedures in which decisions about sample size and the type of data to be collected are made or modified as the study proceeds, based on the cumulative findings. This approach contrasts with one in which the sample size is determined in advance and data are not analyzed until the entire sample is collected. A common form of sequential analysis is one in which data are collected until a desired outcome or level of precision is reached. Also, some clinical trials require an approach that allows researchers to stop data collection if the treatment is clearly not working or if participants are being harmed in some way.

**sequential design 1.** a research design that allows for termination of the study at various points of data collection if the results do not conform to a desired pattern or if there is danger or cost to participants. See SEQUENTIAL ANALYSIS. **2.** see COHORT-SEQUENTIAL DESIGN.

**sequential effect** in choice-reaction tasks, the influence of an immediately preceding trial (or trials) on performance in the current trial. As with PRIMING effects, sequential effects have both automatic and strategic components.

**sequential processing** see SERIAL PROCESSING.

**sequential regression** see HIERARCHICAL REGRESSION.

**sequential sampling** a method of NONPROBABILITY SAMPLING in which the researcher draws a group of units from the larger population, conducts a study within a specified time frame, analyzes the data, and then determines whether another sample is needed. The process can be repeated several times. The sequential approach enables a researcher to determine when enough data have been collected and to fine-tune his or her methodology over repeated studies.

**Serax** *n.* a trade name for OXAZEPAM.

**serendipity** *n.* the knack of making fortunate discoveries by accident. Serendipity is often considered a characteristic of the creative scientist. The word was coined in 1754 by British writer Horace Walpole (1717–1797) from the title of his story “The Three Princes of Serendip.” Serendip was an old Arabic name for Sri Lanka, whose princes were said to have had this ability.

**Serentil** *n.* a trade name for MESORIDAZINE.

**serial anticipation method** a technique that involves learning to associate a stimulus (e.g., an item in a list or series) with a stimulus or response that follows (e.g., the next

item in the list or series), so that when subsequently given the stimulus, one can produce the response or recall the next item in the series. This method is frequently used in PAIRED-ASSOCIATES LEARNING and SERIAL RECALL. Also called **anticipation method**; **anticipation learning method**.

**serial behavior** an integrated sequence of responses that elicit each other in fixed order (e.g., playing music). The individual responses that comprise, and occupy specific positions within, the sequence are referred to as **serial responses**.

**serial correlation** see AUTOCORRELATION.

**serial exhaustive search** a hypothesized process of searching for a particular target item in SHORT-TERM MEMORY that involves inspecting each item in turn for a match.

**serial-exploration method** see METHOD OF JUST NOTICEABLE DIFFERENCES.

**serial interpretation** a psychoanalytic technique in which the analyst studies a series of consecutive dreams that, when taken as a group, provide clues that would be overlooked in interpretation of a single, isolated dream. See also RECURRENT DREAM.

**serial killer** an individual who repeatedly commits murder, typically with a distinct pattern in the selection of victims, location, and method.

**serial learning** the learning of a sequence of items or responses in a precise order. For example, actors must learn their lines in sequence. Also called **serial-order learning**.

**serial memory** remembering a list of items in sequence. See SERIAL POSITION EFFECT; SERIAL RECALL.

**serial-memory search** a RETRIEVAL process in which each item in SHORT-TERM MEMORY is examined in the order in which it was entered into memory.

**serial monogamy** see MONOGAMY.

**serial position curve** a graphic representation of the number of items that can be remembered as a function of the order in which they were presented in a list. Items at the beginning and end of the list are usually remembered best, thus producing a U-shaped memory curve.

**serial position effect** the effect of an item's position in a list of items to be learned on how well it is remembered. The classic serial position effect shows best recall of the first items from a list (see PRIMACY EFFECT) and good recall of the last items (see RECENCY EFFECT), while the middle items are less well recalled.

**serial processing** INFORMATION PROCESSING in which only one sequence of processing operations is carried on at a time. Those who hold that the human information-processing system operates in this way argue that the mind's apparent ability to carry on different cognitive functions simultaneously is explained by rapid shifts between different information sources. Also called **intermittent processing**; **sequential processing**. Compare PARALLEL PROCESSING. See also SINGLE-CHANNEL MODEL.

**serial recall** recalling items in the order in which they were presented. For instance, to remember a telephone number, the digits must be correctly sequenced. See also SERIAL MEMORY.

**serial reproduction** a method for studying memory in which one person reads a set of information before repro-

ducing it for another person, who then reproduces it for a third person, who does the same for a fourth, and so on. Serial reproduction is widely regarded as a model for the social communication of retained information, and as such it is an important experimental tool in the analysis of rumor and gossip transmission, stereotype formation, and similar phenomena. The processes at work in changes that occur in serial reproductions by different individuals—that is, leveling (simplification), sharpening (emphasis on selected details), and ASSIMILATION—have been of great theoretical importance both in social psychology and in theories of personality. See also CHAIN REPRODUCTION; REPEATED REPRODUCTION. [developed in 1932 by Frederic C. BARTLETT]

**serial response** see SERIAL BEHAVIOR.

**serial search** in a search task, the process of searching for one target at a time. Compare PARALLEL SEARCH.

**seriation** *n.* the process of arranging a collection of items in a specific order (series) on the basis of a particular dimension (e.g., size). According to PIAGETIAN THEORY, this ability is necessary for understanding the concepts of numbers, time, and measurement and is acquired by children during the CONCRETE OPERATIONAL STAGE.

**serious emotional disturbance (SED)** see EMOTIONAL DISTURBANCE.

**SERM** abbreviation for selective estrogen receptor modulator. See ANTIESTROGEN.

**Sernyl** *n.* a trade name for a brand of phencyclidine hydrochloride, an animal anesthetic with hallucinogenic properties sometimes taken as a drug of abuse (see PCP).

**Seroquel** *n.* a trade name for QUETIAPINE.

**serotonergic** *adj.* responding to, releasing, or otherwise involving serotonin. For example, a **serotonergic neuron** is one that employs serotonin as a neurotransmitter. In the brain, most **serotonergic pathways** originate in the RAPHE NUCLEUS and project diffusely to other sites in the brain and to the spinal cord.

**serotonin** *n.* a common monoamine neurotransmitter in the brain, particularly the RAPHE NUCLEUS, and in other parts of the central nervous system; it also is found in the gastrointestinal tract, in smooth muscles of the cardiovascular and bronchial systems, and in blood platelets. It is synthesized from the dietary amino acid L-tryptophan (see TRYPTOPHAN HYDROXYLASE), and in the pineal gland it is converted to MELATONIN. It is primarily degraded by MONOAMINE OXIDASE, which yields its principal metabolic product, 5-HYDROXYINDOLEACETIC ACID (5-HIAA). Serotonin has roles in emotional processing, mood, appetite, sexual desire and performance, sleep, pain processing, hallucinations, and reflex regulation. For example, levels of serotonin correlate negatively with aggression, and release of serotonin may promote sleep. It is implicated in many psychological conditions, including depressive disorders, anxiety disorders, sleep disorders, aggression, and psychosis; many common psychotropic drugs affect neurotransmission mediated by serotonin. Also called **5-hydroxytryptamine (5-HT)**.

**serotonin agonist** any agent that increases the affinity for, or availability of, serotonin at various serotonin receptors in the brain or peripheral tissues. Commonly used INDIRECT AGONISTS are the SSRIs (e.g., fluoxetine, citalopram), which work by blocking the presynaptic reuptake of serotonin, thereby increasing the availability of serotonin at postsynaptic receptor sites. Other serotonin agonists exert

their effects directly at the receptor site; for example, the TRIPTANS are direct agonists at receptor subtypes 5-HT<sub>1B</sub> and 5-HT<sub>1D</sub>. The anxiolytic agent BUSPIRONE is a PARTIAL AGONIST at the postsynaptic 5-HT<sub>1A</sub> receptor, whereas the serotonin-like hallucinogens (e.g., LSD) act as partial agonists at 5-HT<sub>2A</sub> receptors.

**serotonin and norepinephrine reuptake inhibitor** see SNRI.

**serotonin antagonist** any agent that opposes the action of serotonin. Such drugs include CYPROHEPTADINE and METHYSERGIDE, which are used for the prevention of migraine attacks, and the antiemetic ONDANSETRON.

**serotonin receptor** any of various receptors that bind and respond to serotonin (5-hydroxytryptamine; 5-HT). They occur in the brain and in peripheral areas and have different sensitivities that can be measured by susceptibility to ligands or blockers. At least 15 classes of serotonin receptors, affecting a variety of physiological and psychological processes, have been identified. They are designated by subscript numbers and letters (e.g., 5-HT<sub>1A</sub>, 5-HT<sub>1B</sub>, 5-HT<sub>1D</sub>, 5-HT<sub>2A</sub>).

**serotonin reuptake inhibitor (SRI)** see SSRI.

**serotonin reuptake transporter** see SEROTONIN TRANSPORTER.

**serotonin syndrome** a collection of symptoms, including fever, agitation, confusion, delirium, and increased heart rate, due to excess activity of the neurotransmitter serotonin. It may result from drug interactions that increase amounts of available serotonin to toxic levels.

**serotonin transporter (SERT)** a protein that regulates the signaling and availability of serotonin in the central nervous system via REUPTAKE. It is believed to have major roles in depression, obsessive-compulsive disorder, and social phobia and is a target of SSRI treatment. A variant, with repeated amino acids, of the gene that codes for SERT but that may cause reduced serotonin reuptake is called the **serotonin transporter-linked polymorphism region (5-HTTLPR)**. This polymorphism has been associated with several mental disorders, including schizophrenia, mood disorders, and autism. Also called **serotonin reuptake transporter**.

**serous otitis media** see OTITIS MEDIA.

**SERT** abbreviation for SEROTONIN TRANSPORTER.

**Sertoli cell** any of the elongated cells lining the SEMINIFEROUS TUBULES that protect and nourish developing sperm. As the sperm approach maturity, they become oriented in the seminiferous tubules so that they are partly embedded in the Sertoli cells. [Enrico **Sertoli** (1842–1910), Italian histologist]

**sertraline** *n.* an SSRI that is used for the treatment of major depression, panic disorder, posttraumatic stress disorder, and obsessive-compulsive disorder. It has also been indicated for the treatment of premenstrual dysphoric disorder. U.S. trade name: **Zoloft**.

**service delivery system** a complex, interrelated set of organizational (i.e., people and providers) and technological inputs and processes, resulting in the provision of such services as mental health interventions, public health programs, social welfare, and education.

**servomechanism** *n.* a device that automatically activates changes or corrections in the performance of certain

functions according to a predetermined SET POINT. For example, the cruise control of an automobile automatically adjusts engine output to maintain a constant speed. Also called **servo**. See also COMPARATOR.

**SES** abbreviation for SOCIOECONOMIC STATUS.

**sessile** *adj.* **1.** describing an organism that is permanently attached to its SUBSTRATE, such as a sea anemone. **2.** attached broadly by a base, rather than by a stalklike structure, as in a sessile lesion.

**set** *n.* **1.** a temporary readiness to respond in a certain way to a specific situation or stimulus. For example, a sprinter gets set to run once the starting gun fires (a MOTOR SET); a parent is set to hear his or her baby cry from the next room (a PERCEPTUAL SET); and a poker player is set to use a tactic that has been successful in other games (a MENTAL SET). See also PREPARATORY SET. **2.** a collection of psychological factors (expectations, beliefs, mood, etc.) that can influence an individual's response to a drug. **3.** in mathematics and logic, a collection of entities that is itself regarded as an entity. A set that is defined by a condition, such that its members must possess a particular attribute or attributes, is known as a CLASS.

**SET** acronym for STUDENTS' EVALUATION OF TEACHING.

**set-level compatibility effect** see STIMULUS–RESPONSE COMPATIBILITY.

**set point** the desired value in a SERVOMECHANISM, such as the level at which a thermostat is set to maintain a reasonably constant temperature. By extension to physiological and behavioral systems, set point refers to the preferred level of functioning of an organism or of a system within an organism. When a set point is exceeded (i.e., when physiological responses become higher than the set point), compensatory events take place to reduce functioning; when a set point is not reached, compensatory processes take place to help the organism or system reach the set point. According to the **set-point theory of happiness**, individuals each have a particular set point, or baseline, of SUBJECTIVE WELL-BEING that is generally stable throughout life and that they are likely to return to despite life-changing events, whether positive (e.g., winning the lottery) or negative (e.g., sustaining a spinal cord injury). As applied to ATTACHMENT THEORY, set point refers to the physical proximity to a primary caregiver in conditions of threat; that is, threat leads the child to seek physical closeness to an attachment figure. This proximity becomes a set point for intimacy later in life and is sometimes used to explain why people vary in their levels of subjective well-being. See also HEDONIC TREADMILL.

**set/reset model** the theory that people's default (set) tendency when making judgments about a target is to assimilate contextual elements into those judgments but that, with CONTRAST EFFECTS occurring under relatively deliberative conditions, people actively attempt to partial out (reset) the contextual influence and instead inadvertently partial out elements of the target itself. Because resetting requires substantial cognitive effort, contrast effects are considered unlikely to occur under nondeliberative conditions. See also ASSIMILATION; FLEXIBLE CORRECTION MODEL; INCLUSION/EXCLUSION MODEL. [proposed by U.S. psychologist Leonard L. Martin and his colleagues]

**set theory** the branch of mathematics and logic that is concerned with the properties of SETS (i.e., collections of entities that are themselves treated as entities). See also CLASS THEORY.

**setwise regression** see ALL-POSSIBLE-SUBSETS REGRESSION.

**set zone** the range of values for a variable that a FEEDBACK SYSTEM is to maintain. See also CRITICAL RANGE.

**SEU** abbreviation for SUBJECTIVE EXPECTED UTILITY.

**seven plus or minus two** the number of items that can be held in SHORT-TERM MEMORY at any given time and therefore accurately perceived and recalled after a brief exposure (see CHUNKING). The phrase originated in the title of an article (1956) by George Armitage MILLER, "The Magical Number Seven, Plus or Minus Two: Some Limits on Our Capacity for Processing Information."

**seventh cranial nerve** see FACIAL NERVE.

**severe mental retardation** an older diagnostic category applying to those with IQs of 20 to 34, comprising about 7% of people with MENTAL RETARDATION. Although able to manage basic self-care activities such as dressing and eating, these individuals typically do not acquire much more than rudimentary communication, social, educational, and vocational skills and generally require significant assistance and supervision. Additionally, sensory and motor deficits are common.

**severity error** a type of rating error in which the ratings are consistently overly negative, particularly with regard to the performance or ability of the participants. It is caused by the rater's tendency to be too strict or negative and thus to give undeservedly low scores. Also called **severity bias**. Compare LENIENCY ERROR.

**sex** *n.* **1.** the traits that distinguish between males and females. Sex refers especially to physical and biological traits, whereas GENDER refers especially to social or cultural traits, although the distinction between the two terms is not regularly observed. **2.** the physiological and psychological processes related to procreation and erotic pleasure.

**sex change** see SEX REASSIGNMENT.

**sex characteristic** any of the traits associated with sex identity. **Primary sex characteristics** (e.g., testes in males, ovaries in females) are directly involved in reproduction of the species. **Secondary sex characteristics** are features not directly concerned with reproduction, such as voice quality, facial hair, and breast size. Also called **sexual characteristic**.

**sex chromatin** a condensed mass of CHROMATIN that is observed in the nucleus of nondividing SOMATIC cells of females. It is not observed in the somatic cells of normal males. The substance represents material within the X chromosome that is not involved in somatic-cell metabolism. The presence of sex chromatin in somatic cells is generally regarded as proof of the sexual identity of females. Also called **Barr body**. See also CHROMATIN NEGATIVE; CHROMATIN POSITIVE.

**sex-chromosomal aberration** any disorder of structure, function, or both that is associated with the complete or partial absence of a sex chromosome or with the presence of extra sex chromosomes. Examples of such disorders are KLINEFELTER'S SYNDROME, XYY SYNDROME, and TURNER SYNDROME.

**sex chromosome** a chromosome that determines whether an individual is female or male. Humans and other mammals have two sex chromosomes: the X CHROMOSOME, which carries genes for certain sexual traits and occurs in both females and males; and the smaller Y CHRO-

MOSOME, which is normally found only in males. An individual usually is considered to be a female if the body cells contain the XX combination of chromosomes and male if the cells contain the XY combination, regardless of physical traits or signs of hermaphroditism. Diseases coded by genes that are carried only on a sex chromosome (usually the X chromosome) are called SEX-LINKED conditions.

**sex counseling** guidance provided by therapists to sex partners in such matters as birth control, infertility, and problems with sexual performance or response.

**sex determination** the genetic mechanism that determines the sex of offspring. In humans, a fertilized egg with two X CHROMOSOMES becomes a female, and a fertilized egg with one X and one Y CHROMOSOME becomes a male. See SEX DIFFERENTIATION.

**sex differences** **1.** the differences in physical features between males and females. These include differences in brain structures as well as differences in primary and secondary SEX CHARACTERISTICS. **2.** the differences between males and females in the way they behave and think, with such differences often viewed as driven by actual biological disparity (nature) rather than by differing environmental factors (nurture). See also GENDER DIFFERENCES. Compare SEX ROLE.

**sex differentiation** the process of acquiring distinctive sexual features during the course of development. Human sexual differentiation is determined genetically at the time of fertilization, primarily by the presence or absence of a Y CHROMOSOME. Fertilized eggs containing a Y chromosome develop as male embryos, whereas ones lacking a Y chromosome develop as females. This is due to the presence on the Y chromosome of a particular gene, called **SRY (sex reversal on Y)**. It encodes a testis-determining factor that, via a cascade of signals, triggers the development of testes and other male reproductive organs. In the absence of this gene, the embryo develops along the default pathway, with ovaries and other female organs.

**sex discrimination** differential treatment of individuals on the basis of their biological distinction as male or female. Although such treatment may sometimes favor women relative to men, in contemporary society, most sex discrimination favors men over women; common manifestations include unfair hiring and promotion practices, lower wages paid to women doing the same type of work as men, and a tendency to undervalue characteristics and interests associated with women. Changing attitudes toward marriage, improved availability of day care facilities, increased educational opportunities, role changes in the home, and workforce shortages in some industries have led to a heightened awareness of the erroneous nature of certain SEX-ROLE STEREOTYPES and altered conceptions of what men and women can do. In addition, in many societies, legislation prohibits sex discrimination. Nevertheless, sex discrimination persists and contributes to a number of social problems, including inadequate support for working women, lower standards of health care for women, and violence against women. Also called **sexual discrimination**. See also GLASS CEILING; PREJUDICE; SEXISM.

**sex distribution** see SEX RATIO.

**sex drive** an arousal state precipitating the desire for sexual gratification and, usually, for sexual reproduction. Although it is not necessary for an individual's survival, it is considered a PRIMARY DRIVE because it is essential for species survival. In many animals, sexual activity is cyclical

(e.g., seasonal or dependent on cyclical hormone release), although a variety of factors (e.g., external stimulation) may arouse the drive. Also called **sexual drive**. See **LIBIDO**.

**sex education** a formal course of instruction in reproductive processes that is presented in a classroom setting. Sex education ideally provides young adolescents with authoritative and objective information about both the psychological and physical aspects of sexual behavior.

**sex feeling** see **SEXUAL FEELING**.

**sex hormone** any of the hormones that stimulate various reproductive functions. Primary sources of sex hormones are the male and female gonads (i.e., testis and ovary), which are stimulated to produce sex hormones by the **FOLLICLE-STIMULATING HORMONE** and **LUTEINIZING HORMONE** secreted by the pituitary gland. The principal male sex hormones (**ANDROGENS**) include testosterone; female sex hormones include the **ESTROGENS**, **PROGESTERONE**, and **PROLACTIN**.

**sex hygiene** the health-maintenance procedures related to sexual activity, such as the prevention or control of sexually transmitted infections. Also called **sexual hygiene**.

**sex identification** see **SEXUAL IDENTIFICATION**.

**sex identity** the purely biologically determined sexual status of an individual as male or female. See also **GENDER IDENTITY**.

**sex-influenced character** an inherited trait that is dominant in one sex but recessive in the other. For example, male-pattern baldness is controlled by an allele that seems to be dominant in men but recessive in women. Hence, its full effects rarely appear in women.

**sex instinct** see **SEXUAL INSTINCT**.

**sexism** *n.* discriminatory and prejudicial beliefs and practices directed against one of the two sexes, usually women. Sexism is associated with acceptance of **SEX-ROLE STEREOTYPES** and can occur at multiple levels: individual, organizational, institutional, and cultural. It may be overt, involving the open endorsement of sexist beliefs or attitudes; covert, involving the tendency to hide sexist beliefs or attitudes and reveal them only when it is believed that one will not suffer publicly for them; or subtle, involving unequal treatment that may not be noticed because it is part of everyday behavior or perceived to be unimportant. See also **PREJUDICE**; **SEX DISCRIMINATION**. —**sexist** *adj.*

**sex-limited** *adj.* describing a trait or anomaly that is expressed only in one sex, despite being determined by genes carried on the **AUTOSOMES** rather than the sex chromosomes. For example, the genes governing the development of ovaries and breasts are expressed only in females, whereas genes determining sperm production are expressed only in males.

**sex-linked** *adj.* describing either a gene that is located on one of the sex chromosomes, typically the X chromosome (**X-linked**), or a trait determined by such a gene. The process whereby a sex-linked gene or trait is passed on from parent to offspring is called **sex-linked inheritance**. Sex-linked inherited diseases from a defective gene on the X chromosome include hemophilia, itself called **X-linked recessive** because the defective gene is usually a **RECESSIVE ALLELE**. It is carried by females and expressed mostly in their male offspring. In their daughters, who have two X chromosomes, the defective gene is usually masked by the normal, dominant allele on the other X chromosome,

whereas in their sons, who have an X and a Y chromosome and in whom the Y chromosome lacks many of the alleles of the X chromosome, masking cannot occur. Disorders that are **X-linked dominant**, in which only one copy of an allele of a defective gene on the X chromosome is sufficient to cause inherited disorder, may occur in either male or female offspring depending on which parent is affected. A form of sex-linked inheritance in which a recessive trait is inherited from father to son by way of a single gene on the Y chromosome (**Y-linked**) affects only male offspring. Diseases or disorders passed on through Y-linked inheritance are rare.

**sex-negativity** *n.* a negative attitude or stance toward any sexual behavior other than procreative marital coitus. Compare **SEX-POSITIVITY**.

**sex object** see **SEXUAL OBJECT**.

**sex offense** a sex act that is prohibited by law. An individual who has committed such an offense is called a **sex offender**. Some crimes are acts of violence involving sex, and others are violations of social taboos; there is much variation, by culture and jurisdiction, concerning which behaviors are considered crimes and how they may be punished. Some jurisdictions consider certain consensual sex acts to be illegal. Common examples of sex offenses include forcible and statutory rape, child molestation, incest, prostitution and pimping, bestiality, sodomy, sex murder, and forcible sexual assault without penetration. Also called **sexual offense**. See also **MOLESTATION**.

**sexological examination** the study of an individual's sexual behavior in terms of physiological, psychological, sociological, and specific genetic and environmental influences.

**sexology** *n.* the study of sexuality, particularly among human beings, including the anatomy, physiology, and psychology of sexual activity and reproduction. —**sexological** *adj.* —**sexologist** *n.*

**sex-positivity** *n.* a positive attitude or stance toward sexual activity between consenting individuals when this is seen as promoting healthy relationships and forms of self-expression. Sex is seen as neither good nor bad, per se, and the purpose of sexual relations is not deemed to be confined exclusively to procreation through marital coitus. Compare **SEX-NEGATIVITY**.

**sex preselection** predetermination through reproductive technology of whether offspring will be male or female.

**sex ratio** the proportion of males to females in a given population at a given life stage, primarily at conception (see **CONCEPTION RATIO**) or birth (see **BIRTH RATIO**) but also at any stage between birth and death. Also called **sex distribution**.

**sex reassignment** a process, involving hormone treatment and surgery, in which a person's sex characteristics are changed to conform to that person's sense of **GENDER IDENTITY**, particularly in cases of **TRANSSEXUALISM**. Also called **gender reassignment**; **sex change**; **sexual reassignment**. See also **GENDER DYSPHORIA**; **GENDER IDENTITY DISORDER**.

**sex reversal on Y (SRY)** see **SEX DIFFERENTIATION**.

**sex role** the behavior and attitudinal patterns characteristically associated with being male or female as defined in a given society. Sex roles thus reflect the interaction between biological heritage and the pressures of socializa-



tion, and individuals differ greatly in the extent to which they manifest typical sex-role behavior.

**sex-role reversal** a form of animal behavior in which each sex behaves in a manner generally considered typical of the other sex. For example, in some insects and fish, males take full responsibility for care of the offspring, and in some polyandrous birds, females are aggressive and defend territories.

**sex-role stereotype** a fixed, overly simplified concept of the social roles that are believed to be appropriate to males and to females. See also GENDER STEREOTYPE.

**sex steroid** any of the steroid hormones secreted by the gonads. See SEX HORMONE.

**sex therapy** a multimodal therapeutic approach designed to improve sexual functioning, based on the assumption that sexual performance problems are caused by a combination of lack of knowledge, misinformation, and faulty learning. Several different techniques commonly are used in sex therapy (e.g., SENSATE FOCUS, COGNITIVE RESTRUCTURING, COUPLES THERAPY), but they share the goals of providing education, reducing performance anxiety, improving communication, and teaching skills to improve sexual pleasuring for both partners. Sex therapy incorporates homework assignments, ideally carried out with a partner.

**sex trafficking** see TRAFFICKING.

**sex typing** the process by which particular activities are identified within particular cultures as appropriate expressions of maleness and femaleness. Usually, the preferred term for this process is GENDER TYPING.

**sexual abuse** violation or exploitation by sexual means. Although the term typically is used with reference to any sexual contact between adults and children, sexual abuse can also occur in any relationship of trust.

**sexual addiction** a problematic sexual behavior, such as a PARAPHILIA or HYPERSEXUALITY, regarded as a form of addiction similar to drug addiction. The defining features of a sexual addiction include sexual behavior that is out of control, that has severely negative consequences, and that the person is unable to stop despite a wish to do so. Other features include persistence in high-risk, self-destructive behavior; spending large amounts of time in sexual activity or fantasy; neglect of social, occupational, or other activities; and mood changes associated with sexual activity.

**sexual adjustment** the process of establishing a satisfactory relationship with one or more sexual partners. Sexual adjustment may depend on psychological as well as physical factors.

**sexual aggression** aggression directed by one sex toward the other, often in the context of MATING BEHAVIOR. In species whose males are much larger than females, it is thought that a male may use sexual aggression to achieve FORCED COPULATION.

**sexual and gender identity disorders** in *DSM-IV-TR*, a category of disorders involving sexual or gender identity problems not attributable to another mental disorder. It includes SEXUAL DYSFUNCTIONS, PARAPHILIAS, and GENDER IDENTITY DISORDERS. It has been replaced in *DSM-5* with discrete categories for sexual dysfunctions, GENDER DYSPHORIA, and paraphilic disorders. Formerly called **psychosexual disorders**.

**sexual anesthesia** an absence of normal sensation dur-

ing sexual activity, including coitus. Sexual anesthesia is usually psychogenic. Although some patients report that they obtain sexual pleasure in masturbation but not in sexual activity with a partner, many derive no pleasure from any form of sexual behavior. See also ERECTILE DYSFUNCTION; FEMALE SEXUAL AROUSAL DISORDER.

**sexual anomaly** a congenital or developmental abnormality of the reproductive system, such as the presence of both male and female gonads in an infant.

**sexual apathy** lack of interest in sexual activity. See HYPOACTIVE SEXUAL DESIRE DISORDER.

**sexual arousal** a state of PHYSIOLOGICAL AROUSAL elicited by sexual contact or by other erotic stimulation (e.g., fantasies, dreams, odors, objects), resulting in impulses being transmitted through the central nervous system to the sacral region of the spinal cord. The impulses also trigger the release of sex hormones, dilation of the arteries supplying the genital areas, and inhibition of vasoconstrictor centers of the lumbar nerves. The effects of sexual arousal are mediated through the hypothalamus. See SEXUAL-RESPONSE CYCLE.

**sexual arousal disorder** a class of sexual disorders characterized by the inability to attain or maintain an adequate physiological response in the excitement (arousal) phase of the SEXUAL-RESPONSE CYCLE. See FEMALE SEXUAL AROUSAL DISORDER; MALE ERECTILE DISORDER.

**sexual assault** violent sexual penetration of an individual. It includes forced vaginal, oral, and anal penetration. See also RAPE.

**sexual attitude reassessment workshop (SAR workshop)** a group educational experience in which participants view films on such issues as same-sex sexual orientation, sex in aging, sexual values, and sexual myths. The workshop also involves group discussion and personal reflection on these issues.

**sexual attitudes** values and beliefs about sexuality. Manifested in a person's individual sexual behavior, these attitudes are based on family and cultural views about sexuality, on sex education (both formal and informal), and on prior sexual experiences.

**sexual attraction** the first step in the MATING BEHAVIOR of many animals, in which they emit stimuli intended to attract a mate.

**sexual aversion disorder** in *DSM-IV-TR*, negative emotional reactions (e.g., anxiety, fear, disgust) to sexual activity, leading to active avoidance of it and causing distress in the individual or his or her partner. This can be lifelong or acquired, and although it usually applies to all sexual activity (**generalized type**), it may be specific to some activities or some partners (**situational type**). This aversion is not caused by a medical condition, a medication, or a drug side effect. *DSM-5* has eliminated this diagnosis with the explanation that it is rarely used and not supported by research.

**sexual behavior** most narrowly, all reproductive activities between nonhuman animals, beginning with COURTSHIP, leading to MATE SELECTION, and culminating in COPULATION. In some species, sexual behavior may occur only during certain seasons or at specific stages of the ESTROUS CYCLE. When applied to humans, however, the term has a much broader meaning that encompasses not only physical practices but also attitudes, experiences, desires, preferences, and a variety of related psychological and so-

cial phenomena, including any actions related not only to reproduction but also to pleasurable satisfaction without conception (i.e., SEXUAL AROUSAL). Such actions are shaped by culture and to a further extent by individual experience and observation, and they may be performed with a partner (as in foreplay and role play) or alone (as in fantasizing and masturbating). Additionally, some nonconceptive sexual behavior, such as phone sex or viewing an erotic movie, does not necessarily involve direct stimulation of the body at all. Certain avian and nonhuman mammalian species, particularly primates, also display nonconceptive sexual behavior, which may serve to maintain social relationships or PAIR BONDS or to confuse mates about CERTAINTY OF PATERNITY.

**sexual burnout** loss of sexual function or interest due to a period of excessively frequent or demanding sexual activity. Sexual burnout also sometimes refers to the effects of advancing age on sexual activity.

**sexual characteristic** see SEX CHARACTERISTIC.

**sexual conditioning** the learning of cues that predict opportunities for mating; these learned cues subsequently control sexual behavior. In both fish and birds, sexual conditioning increases the REPRODUCTIVE SUCCESS of conditioned males. See also SEXUAL IMPRINTING.

**sexual contact** any person-to-person touching or connection with genital or erogenous skin or membrane surfaces, as in fondling, kissing, biting, or coitus.

**sexual curiosity** interest in sex and sexuality.

**sexual desire disorder** a class of sexual disorders, including HYPOACTIVE SEXUAL DESIRE DISORDER and SEXUAL AVERSION DISORDER, characterized by a person's chronic lack of interest in or negative reactions to sexual activity and by associated distress or interpersonal difficulty.

**sexual development** the progression toward sexual maturity, in attitudes and behavior as well as in physical characteristics, from infancy through puberty. See also PSYCHOSEXUAL DEVELOPMENT.

**sexual deviance** any sexual behavior, such as a PARAPHILIA, that is regarded as significantly different from the standards established by a culture or subculture. Deviant forms of sexual behavior may include voyeurism, fetishism, bestiality, necrophilia, transvestism, sadism, and exhibitionism. Also called **sexual deviation**. See also SEXUAL PERVERSION.

**sexual differentiation** see SEX DIFFERENTIATION.

**sexual dimorphism** the existence of males and females within a species that differ distinctly from each other in form. Compare MONOMORPHISM. See SEX CHARACTERISTIC; SEX DIFFERENCES.

**sexual discrimination** see SEX DISCRIMINATION.

**sexual disorder** any impairment of sexual function or behavior. Sexual disorders include SEXUAL DYSFUNCTION and paraphilic disorders (see PARAPHILIA).

**sexual drive** see SEX DRIVE.

**sexual dysfunction** any sexual disorder characterized by problems in one or more phases of the SEXUAL-RESPONSE CYCLE. The particular dysfunction may be primary, in which failure in sexual functioning has always been present in the person and happens in all sexual situations; or secondary, denoting any disturbance in sexual functioning that is not lifelong or that occurs only with some partners

or in some situations. Examples of sexual dysfunction include SEXUAL DESIRE DISORDERS; sexual arousal disorders such as ERECTILE DYSFUNCTION; orgasmic disorders (e.g., FEMALE ORGASMIC DISORDER, MALE ORGASMIC DISORDER, PREMATURE EJACULATION); and sexual pain disorders (e.g., DYSPAREUNIA). Formerly called **psychosexual dysfunction**.

**sexual erethism** abnormal irritability or unpleasant sensitivity to stimulation of the sexual organs.

**sexual fantasy** mental images or stories of sexual activity, not constrained by such real-world issues as partner availability or setting and situation.

**sexual feeling** the pleasurable feeling associated with coitus or other sexual contact. Also called **sex feeling**.

**sexual functioning** the performance of sexual intercourse or other sexual activities or the capability of performing them.

**sexual harassment** conduct of a sexual nature that is unwelcome or considered offensive, particularly in the workplace. According to the U.S. EQUAL EMPLOYMENT OPPORTUNITY COMMISSION, there are two forms of sexual harassment: QUID PRO QUO and behavior that makes for a HOSTILE WORK ENVIRONMENT. In the United States, under Title VII of the 1964 Civil Rights Act, an employee subjected to sexual harassment is entitled to sue employers. See also HARRIS V. FORKLIFT SYSTEMS INC.; MERITOR SAVINGS BANK V. VINSON.

**sexual hygiene** see SEX HYGIENE.

**sexual identification** the perception, starting during the first 3 or 4 years of life, of physical sex differences between males and females, followed somewhat later by an awareness of psychological differences between the sexes and of socially determined GENDER ROLES. Also called **sex identification**. Compare GENDER IDENTIFICATION.

**sexual identity 1.** an individual's SEXUAL ORIENTATION.  
**2.** an occasional synonym for SEX IDENTITY.

**sexual imprinting** the development of a preference for a sexual partner that occurs during a sensitive or CRITICAL PERIOD. For example, if zebra finches are cross-fostered to Bengalese finch parents for the first 40 days of life, they will prefer to mate with Bengalese finches as adults. In addition, birds often prefer to socialize with other birds that resemble those they were exposed to in the first month of life.

**sexual inhibition** suppression of the sexual impulse or the inability to feel sexual desire, to perform sexually, or to experience sexual gratification. See HYPOACTIVE SEXUAL DESIRE DISORDER; FEMALE ORGASMIC DISORDER; MALE ORGASMIC DISORDER.

**sexual instinct 1.** the basic drive or urge to preserve the species through mating and the activities that precede it or, by extension, simply to express the self and the self's physiological and psychological needs through sexual activity.  
**2.** in classical psychoanalytic theory, the instinct comprising all the erotic drives and sublimations of such drives. It includes not only genital sex but also anal and oral manifestations and the channeling of erotic energy into artistic, scientific, and other pursuits. In his later formulations, Sigmund FREUD saw the sexual instinct as part of a wider LIFE INSTINCT that also included the self-preservative impulses of hunger, thirst, and elimination. Also called **sex instinct**. See also EROS; LIBIDO; SELF-PRESERVATION INSTINCT.

**sexual intercourse** see COITUS; COPULATION.

**sexual interest** a readiness to engage or participate in discussions, viewing, or other activities related to or leading to sexual contact.

**sexual inversion** see INVERSION.

**sexuality** *n.* **1.** the capacity to derive pleasure from various forms of sexual activity and behavior, particularly from sexual intercourse. **2.** all aspects of sexual behavior, including gender identity, orientation, attitudes, and activity. **3.** in classical psychoanalytic theory, the “organ pleasure” derived from all EROGENOUS ZONES and processes of the body, including the mouth, anus, urethra, breasts, skin, muscles, and genital organs, as well as such functions as sucking, biting, eating, defecating, urinating, masturbating, and having intercourse.

**Sexuality Information and Education Council of the United States (SIECUS)** a nonprofit organization founded in 1964 that develops, collects, and disseminates information about sexuality; promotes sex education; and advocates the right of individuals to make sexual choices.

**sexualization** *n.* see EROTIZATION.

**sexual liberation** **1.** the state of being free from sexual mores or inhibitions that are considered restrictive. See FREE LOVE. **2.** any social trend or process toward increased sexual freedoms.

**sexual lifestyle** an individual pattern of sexual behavior in terms of orientation, number of partners, and types of sexual activity engaged in. Sexual lifestyle reflects such influences as early childhood observations of the family of origin, experiences with male and female contacts in childhood and adolescence, and cultural or religious values.

**sexually dimorphic nucleus** a NUCLEUS of the central nervous system that differs in size between males and females. In humans, for example, a nucleus in the MEDIAL PREOPTIC AREA of the hypothalamus that synthesizes GONADOTROPIN-RELEASING HORMONE tends to be larger and more active in males than in females because gonadotropin release is continuous (it is cyclical in females). In songbirds whose males sing more than females, several brain nuclei associated with both song learning and song production are larger in males than in females.

**sexually transmitted disease (STD)** an infection transmitted by sexual activity. More than 20 STDs have been identified, including those caused by viruses (e.g., hepatitis B, herpes, HIV) and those caused by bacteria (e.g., chlamydia, gonorrhea, syphilis). STDs are also known as **venereal diseases**, the term used traditionally for syphilis and gonorrhea. Also called **sexually transmitted infection (STI)**.

**sexual masochism** a PARAPHILIA in which sexual interest and arousal is repeatedly or exclusively achieved through being humiliated, bound, beaten, or otherwise made to suffer physical harm or threat to life.

**sexual maturation** the stage of development of the reproductive system at which coitus and reproduction can be achieved.

**sexual metamorphosis** a rare delusion in which the individual believes that his or her biological sex has been changed into the other sex.

**sexual object** **1.** in general language, a person regarded

only in terms of his or her sexual attractiveness. **2.** in psychoanalytic theory, a person, animal, or inanimate object toward whom or which the sexual energy of an individual is directed. Also called **sex object**.

**sexual offense** see SEX OFFENSE.

**sexual orientation** one's enduring sexual attraction to male partners, female partners, or both. Sexual orientation may be heterosexual, same sex (gay or lesbian), or bisexual. See also OBJECT CHOICE.

**sexual orientation change efforts (SOCE)** see CONVERSION THERAPY.

**sexual orientation grid** a method of classifying SEXUAL ORIENTATION on the basis of seven factors: sexual fantasy, sexual attraction, sexual behavior, emotional attraction, social attraction, social behavior, and self-identity. Each of these factors is evaluated in three time periods: past, present, and ideal future. Thus, a person's sexual orientation is described in terms of positions in a  $3 \times 7$  grid. [developed by U.S. psychiatrist Fritz Klein (1932–2006), who considered the KINSEY SCALE of sexual orientation to be simplistic]

**sexual pain disorder** a class of sexual disorders, including DYSpareunia and VAGINISMUS, characterized by persistent or recurrent pain during sexual activity.

**sexual perversion** any sexual practice that is regarded by a community or culture as an abnormal means of achieving orgasm or sexual arousal. Sexual perversion is an older term that is little used nowadays, largely having been replaced by SEXUAL DEVIANCE or, in a psychiatric context, PARAPHILIA.

**sexual preference** **1.** any particular sexual interest and arousal pattern, which may range from the relatively common (e.g., particular patterns of foreplay, particular positions) to those associated with a PARAPHILIA. **2.** loosely, a synonym for SEXUAL ORIENTATION, although its use as such is considered offensive by some who believe it characterizes one's deep-rooted sexual attractions as a matter of simple choice.

**sexual reassignment** see SEX REASSIGNMENT.

**sexual receptivity** see RECEPTIVITY.

**sexual reflex** **1.** penile erection produced by stimulation of the male genitalia. **2.** vaginal secretion and lubrication and swelling of the clitoris produced by stimulation of the female genitalia. **3.** the reflex activity involved in ORGASM. **4.** components of sexual behavior, such as the CREMATIC REFLEX, that are not under direct control of the higher brain levels and may be stimulated through spinal or bulbar neural connections.

**sexual response** a reaction to sexual stimulation. The most noticeable sexual response in the male is erection of the penis. See SEXUAL AROUSAL.

**sexual-response cycle** a conceptualization of a four-stage cycle of sexual response exhibited by both men and women, differing only in aspects determined by male or female anatomy. The stages include the **arousal** (or **excitement**) **phase**, which lasts several minutes to hours (see SEXUAL AROUSAL); the **plateau phase**, lasting 30 seconds to 3 minutes, marked by penile erection in men and vaginal lubrication in women; the **orgasmic phase**, lasting 15 seconds and marked by EJACULATION in men and ORGASM in women; and the **resolution phase**, lasting 15 minutes to 1 day (see REFRACTORY PHASE). This conceptualization was

introduced by U.S. sex researchers William H. Masters (1915–2001) and Virginia E. Johnson (1925–2013) in 1966, but it has subsequently been criticized, particularly in the way that it equates the male and female pattern.

**sexual revolution** either of two periods in U.S. (and, to some extent, European) history marked by a significant change in sexual values and behavior. The first sexual revolution occurred in the early part of the 20th century after the end of the Victorian era, and it involved efforts to increase sexual knowledge, legitimize women's enjoyment of sex, and eliminate prostitution. The second sexual revolution, during the 1960s, was stimulated by such events as the development of oral contraception and the publication of Alfred KINSEY's books on the sexual behavior of men and women (the "Kinsey reports"). This led to more openness of sexual expression in literature and the media, an increase in sexual activity, more tolerance of what were previously considered "deviant" activities, and greater acceptance of female sexuality.

**sexual sadism** a PARAPHILIA in which sexual excitement is achieved by intentional infliction of physical or psychological suffering on another person. The harm may be inflicted on a consenting partner, typically involving mildly injurious bodily suffering combined with humiliation. When practiced with nonconsenting partners, sexual sadism may involve inflicting extensive, permanent, or possibly fatal bodily injury. This activity is likely to be repeated, with the severity of the sadistic acts increasing over time. See also SADISM; SADOMASOCHISM.

**sexual selection** a theoretical mechanism for the evolution of anatomical and behavioral differences between males and females, based on MATE SELECTION. [proposed in 1871 by Charles DARWIN]

**sexual sensation** the effect of stimulation of the genitalia and other erogenous zones.

**sexual socialization** the process by which children and adolescents absorb their culture's beliefs, values, and attitudes toward sexuality.

**sexual stimulation** touching, kissing, licking, or other manipulation of the genitals, breasts, or other areas of the body that leads to sexual arousal. See also GENITAL STIMULATION.

**sexual tension** a condition of anxiety and restlessness associated with the sex drive and a normal desire for release of sexual energy. Sexual tension may be complicated by fear of inadequate performance, fear of an unwanted pregnancy, fear of discovery, or other concerns.

**sexual trauma** any disturbing experience associated with sexual activity, such as rape, incest, and other sexual offenses. It is a common cause of POSTTRAUMATIC DISORDERS and DISSOCIATIVE DISORDERS.

**sexual value system** a person's beliefs about what is and is not normal, moral, and acceptable sexual behavior and activity.

**s factor** abbreviation for SPECIFIC FACTOR.

**SGA** abbreviation for SMALL FOR GESTATIONAL AGE.

**shade** *n.* any colored or uncolored stimulus defined by the amount of black it contains.

**shading** *n.* gradations of darkness on the surface of a real object or on a depiction of an object, providing a DEPTH CUE.

**shadow** *n.* in the ANALYTIC PSYCHOLOGY of Carl JUNG, an ARCHETYPE that represents the "darker side" of the human psyche, which may comprise anything (e.g., a trait, desire, or emotion, whether positive or negative) that is unacceptable to an individual's conscious ego and as such remains unexpressed and hidden in the unconscious.

**shadowing** *n.* in cognitive testing, a task in which a participant repeats aloud a message word for word at the same time that the message is being presented, often while other stimuli are presented in the background. It is mainly used in studies of ATTENTION.

**shadow jury** a group of people hired by a TRIAL CONSULTANT to watch trials and report their impressions of the evidence presented. Attorneys use this feedback in the development of their trial strategies.

**shaken baby syndrome (SBS)** the neurological consequences of a form of child abuse in which a small child or infant is repeatedly shaken. The shaking causes diffuse, widespread damage to the brain; in severe cases, it may cause death.

**shallow affect** significant reduction in appropriate emotional responses to situations and events. See also FLAT AFFECT.

**shallow processing** cognitive processing of a stimulus that focuses on its superficial, perceptual characteristics rather than its meaning. It is considered that processing at this shallow level produces weaker, shorter-lasting memories than DEEP PROCESSING. See LEVELS-OF-PROCESSING MODEL OF MEMORY. See also BOTTOM-UP PROCESSING. [proposed in 1972 by Canadian psychologists Fergus I. M. Craik (1935– ) and Robert S. Lockhart]

**shaman** *n.* in various indigenous cultures, especially those that include nature and ancestor worship, a male or female spiritual leader who uses allegedly supernatural or magical powers for divination (particularly diagnosis) and to heal mental or physical illness. The status of shamans is not conferred by recognized organizations but is held to arise from a significant personal physical or mental crisis or to be hereditary. Shamanism includes a wide spectrum of traditional beliefs and practices, many of which involve communication with the spirit and animal worlds in pursuit of physical or mental healing. —**shamanic** *adj.* —**shamanistic** *adj.*

**shamanic trance** an ALTERED STATE OF CONSCIOUSNESS as experienced by SHAMANS in certain indigenous societies. It may be induced by hallucinogens; rhythmic dance, drumming, and music; suggestion; or similar means.

**sham disorder** a colloquial name for FACTITIOUS DISORDER.

**shame** *n.* a highly unpleasant SELF-CONSCIOUS EMOTION arising from the sense of there being something dishonorable, immodest, or indecorous in one's own conduct or circumstances. It is typically characterized by withdrawal from social intercourse—for example, by hiding or distracting the attention of another from one's shameful action—which can have a profound effect on psychological adjustment and interpersonal relationships. Shame may motivate not only avoidant behavior but also defensive, retaliative anger. Psychological research consistently reports a relationship between proneness to shame and a host of psychological symptoms, including depression, anxiety, eating disorders, subclinical sociopathy, and low self-esteem. Shame is also theorized to play a more positive

adaptive function by regulating experiences of excessive and inappropriate interest and excitement and by diffusing potentially threatening social behavior. Compare GUILT. —**shameful** *adj.*

**shame culture** a trend or organizing principle in a society characterized by a strong desire to preserve honor and avoid shame. Compare GUILT CULTURE.

**shamelessness** *n.* behavior marked by an apparent absence of feelings of shame. This may arise as the result of psychological problems or reflect a loss of judgment after brain injury. —**shameless** *adj.*

**sham feeding** in research, a procedure in which a non-human animal chews and swallows food that is then extracted through a tube surgically implanted in the esophagus so that it does not reach the stomach.

**sham rage** sudden aggressive behavior and motor activity occurring disproportionately in response to a weak or relatively innocuous stimulus. Sham rage initially was observed by researchers in the 1920s: Following surgical DE-CORTICATION, cats responded to the touch of a hand by growling, spitting, lashing the tail, arching the back, protracting the claws, erecting the hairs, jerking the limbs, rapidly moving the head from side to side, and attempting to bite. It subsequently has been demonstrated to occur with direct electrical stimulation of the LIMBIC SYSTEM as well. Additionally, sham rage has been seen in some pathological human conditions involving similar damage to the cerebral cortex that removes its inhibitory influence over the activities of the HYPOTHALAMUS and other deeper, more primitive structures.

**sham surgery** in clinical research on the value or usefulness of experimental surgical interventions, the controversial practice of performing surgery that functions as a CONTROL because it mimics the features of the experimental surgery but does not result in the alteration or removal of any bodily structures; that is, it does not have the systemic effects of the experimental procedure. Also called **sham operation**.

**shape** *n.* the spatial form of an object as it stands out from its background.

**shape coding** in ergonomics, coding a control or display by shape so that it can be readily distinguished from other controls or displays. See CONTROL DISCRIMINABILITY.

**shape constancy** a type of PERCEPTUAL CONSTANCY in which an object is perceived as having the same shape when viewed at different angles. For example, a plate is still perceived as circular despite appearing as an oval when viewed from the side.

**shaping** *n.* the production of new forms of OPERANT BEHAVIOR by reinforcement of successive approximations to the behavior (see METHOD OF SUCCESSIVE APPROXIMATIONS). Also called **approximation conditioning**; **behavior shaping**.

**Shapiro–Wilk test** an INFERENTIAL TEST to determine whether a random sample comes from a population with a NORMAL DISTRIBUTION. If the test statistic, *W*, is significant, then the NULL HYPOTHESIS that the distribution is normal should be rejected. Because so many of the most common statistical tests are designed for normally distributed data, Shapiro–Wilk is a useful test to identify those data sets that require a different approach. [Samuel S. **Shapiro** (1930– ), U.S. statistician; Martin B. **Wilk** (1922–2013), Canadian-born U.S. statistician]

**shared attention** see JOINT ATTENTION.

**shared environment** in behavior genetic analyses, those aspects of an environment that individuals living together (e.g., biologically related individuals in a family household) share and that therefore cause them to become more similar to each other than would be expected on the basis of genetic influences alone. Examples of shared environmental factors include parental child-rearing style, divorce, or family income and related variables. Compare NONSHARED ENVIRONMENT.

**shared medical appointment model** an approach to health care in which a group of patients with a similar medical condition meet with a physician for an extended period of time, usually more than an hour, to discuss aspects of their common condition, including its medical management (e.g., prescriptions), and potentially to address any mental health considerations that it might present. Typically, a behaviorist (e.g., a psychologist or social worker), a nurse or physician's assistant, a scheduler, and a documentation specialist also are in attendance. This model tends to be used for follow-up care rather than for new patient intakes.

**shared mental model** in ergonomics, a MENTAL MODEL of a work system that is held in common by the members of a team. Ideally, team members should have a shared mental picture of the system and its attributes, a shared knowledge of all relevant tasks, and a shared understanding of the team's progress toward its goal. Coordination, efficiency, and accuracy will increase as team members converge on a common mental model that is accurate and complete yet flexible. Also called **team mental model**.

**shared psychotic disorder** in *DSM–IV–TR*, a disorder in which the essential feature is an identical or similar delusion that develops in an individual who is involved with another individual (sometimes called the “inducer” or the “primary case”) who already has a psychotic disorder with prominent delusions. Shared psychotic disorder can involve many people (e.g., an entire family) but is most commonly seen in relationships of only two, in which case it is known as FOLIE À DEUX. In *DSM–5*, the disorder is not recognized or included as a distinct diagnostic entity separate from DELUSIONAL DISORDER. Formerly called **induced psychotic disorder**.

**sharpening** *n.* a phenomenon in which some details of a memory become more sharply defined and accentuated—and possibly exaggerated—over time in comparison to the original experience.

**Sheehan's syndrome** see HYPOPHYSEAL CACHEXIA. [Harold Leeming **Sheehan** (1900–1988), British pathologist]

**sheep–goat effect** in parapsychology experiments using ZENER CARDS or similar targets, a supposed difference in outcomes found between trials involving participants who believe that they may succeed in the given task (sheep) and trials involving those who assume that this is impossible (goats). See also DECLINE EFFECT; DIFFERENTIAL EFFECT; FOCUSING EFFECT; POSITION EFFECT; PREFERENTIAL EFFECT. [coined by U.S. parapsychologist Gertrude Schmeidler (1912–2009)]

**Sheldon's constitutional theory of personality** the theory that every person possesses some degree of three primary temperamental components that relate to three basic body builds (SOMATOTYPES), measured on a

7-point scale. The three body types—ECTOMORPH, ENDO-MORPH, and MESOMORPH—are correlated with the three components of temperament: CEREBROTONIA, VISCEROTONIA, and SOMATOTONIA. Constitution provides a substructure, but nutrition and early experiences also influence the physique and temperament, respectively. [William H. Sheldon (1899–1970), U.S. psychologist]

**shell shock** the name used during World War I for COMBAT STRESS REACTION. At the time, the disorder was attributed solely to minor brain hemorrhages or brain concussion due to exploding shells and bombs, without involving psychological factors.

**shelter care** the provision of a facility without physical restrictions for the temporary care of children who have been taken into custody pending investigation and placement. Shelter care is a form of FOSTER CARE.

**sheltered workshop** a rehabilitation facility that provides a controlled, noncompetitive, supportive working environment and individually designed work settings for people with disabilities. Work experience and related services are provided to assist individuals in achieving specific vocational goals. Sheltered workshops differ from SUPPORTED EMPLOYMENT in that the latter occurs in a competitive, noncontrolled working environment.

**shenjing shuairuo** see SHINKEISHITSU.

**shen-k'uei (shenkui)** *n.* a CULTURE-BOUND SYNDROME occurring in males in Chinese or Taiwanese cultures and characterized by symptoms of anxiety, panic, and SOMATIZATION, such as sexual dysfunction, insomnia, and dizziness. Symptoms cannot be linked to a physical cause and are typically ascribed to excessive loss of semen due to unrestrained sexual activity. See also DHAT; JIRYAN; SUKRA PRAMEHA.

**sherm** *n.* see FRY.

**shift work** work scheduled during the swing shift (usually 4 p.m. to 12 a.m.) or night shift (12 a.m. to 8 a.m.). Studies show wide variations in the attitudes of employees toward shift work and their ability to adjust their CIRCADIAN RHYTHMS and adapt to changes in sleep, eating, and social patterns. See also CIRCADIAN RHYTHM SLEEP DISORDER.

**shin-byung** *n.* a CULTURE-BOUND SYNDROME found in Korea, characterized by anxiety and physical complaints such as general weakness, dizziness, loss of appetite, insomnia, and gastrointestinal problems, followed by dissociation and alleged possession by ancestral spirits (see DISSOCIATIVE TRANCE DISORDER). It is considered by those affected to be a “divine illness,” in which the individual experiences hallucinations of becoming a shaman and a cure occurs when this conversion takes place.

**shinkeishitsu** *n.* a CULTURE-BOUND SYNDROME prevalent in Japan, with symptoms that include obsessions, perfectionism, ambivalence, social withdrawal, physical and mental fatigue, hypersensitivity, and hypochondriasis. Japanese psychiatrist Shoma Morita (1874–1938), a pioneer in the study of shinkeishitsu, postulated that there is a shinkeishitsu-prone innate temperament, which he called “hypochondriacal temperament.” According to Morita, people born with this temperament are overly sensitive, self-reflective, and notice even minimal changes in their mental and physical states. This disorder is also prevalent in China, where it is known as **shenjing shuairuo**. See also MORITA THERAPY.

**Shipley Institute of Living Scale (SILS)** a short assessment of general cognitive functioning consisting of two subtests: vocabulary, in which participants must choose which of a group of words is most similar in meaning to a target word; and abstraction, in which participants must provide the final element in a sequence of numbers, letters, or words. The scale was originally developed in 1940 for use in psychiatric settings to identify and evaluate the intellectual decline associated with certain mental disorders. A revised and restandardized version, **Shipley-2**, now includes a block-patterns scale as a nonverbal alternative to the abstraction subtest. Also called **Shipley-Hartford Institute of Living Scale**. [Walter C. Shipley (1903–1966), U.S. psychologist]

**shock** *n.* **1.** the application of electric current. See ELECTROCONVULSIVE THERAPY. **2.** a condition of lowered excitability of neural centers following the cutting of their connections with other neural centers. For example, SPINAL SHOCK occurs when connections between the spinal cord and the brain are severed. **3.** acute reduction of blood flow in the body due to failure of circulatory control or loss of blood or other bodily fluids, marked by hypotension, coldness of skin, usually tachycardia, and sometimes anxiety. **4.** a sudden disturbance of equilibrium.

**shock phase** see GENERAL ADAPTATION SYNDROME.

**shock probation** a criminal sentence in which an offender is incarcerated for a brief period and then released into the community under the supervision of a parole or probation officer. This approach is typically used with juveniles or with first-time offenders who have committed less serious offenses, the theory being that such offenders may be capable of successful rehabilitation into society after they have experienced the initial shock of incarceration. Also called **shock sentencing**.

**shock-shock interval (SS interval)** in a SIDMAN AVOIDANCE SCHEDULE, the time between successive presentations of the aversive stimulus (often an electric shock) in the absence of the specified response.

**shock therapy** the treatment of severe mental disorders by administering a drug or an electric current that shocks the central nervous system to induce loss of consciousness or convulsions. Also called **shock treatment**. See ELECTROCONVULSIVE THERAPY; INSULIN-SHOCK THERAPY.

**shoe anesthesia** see STOCKING ANESTHESIA.

**shoe fetishism** see FOOT FETISHISM.

**shook yong** see KORO.

**shortcut key** in ergonomics, a key or combination of keys on a control panel that can be used to activate frequently used functions in a single step, thus reducing reliance on more complex selection methods. A familiar example is the function keys on a computer keyboard, which enable the user to select a function without going through a series of menus.

**Short Grit Scale (Grit-S)** see GRIT SCALE.

**Short Portable Mental Status Questionnaire (SPMSQ)** a brief questionnaire typically used to screen older adults for dementia and other neurologically based cognitive deficits and to determine the severity of impairment. It consists of 10 simple questions relating to orientation (e.g., “What is the date today?”, “What is the name of this place?”), knowledge of current events, short- and

long-term memory, and calculation. [developed in 1975 by U.S. geriatric psychiatrist Eric A. Pfeiffer]

**short-term memory (STM)** the reproduction, recognition, or recall of a limited amount of material after a period of about 10 to 30 seconds. STM is often theorized to be separate from LONG-TERM MEMORY, and the two are the components of the DUAL-STORE MODEL OF MEMORY. STM is frequently tested in intelligence or neuropsychological examinations. See also IMMEDIATE MEMORY; MODAL MODEL OF MEMORY; MULTISTORE MODEL OF MEMORY; PRIMARY MEMORY; WORKING MEMORY.

**short-term psychodynamic psychotherapy** see BRIEF PSYCHODYNAMIC PSYCHOTHERAPY.

**short-term psychotherapy** see BRIEF PSYCHOTHERAPY.

**short-wavelength pigment** the PHOTOPIGMENT present in one of the three populations of RETINAL CONES that has maximum sensitivity to a wavelength of 419 nm. The absence of the gene for the short-wavelength pigment causes TRITANOPIA, a form of color blindness in which blue and green are confused with one another. See also LONG-WAVELENGTH PIGMENT; MEDIUM-WAVELENGTH PIGMENT.

**showup** *n.* a witness identification procedure similar to a LINEUP, except that only one suspect is presented.

**shrink** *n.* slang for a psychologist, psychiatrist, or other mental health professional who conducts psychotherapy. It is short for **headshrinker**, an allusion to the practice of HEADSHRINKING.

**shrinkage** *n.* the situation in which the strength of a CORRELATION COEFFICIENT or REGRESSION EQUATION decreases when it is applied to a new data set. Such shrinkage occurs when the initial estimate of the correlation reflects unique characteristics of the initial sample that are not replicated in subsequent samples.

**SHRM** abbreviation for STRATEGIC HUMAN RESOURCE MANAGEMENT.

**shrunk**  **$R^2$**  see ADJUSTED  **$R^2$** .

**shuk yang** see KORO.

**shunning** *n.* systematic OSTRACISM of an individual by a group, usually taking the form of minimal physical or social contact with the outcast. —**shun** *vb.*

**shunt** *n.* a congenitally occurring or surgically created passage diverting the flow of bodily fluids such as blood or cerebrospinal fluid from one part of an organ or body to another. For example, a **ventriculoatrial shunt** is an artificially formed passage for draining cerebrospinal fluid from the ventricles of the brain to the external jugular vein to relieve symptoms of HYDROCEPHALUS. The shunt carries the fluid through a catheter to the venous system that empties into the right atrium of the heart.

**shuttle box** a two-compartment box used for avoidance-conditioning research with animals. An electric shock to the feet is scheduled to be delivered if the animal remains in the same compartment for more than a specified period of time (e.g., 30 seconds). The subject can avoid electric shocks by regularly moving from one compartment to the other (i.e., shuttling between them). There is sometimes a small barrier that the animal must jump over or push to get from one compartment to the other.

**shy bladder syndrome** see PARURESIS.

**shy-bold continuum** the tendency of some individuals within a group to be fearful or cautious of new stimuli and of others to explore novel stimuli. The more fearful individuals are less likely to be preyed on but also less able to use new resources. A shy-bold continuum has been demonstrated in many species, from fish through human beings, and may be a universal dimension of behavioral variation.

**shyness** *n.* anxiety and inhibition in social situations, typically involving three components: (a) global feelings of emotional arousal and specific physiological experiences (e.g., pounding heart, sweating, blushing); (b) acute public self-consciousness, self-deprecation, and worries about being evaluated negatively by others; and (c) observable behavior such as quietness, gaze aversion, and social withdrawal. Extremely shy individuals are at an increased risk of developing anxiety disorders such as SOCIAL PHOBIA. Shyness also is seen in nonhuman animals, manifest as an avoidance of novel stimuli and a lack of exploration in unfamiliar environments. Also called **timidity**. Compare **BOLDNESS**. —**shy** *adj.*

**sialorrhea** *n.* see PTYALISM.

**Siamese twins** see CONJOINED TWINS.

**sib** *n.* **1.** short for SIBLING. **2.** in anthropology, a person's kindred collectively. See KINSHIP; KINSHIP NETWORK.

**sibilant** **1.** *adj.* denoting a FRICATIVE produced by forcing the air through an opening between the tongue and the roof of the mouth and creating a hissing sound, for example, [s], [z], or [sh]. **2.** *n.* a sibilant speech sound.

**siblicide** *n.* the killing of one's siblings. In ASYNCHRONOUS BROODS, the first-hatched bird often attacks and kills those that hatch later. This is an extreme form of SIBLING RIVALRY.

**sibling** *n.* one of two or more children born of the same two parents (i.e., a sister or brother). Also called **sib**.

**sibling rivalry** competition among siblings for the attention, approval, or affection of one or both parents or for other recognition or rewards, such as in sports or academics. See also PARENT-OFFSPRING CONFLICT.

**sib-pair method** a technique used in genetics—particularly in attempts to discover the extent of inherited psychiatric factors—in which the incidence of a disorder among blood relatives is compared with the distribution of the disorder in the general population. Sib-pair method studies have found a higher incidence of schizophrenia in twins and close family members than in the general population.

**sibutramine** *n.* an APPETITE SUPPRESSANT used for the management of obesity. Sibutramine acts on the central nervous system to inhibit the reuptake of the neurotransmitter epinephrine and, to a lesser extent, serotonin and dopamine. Sibutramine may raise blood pressure, and because of its ability to release monoamines, it should not be used in conjunction with MONOAMINE OXIDASE INHIBITORS. Like other appetite suppressants, it is effective only in conjunction with dietary restriction. Due to concerns about serious adverse effects, it has been removed from the market in many countries, including the United States. Former U.S. trade name: **Meridia**.

**sick headache** see MIGRAINE HEADACHE.

**sick role** the behavior expected of a person who is physically ill, mentally ill, or injured. Such expectations can be the individual's own or those of the family, the community,

or society in general. They influence both how the person behaves and how others react to him or her. In his pioneering discussion of the subject, U.S. sociologist Talcott Parsons (1902–1979) noted in 1951 that people in a sick role are expected to cooperate with caregivers and to want to get well but are also provided with an exemption from normal obligations. See also **FACTITIOUS DISORDER**.

**Šidák test** see **DUNN–ŠIDÁK PROCEDURE**.

**side effect** any reaction secondary to the intended therapeutic effect that may occur following administration of a drug or other treatment. Often these are undesirable but tolerable (e.g., headache or fatigue), although more serious effects (e.g., liver failure, seizures) may also occur. Occasionally, harmful side effects are unexpected, in which case they more properly are termed **ADVERSE DRUG REACTIONS**.

**Sidman avoidance schedule** a procedure in which brief, inescapable aversive stimuli are presented at fixed intervals (**SHOCK–SHOCK INTERVALS**) in the absence of a specified response. If the response is made, the aversive stimulus is postponed by a fixed amount of time (the **RESPONSE–SHOCK INTERVAL**) from that response. Also called **avoidance without warning signal**; **continuous avoidance**; **free-operant avoidance**. [Murray Sidman (1923– ), U.S. psychologist]

**SIDS** acronym for **SUDDEN INFANT DEATH SYNDROME**.

**SIECUS** abbreviation for **SEXUALITY INFORMATION AND EDUCATION COUNCIL OF THE UNITED STATES**.

**Siegel–Tukey test** a **NONPARAMETRIC TEST** that evaluates any difference in **VARIANCE** across two independent samples to determine whether they represent two different populations. Data values for the two groups are first ordered in a single list from lowest to highest and then ranked in terms of alternate extremes, so that, for example, the highest and lowest values are both ranked 1, the next highest and next lowest 2, and so on. Finally, the ranked values in each group are summed. If final sums per group do not differ, there is no evidence that the dispersion differs across groups. The test has relatively low statistical **POWER** when data have a **NORMAL DISTRIBUTION**.

**sighting line** a visual axis that extends along a line from a point of fixation to the point of clearest vision on the retina.

**sight method** see **WHOLE-WORD METHOD**.

**sight words** in reading, words that are recognized instantly without additional analysis. Also called **sight vocabulary**.

**sigma** *n.* **1.** (symbol:  $\Sigma$ ) the sum of a list of values. **2.** (symbol:  $\sigma$ ) see **POPULATION STANDARD DEVIATION**.

**sigma receptor** (symbol:  $\sigma$ ) a receptor that currently is not well understood but is thought to affect neurotransmitter release and function (particularly of dopamine and serotonin) as well as the immune and endocrine systems. Once identified as an **OPIOID RECEPTOR** in part because synthetic opioids such as **DEXTROMETHORPHAN** bind to it, it is now considered to be a separate class of receptor with two subtypes: **sigma-1** ( $\sigma_1$ ) and **sigma-2** ( $\sigma_2$ ). **Sigma-1**, the more fully investigated of these subtypes, is activated by some drugs of abuse (e.g., cocaine, methamphetamine), and it has been implicated in several disorders (e.g., depression, Alzheimer's disease), with a possible role in their treatment.

**sigmatism** *n.* **1.** a kind of **LISP** specifically involving in-

correct production of the [s] and [z] sounds. **2.** an obsolescent name for **lisp**.

**sigmoid curve** an S-shaped curve that describes many processes in psychology, including learning and responding to test items. The curve starts low, has a period of acceleration, and then approaches an **ASYMPTOTE**. Often, the curve is characterized by the **LOGISTIC FUNCTION**.

**sign** *n.* **1.** an objective, observable indication of a disorder or disease. See also **SOFT SIGN**. **2.** *n.* in linguistics and **SEMIOTICS**, anything that conveys meaning; a sign may be either verbal (e.g., a spoken or written word) or nonverbal (e.g., a hairstyle). The term is now mainly associated with approaches deriving from the theory of Swiss linguist Ferdinand de Saussure (1857–1913), who emphasized the arbitrary nature of linguistic signs (i.e., the lack of any necessary relationship between the material **SIGNIFIER** and the idea signified). The application of this idea to nonlinguistic sign systems provided the basic method of **STRUCTURALISM** in the social sciences. **3.** *vb.* to communicate using **SIGN LANGUAGE**.

**signal** *n.* **1.** an intelligible sign communicated from one individual or electromagnetic device to another. **2.** a presentation of information, usually one that evokes some action or response. **3.** as used in **SIGNAL DETECTION THEORY**, a stimulus.

**signal amplification bias** see **INTERPERSONAL GAP**.

**signal anxiety** in psychoanalytic theory, anxiety that arises in response to internal conflict or an emerging impulse and functions as a sign to the **EGO** of impending threat, resulting in the preemptive use of a **DEFENSE MECHANISM**. Compare **PRIMARY ANXIETY**.

**signal detection task** a task in which the observer is required to discriminate between trials in which a target stimulus (the signal) is present and trials in which it is not (the noise). Signal detection tasks provide objective measures of perceptual sensitivity. Also called **detection task**.

**signal detection theory (SDT)** a body of concepts and techniques from communication theory, electrical engineering, and decision theory that were applied during World War II to the detection of radar signals in noise. These concepts were applied to auditory and visual psychophysics in the late 1950s and are now widely used in many areas of psychology. An important methodological contribution of SDT has been the refinement of psychophysical techniques to permit the separation of sensitivity from criterion, decision-making factors. SDT has also provided a valuable theoretical framework for describing perceptual and other aspects of cognition and for quantitatively relating psychophysical phenomena to findings from sensory physiology. A key notion of SDT is that human performance in many tasks is limited by variability in the internal representation of stimuli due to internal or external noise. Many of the theoretical notions of SDT were anticipated by Louis L. **THURSTONE**. Also called **detection theory**. See **D PRIME**; **RECEIVER-OPERATING CHARACTERISTIC CURVE**.

**signaled avoidance** see **DISCRIMINATED AVOIDANCE**.

**signal-to-noise ratio (S/N)** the ratio of signal power (intensity) to noise power, usually expressed in **DECIBELS**. When the signal is speech, it is called the **speech-to-noise ratio**.

**signal word** in ergonomics, a word used in risk communications (e.g., on a warning sign) to indicate the level of



risk associated with a hazardous situation. Examples of signal words include *danger*, *warning*, *caution*, and *notice*.

**signal word panel** in ergonomics and risk communication, a warning sign that contains a specific SIGNAL WORD (e.g., *danger*). The size, color, and font of the lettering, as well as the design of the panel itself, are selected for maximum clarity and impact. The signal word panel may also contain an alerting symbol, such as a skull and crossbones.

**signature** *n.* an identifiable unique object, message, or symbol left by a criminal at the scene of a crime. It plays no part in the criminal act but represents a coded clue to the offender's identity, which can be of use in CRIMINAL PROFILING. Usually, a criminal leaves the same signature at the scene of all his or her crimes. Also called **calling card**.

**signed-ranks test** see WILCOXON SIGNED-RANKS TEST.

**sign effect** see BEHAVIORAL ECONOMICS.

**significance** *n.* the extent to which something is meaningful or of consequence. In statistics and related fields, the term usually denotes STATISTICAL SIGNIFICANCE. See also CLINICAL SIGNIFICANCE; PRACTICAL SIGNIFICANCE; PSYCHOLOGICAL SIGNIFICANCE.

**significance level** (symbol:  $\alpha$ ) in SIGNIFICANCE TESTING, a fixed probability of rejecting the NULL HYPOTHESIS of no effect when it is in fact true. It is set at some value, usually .001, .01, or .05, depending on the consequences associated with making a TYPE I ERROR. When a particular effect is obtained experimentally, the PROBABILITY LEVEL ( $p$ ) associated with this effect is compared to the significance level. If the  $p$  value is less than the  $\alpha$  level, the null hypothesis is rejected. Small  $p$  values suggest that obtaining a statistic as extreme as the one obtained is rare and thus the null hypothesis is unlikely to be true. The smaller the  $\alpha$  level, the more convincing is the rejection of the null hypothesis. Also called **alpha level**.

**significance testing** in HYPOTHESIS TESTING, a set of procedures used to determine whether the differences between two groups or models are statistically significant (i.e., unlikely to arise solely from chance). In its most common form, significance testing is used to decide whether the NULL HYPOTHESIS of no effect should be rejected. A comparison of the probability statistic obtained from the test to the chosen SIGNIFICANCE LEVEL determines whether an observed effect may be due to chance variance and hence whether the null hypothesis is or is not likely to be correct. This approach may also be used to differentiate between two models that differ in terms of the number of parameters specified in them (as in MULTIPLE REGRESSION analysis).

**significant difference** the situation in which a SIGNIFICANCE TESTING procedure indicates the statistical differences observed between two groups (e.g., a treatment group and a control group) are unlikely to reflect chance variation.

**significant other** any individual who has a profound influence on another person, particularly on his or her self-image and SOCIALIZATION. Although the term most often denotes a spouse or other person with whom one has a committed romantic relationship, it is also used in psychology and sociology to refer to parents, peers, and others.

**signifier** *n.* **1.** in linguistics and SEMIOTICS, the material form of a SIGN as opposed to the idea or concept indicated (the **signified**). In language, therefore, the signifier is the spoken or written word or component of a word. The dis-

inction between signifier and signified is of central importance in STRUCTURALISM and POSTSTRUCTURALISM. See also REFERENT. [introduced by Swiss linguist Ferdinand de Saussure (1857–1913)] **2.** in the theory of French psychoanalyst Jacques Lacan (1901–1981), a symbol, such as a word or symptom, that stands for some aspect of the patient's unconscious. Lacan's use of the term reflects his central belief that the unconscious is structured as a language.

**sign language** any system of communication in which signs formed by hand configuration and movement are used instead of spoken language. The term refers particularly to the system used by people who are deaf or have severe hearing loss, which has its own syntax and methods of conveying nuances of feeling and emotion and is now accepted by most linguists as exhibiting the full set of defining characteristics of human oral–aural language. The particular system of hand signs and movements used primarily in the United States and Canada is called **American Sign Language (ASL)**. Forms of sign language are sometimes used also to communicate with children with certain neurological disorders and with nonhuman primates, but these systems are far less sophisticated than those used by people with hearing impairment. Also called **signing**. See FINGERSPELLING.

**sign stimulus** see RELEASER.

**sign test** a simple NONPARAMETRIC procedure used to determine whether a sample has the same MEDIAN value as another sample or a reference population. Consider a farmer who wants to know whether he or she can grow a particular crop that requires soil with a median acidity level (pH) of 8. The farmer measures the soil in several different areas on his or her property and then compares the pH value of each measurement to the required median value. Each acidity reading above 8 is marked positive using a + sign and each below 8 is marked negative with a – sign. If the proportion of positive signs for the group of measurements is significantly different from the proportion of negative signs, then the farmer's sample soil data have a different median than the one required and the desired crop cannot be planted. Unlike the WILCOXON SIGNED-RANKS TEST, the sign test does not take into account the magnitude of the observed differences from the median.

**sign tracking** in conditioning, elicited behavior directed toward a stimulus that is reliably paired with a primary reinforcer.

**SII** abbreviation for STRONG INTEREST INVENTORY.

**Silenor** *n.* a trade name for DOXEPIN.

**silok** *n.* a CULTURE-BOUND SYNDROME found in the Philippines that has symptoms similar to those of LATAH.

**SILS** abbreviation for SHIPLEY INSTITUTE OF LIVING SCALE.

**Silver–Russell syndrome** a congenital disorder characterized by short stature, hypertrophy of one side of the body, and elevated urinary gonadotropin hormones without precocious sexual maturity. Motor development is often delayed because of muscle weakness. Physical features include **pseudohydrocephalus**, a condition of normal head circumference but a small face, giving the appearance of an enlarged head. Various studies have found a higher than average incidence of intellectual disability among people with this disorder. Also called **Silver's syndrome**. [Henry K. **Silver** (1918–1991), U.S. pediatrician; Alexander **Russell** (1914–2003), British pathologist]

**Simenon's syndrome** a delusional condition charac-

terized by the false perception or belief that one is loved by or has had a sexual affair with a public figure or other individual. See **EROTIC DELUSION**; **EROTIC PARANOIA**. See also **CLÉRAMBAULT'S SYNDROME**. [named for Georges Joseph Christian **Simenon** (1903–1989), Belgian-born French novelist, possibly because the condition was featured in one of his stories]

**similarities test** a test in which the participant must either state the likenesses between items or arrange items in categories according to their similarities. Some neuropsychological batteries include these assessments.

**similarity** *n.* one of the **GESTALT PRINCIPLES OF ORGANIZATION**. It states that people tend to organize objects with similar qualities into a perceptual group and interpret them as a whole. Also called **factor of similarity**; **law of similarity**; **principle of similarity**.

**similarity classification** see **CONCEPTUAL CLASSIFICATION**.

**similarity coefficient** any index that allows a researcher to assess the similarity of two or more samples. In **EXPLORATORY FACTOR ANALYSIS**, for example, such an index is used to compare factor structures across studies. Compare **DISSIMILARITY COEFFICIENT**.

**simile** *n.* see **METAPHOR**.

**Simmonds' disease** a disorder of the pituitary gland caused by necrosis and failure of the anterior lobe of the gland, which may be partial or complete. This results in secondary failure of the gonads, adrenal cortex, and thyroid gland, which depend on the hormonal stimulation of the pituitary. Symptoms include anorexia, atrophy of sexual features, absence of libido, hypotension, bradycardia, and hypoglycemia. [Morris **Simmonds** (1855–1925), German physician]

**Simon effect** in a two-choice task, the finding that the response to a stimulus is facilitated if the location of the stimulus corresponds to the location of the response, even though stimulus location is irrelevant to the task. For example, if a left (rather than a right) keypress is the required response to a blue stimulus, reaction time will be quicker if this stimulus is presented on the left-hand side than if it is presented on the right (and vice versa). [discovered in 1969 by U.S. psychologist J. Richard **Simon** (1929– )]

**simple causation** an instance of causation in which a single event is caused by a single identifiable antecedent, without multiple causes or other intervening processes. Compare **MULTIPLE CAUSATION**.

**simple cell** a neuron, most commonly found in the **STRIPATE CORTEX**, that has a receptive field consisting of an elongated center region and two elongated flanking regions. The response of a simple cell to stimulation in the center of the receptive field is the opposite of its response to stimulation in the flanking zones. This means that a simple cell responds best to an edge or a bar of a particular width and with a particular direction and location in the visual field. Also called **simple cortical cell**. Compare **COMPLEX CELL**.

**simple comparison** a contrast between two means, usually in the context of multilevel analyses of data from a **FACTORIAL DESIGN**. For example, consider a researcher examining the influence of three different amounts of caffeine (0 mg, 50 mg, and 100 mg) on student test performance. His or her evaluation of the differences between 0 mg and 50 mg would represent one possible simple comparison. Compare **COMPLEX COMPARISON**.

**simple correlation** the linear association of one variable with one other variable, as quantified by a **CORRELATION COEFFICIENT**.

**simple effect** in an experimental design involving multiple independent variables, the consistent total effect on a dependent variable of a particular level (quantity, magnitude, or category) of one independent variable at a particular level of another independent variable.

**simple-effects analysis** when an **ANALYSIS OF VARIANCE** or **MULTIPLE REGRESSION** analysis has identified an **INTERACTION EFFECT** among two independent variables, an examination of the effect of one variable at one level of the other variable. For example, if there were two levels of a factor,  $a_1$  and  $a_2$ , and two levels of a second factor,  $b_1$  and  $b_2$ , the comparison of  $a_1$  versus  $a_2$  at  $b_1$  would represent one simple-effects analysis; another would be a comparison of  $a_1$  versus  $a_2$  at  $b_2$ . In this way, a series of simple-effects analyses can be used to break down an interaction into its component parts.

**simple emotion** see **COMPLEX EMOTION**.

**simple eye** the type of eye found in most vertebrates and some invertebrates. It consists of a single focusing element, which may be a thickening of the exoskeleton (in an arthropod), a pinhole in the surface of the eye (in a mollusk), or a crystalline lens (in a vertebrate), plus one or more photosensitive cells. Compare **COMPOUND EYE**.

**simple factorial design** an experimental design in which the two or more levels of each **INDEPENDENT VARIABLE** or factor are observed in combination with the two or more levels of every other factor. See also **FACTORIAL DESIGN**.

**simple hypothesis** a hypothesis that specifies all the parameters of a population distribution. For example, consider a researcher who wants to examine the hypothesis that graduates from a particular institution have higher than average overall grade-point averages if they have studied abroad. If the researcher specified the population mean and standard deviation of grades in the full population of students at that institution, this would be a simple hypothesis. Compare **COMPOSITE HYPOTHESIS**.

**simple ideas** in **ASSOCIATIONISM**, the simple, unorganized sensations, derived from the various senses, that form the basis of all knowledge. Through the rational process of reflection, simple ideas can be transformed into more abstract **COMPLEX IDEAS**. [defined by John **LOCKE**]

**simple partial seizure** see **PARTIAL SEIZURE**.

**simple phobia** see **SPECIFIC PHOBIA**.

**simple random sampling** the most basic approach to drawing a **RANDOM SAMPLE** of cases, observations, or individuals from a population, in which the cases are selected individually using a fair process, such as the toss of a coin or a table of random digits. Also called **independent random sampling**.

**simple reaction time (SRT)** the total time that elapses between the presentation of a stimulus and the occurrence of a response in a task that requires a participant to perform an elementary behavior (e.g., pressing a key) whenever a stimulus (such as a light or tone) is presented. The individual makes just a single response whenever the only possible stimulus is presented. Compare **CHOICE REACTION TIME**. See also **DISCRIMINATION REACTION TIME**.

**simple regression** a type of **REGRESSION ANALYSIS** that

has only one predictor or independent variable and one outcome or dependent variable. See also MULTIPLE REGRESSION.

**simple schizophrenia** one of the four major types of schizophrenia described by Emil KRAEPELIN and Eugen BLEULER, characterized primarily by gradual withdrawal from social contact, a lack of initiative, and emotional apathy.

**simple sentence** see COMPLEX SENTENCE.

**simple stepfamily** a STEPFAMILY in which only one of the parents brings a child or children from a previous union to the new family unit.

**simple structure** in EXPLORATORY FACTOR ANALYSIS, a set of criteria for determining the adequacy of a FACTOR ROTATION solution. These criteria require that each factor show a pattern of high FACTOR LOADINGS on certain variables and near-zero loadings on others and that each variable load on only one factor. This minimizes the complexity of the factor solution, allows each variable to be most strongly identified with a specific factor, and increases interpretability.

**simple tone** see PURE TONE.

**simple universal** see PSYCHOLOGICAL UNIVERSAL.

**simplicity principle** see LIKELIHOOD PRINCIPLE.

**Simpson's paradox** a phenomenon that can occur when data from two or more studies are merged, giving results that differ from those of either study individually. For example, two studies, each showing a correlation of .00 between two variables,  $x$  and  $y$ , may show a strong positive correlation between variables  $x$  and  $y$  when the data are merged. This paradoxical effect could occur if the mean values of each variable in one study are both substantially different (e.g., lower) than their mean values in the second study. [Edward H. **Simpson** (1922– ), British statistician]

**simulated family** a technique used in training and therapy in which hypothetical family situations are enacted. In training, the enactment is by clinicians or other professionals. In FAMILY THERAPY, one or more members of the family may participate with others, who play the roles of other family members. See also ROLE PLAY.

**simulation** *n.* **1.** an experimental method used to investigate the behavior and psychological processes and functioning of individuals in social and other environments—often those which investigators cannot easily access—by reproducing those environments in a realistic way. For example, simulations are often used in personnel selection, where various exercises have been developed to tap job-related dimensions or behaviors. **2.** the artificial creation of experimental data through the use of a mathematical or computer model. The purpose is usually to test the behavior of a statistic or model under controlled conditions. **3.** resemblance or imitation, particularly the mimicking of symptoms of one disorder by another or the faking of an illness.

**simulation training** a technique in which trainees learn a complex or hazardous task by practicing with a replica of the task. This may involve the use of computer simulations, mechanical training aids, or plausible but fictitious scenarios (e.g., BUSINESS GAMES or CASE METHODS). For example, a medical student may practice inserting an intravenous line on a mannequin before doing so on a live patient, and factory workers may use virtual reality to

practice operating a new piece of heavy machinery prior to using the actual equipment.

**simulator** *n.* a training device that simulates the conditions or environment of the actual operating situation or that resembles the actual equipment to be used, such as a flight simulator for pilots. The training allows for a safe, lower-cost experience with the conditions under study but may lack realism.

**simulator sickness** a form of MOTION SICKNESS experienced without actual motion, as when playing a video game or using a flight simulator.

**simultanagnosia** *n.* see VISUAL AGNOSIA.

**simultanapraxia** *n.* a type of APRAXIA that involves the inability to perform two simultaneous motor acts (e.g., closing the eyes and protruding the tongue). It is a subset of MOTOR IMPERSISTENCE.

**simultaneous conditioning** a CLASSICAL CONDITIONING technique in which the conditioned stimulus and the unconditioned stimulus are presented at the same time. Compare DELAY CONDITIONING.

**simultaneous contrast** see COLOR CONTRAST; CONTRAST.

**simultaneous discrimination** in conditioning, DISCRIMINATION between two concurrently available stimuli.

**simultaneous lightness contrast** see BRIGHTNESS CONTRAST.

**simultaneous masking** see MASKING.

**simultaneous processing** see PARALLEL PROCESSING.

**simultaneous regression** a type of REGRESSION ANALYSIS in which all predictors or INDEPENDENT VARIABLES are entered into the equation at the same time. Each independent variable's coefficient or WEIGHT is interpreted in the context of all of the other independent variables in the model at that time, some of which may be correlated. Also called **simultaneous multiple regression**. Compare HIERARCHICAL REGRESSION; STEPWISE REGRESSION.

**Sinemet** *n.* a U.S. trade name for a drug combination of LEVODOPA and **carbidopa** used in the treatment of Parkinson's disease, the symptoms of which are due to lack of striatal dopamine. Carbidopa inhibits the action of the enzyme DOPA DECARBOXYLASE in peripheral tissues, thereby enabling levodopa to be administered in lower doses to achieve an effective concentration in the brain, where it is converted by striatal enzymes into dopamine.

**Sinequan** *n.* a trade name for DOXEPIN.

**sine qua non** an indispensable element (Latin, literally: "without which not"). In law, for example, a guilty mind (see MENS REA) is the sine qua non of CRIMINAL RESPONSIBILITY.

**sine wave** a mathematical expression involving the trigonometric functions sine or cosine. In much of physics, a sine wave is a function of time. For example, in acoustics a PURE TONE is a variation in sound pressure that is a sinusoidal function of time. The parameters of a sine wave are its frequency, amplitude, and phase. A sine wave, unlike a complex wave, has only one frequency component.

**single alternation** in experimental research, a pattern in which one kind of event alternates with another. For example, in an OPERANT CONDITIONING experiment, a reinforced trial (R) may alternate with a nonreinforced trial

(N), yielding the pattern RNRNRN . . . See also DOUBLE ALTERNATION.

**single blind** see BLIND.

**single-capacity model** see UNITARY-RESOURCE MODEL.

**single-case design** an approach to the empirical study of a process that tracks a single unit (e.g., person, family, class, school, company) in depth over time. Specific types include the ALTERNATING TREATMENTS DESIGN, the MULTIPLE BASELINE DESIGN, the REVERSAL DESIGN, and the WITHDRAWAL DESIGN. In other words, it is a WITHIN-SUBJECTS DESIGN with just one UNIT OF ANALYSIS. For example, a researcher may use a single-case design for a small group of patients with a tic. After observing the patients and establishing the number of tics per hour, the researcher would then conduct an intervention and watch what happens over time, thus revealing the richness of any change. Such studies are useful for generating ideas for broader studies and for focusing on the microlevel concerns associated with a particular unit. However, data from these studies need to be evaluated carefully given the many potential threats to INTERNAL VALIDITY; there are also issues relating to the sampling of both the one unit and the process it undergoes. Also called **N-of-1 design**; **N=1 design**; **single-participant design**; **single-subject (case) design**.

**single-case method and evaluation** a type of PSYCHOTHERAPY RESEARCH based on systematic study of one client before, during, and after intervention.

**single-cell recording** see MICROELECTRODE.

**single-channel model** a model of human INFORMATION PROCESSING in which only SERIAL PROCESSING is possible. Cognition is held to consist of a series of discrete sequenced steps involving one information source and one processing channel at a time.

**single-episode depression** a MAJOR DEPRESSIVE EPISODE in an individual who does not have a history of such episodes. It is thought that the effects of treatment in people having single episodes may be different from those in individuals with recurrent depression.

**single-event learning** the formation of associations between elements or occurrences after only one exposure to them. The term is discussed most commonly with reference to CONDITIONED TASTE AVERSION and conditioned fears. For example, a person who becomes sick after one meal at a restaurant and subsequently refuses to dine there has formed a negative association between the illness and that one meal. Similarly, a dog with no previous aversion to nail trimming may suddenly become fearful of the procedure after having its nails cut painfully short. The precise neural mechanisms by which such rapid and often long-lasting associations are formed have yet to be determined.

**single-factor design** see ONE-WAY DESIGN.

**single-gene disorder** a disease or condition that is due to the presence of a single mutated gene. Generally, the single mutation causes a failure to synthesize a normally functioning enzyme that is required for a specific step in building body tissue or for a vital stage in the metabolism of a food component. Single-gene disorders are relatively rare (Huntington's disease and sickle-cell disease are examples); instead, many diseases exhibit MULTIFACTORIAL INHERITANCE and are also influenced by environmental factors.

**single-group validity** the notion that some measures

may be valid for certain groups (e.g., Caucasians) but not others (e.g., minority ethnic groups). See also DIFFERENTIAL VALIDITY.

**single mothers by choice** women typically in their 30s and 40s who opt to raise a child without a partner. It is estimated that more than 40% of single mothers have never been married and that the largest number of unmarried women now choosing single motherhood are college educated, usually with stable economic resources. They may become pregnant by accident and then decide to bear and raise the child alone; they may plan the pregnancy and conceive with a male or through ARTIFICIAL INSEMINATION, intending to enter single motherhood; or they may adopt and raise a child on their own.

**single-nucleotide polymorphism (SNP)** a common, tiny variation in human DNA, occurring roughly every 1,000 bases along the molecule and affecting single NUCLEOTIDES. Such variations can be used as GENETIC MARKERS to track the inheritance of particular defective genes in families.

**single parent** a person who rears a child without the assistance of a partner.

**single-participant design** see SINGLE-CASE DESIGN.

**single photon emission computed tomography (SPECT)** a functional imaging technique that uses gamma radiation from a radioactive tracer to create a picture of blood flow in the body. In the brain it can be used to measure cerebral blood flow, which is an indirect measure of cerebral metabolism and activity.

**single-sample test** any of various statistical procedures used to analyze data collected from one sample and determine whether the distribution of values differs significantly from a known or theoretical distribution for the larger POPULATION from which the sample is believed to be derived. Also called **one-sample test**. Compare TWO-SAMPLE TEST.

**single-sample *t* test** a statistical procedure used to determine whether there is a significant difference between the observed mean of a SAMPLE and the known or hypothetical mean of the larger POPULATION from which the sample has been randomly drawn. In the single-sample *t* test, one calculates a *t* value using (a) the mean of the sample (observed average); (b) the mean of the population (known or theoretically expected average); (c) the STANDARD DEVIATION of the sample; and (d) the total number of sample observations taken. The *t* value obtained is then compared to a standard table of values, arranged by sample size, to determine whether it exceeds the threshold of STATISTICAL SIGNIFICANCE. Also called **one-sample *t* test**.

**single-session therapy (SST)** therapy that ends after one session, usually by choice of the client but also as indicated by the type of treatment (e.g., ERICKSONIAN PSYCHOTHERAPY, SOLUTION-FOCUSED BRIEF THERAPY). Some clients claim enough success with one hour of therapy to stop treatment, although some therapists believe that this claim represents a FLIGHT INTO HEALTH or temporary relief from symptoms. Preparation for the session (e.g., by telephone) increases the likelihood of the single-therapy session being successful.

**singles test** in parapsychology experiments on PSYCHOKINESIS, a technique in which the participant attempts to influence the throw of a single die.

**single-subject case design** see SINGLE-CASE DESIGN.

**single-subject design** see SINGLE-CASE DESIGN.

**singleton** *n.* **1.** a fetus that develops alone or an offspring born singly. **2.** sometimes, in popular usage, the only child of two parents.

**sinistral** *adj.* left-handed.

**sinistrality** *n.* a tendency to use the left hand, arm, or leg in motor activities. See also LEFT-HANDEDNESS. Compare DEXTRALITY.

**sinistro-** (**sinistr-**) *combining form* on or toward the left.

**sinusoid** *n.* **1.** generally, any SINE WAVE form. **2.** in audition, see PURE TONE. —**sinusoidal** *adj.*

**SIP** **1.** abbreviation for Sociedad Interamericana de Psicología. See INTERAMERICAN SOCIETY OF PSYCHOLOGY. **2.** abbreviation for SOCIETY OF INDIAN PSYCHOLOGISTS.

**SIPPA** abbreviation for Students of the International Positive Psychology Association. See INTERNATIONAL POSITIVE PSYCHOLOGY ASSOCIATION.

**SIQ** abbreviation for SPORT IMAGERY QUESTIONNAIRE.

**SIS** **1.** abbreviation for sensory-information store. See SENSORY MEMORY. **2.** abbreviation for STIGMA IMPACT SCALE.

**sissy behavior** slang for effeminate behavior in boys, which is often a source of ridicule by others. See ROLE CONFUSSION; TOMBOYISM.

**SIT** **1.** acronym for SLOSSON INTELLIGENCE TEST. **2.** acronym for SMELL IDENTIFICATION TEST. **3.** acronym for STRESS-INOCULATION TRAINING.

**situated cognition** cognition seen as inextricable from the context in which it is applied. From this, it follows that intelligence also cannot be separated from its context of application (**situated intelligence**). See also STREET INTELLIGENCE.

**situated identity theory** the theory that individuals take on different roles in different social and cultural settings, so that a person's behavior pattern may shift radically according to the situation and the others with whom he or she is interacting. [proposed in 1981 by U.S. sociologists C. Norman Alexander Jr. (1939–1989) and Mary Glenn Wiley]

**situated intelligence** see SITUATED COGNITION.

**situated knowledge** knowledge that is embedded in, and thus affected by, the concrete historical, cultural, linguistic, and value context of the knowing person. The term is used most frequently in perspectives arising from SOCIAL CONSTRUCTIONISM, RADICAL FEMINISM, and POSTMODERNISM to emphasize their view that absolute, universal knowledge is impossible. It sometimes carries the further implication that social, cultural, and historical factors will constrain the process of knowledge construction itself. To the extent that knowledge is situated, it is difficult to avoid some kind of epistemological RELATIVISM.

**situated learning** learning that occurs in specific physical and social contexts (e.g., in a classroom). Knowledge learning may be facilitated when people interact within the setting or if they interact with the physical setting (e.g., when map learning occurs in the actual physical space being studied). However, situated learning may be less meaningful than other types of learning if it does not transcend the particular situation in which it was acquired (see CONTEXT-SPECIFIC LEARNING).

**situation** *n.* one or more circumstances, conditions, states, or entities in the environment that have the potential to exert causal influences on an individual's behavior. To social psychologists, the term commonly refers to the real or imagined presence of other persons, but it can also refer to the physical environment or to more abstract qualities (e.g., deadlines imposed by a supervisor or different motivational orientations). A central belief among social psychologists is that situations affect behavior, often powerfully so and often without the person's awareness of such influence. Attention to the situation as a cause of behavior is commonly linked to Kurt LEWIN's famous dictum  $B = f(P, E)$ , postulating that all behavior is a function of the person and the environment, although the strict separability of these two factors into independent causal forces is questionable.

**situational approach** see CONTINGENCY MODEL.

**situational attribution** the ascription of one's own or another's behavior, an event, or an outcome to causes outside the person concerned, such as luck, pressure from other people, or external circumstances. Also called **environmental attribution**; **external attribution**. Compare DISPOSITIONAL ATTRIBUTION.

**situational conditions** all the relevant external variables within a setting that influence individual behavior. Situational conditions in a classroom setting, for example, include the variables affecting student learning and achievement: physical environment, teaching methods, time factors, goals, organization of material, methods of testing, consequences of performance, type of reinforcement, and social relationships.

**situational determinant** an environmental condition that exists before and after an organism's response and influences the elicitation of this behavior. It is one of the four variables considered in behavioral analysis. See SORC.

**situational differences** any distinction arising from environmental characteristics, as opposed to INDIVIDUAL DIFFERENCES. For example, in a study of men and women in social settings versus business settings, the amount of positive emotion displayed by the participants may be explained not only by gender (e.g., females tending to exhibit more positive emotion) but also by the situation (more positive emotions in a social setting regardless of whether the participant is male or female).

**situational homosexuality** same-sex sexual behavior that develops in a situation or environment in which the opportunity for heterosexual activity is missing and close contact with individuals of the same sex occurs, such as a prison, school, or military setting where individuals are living together, segregated according to their sex. Once away from this setting, the person typically returns to heterosexual activity.

**situational interview** an EMPLOYMENT INTERVIEW in which applicants for a job are presented with scenarios and asked what they would do in those situations. Their potential to perform the job is then evaluated using BEHAVIORALLY ANCHORED RATING SCALES.

**situationalism** *n.* see SITUATIONISM.

**situational judgment test (SJT)** a type of EMPLOYMENT TEST that presents respondents with realistic work-related situations and asks them how to handle those scenarios. Several potentially plausible response options are provided for each scenario, reflecting behaviors that may

be effective or ineffective. The respondent must exercise his or her judgment and choose what he or she believes is the appropriate response. SJTs may be administered orally or via paper, video, or computer.

**situational leadership theory** a CONTINGENCY THEORY OF LEADERSHIP suggesting that successful leaders use varying amounts of directive (TASK-MOTIVATED) and supportive (RELATIONSHIP-MOTIVATED) leadership, depending on the job maturity (e.g., experience, ability, knowledge) and psychological maturity (e.g., level of motivation, willingness to accept responsibility) of followers. [proposed by U.S. management theorists Paul Hersey (1931–2012) and Kenneth H. Blanchard (1939–)]

**situationally bound panic attack** see CUED PANIC ATTACK.

**situationally predisposed panic attack** a PANIC ATTACK that occurs in response to a specific situational trigger but is not invariably induced by it. Compare CUED PANIC ATTACK; UNCUED PANIC ATTACK.

**situational psychosis** a severe but temporary reaction to a traumatic event or situation (such as imprisonment) involving symptoms such as delusions and hallucinations. Also called **reactive psychosis**; **traumagenic psychosis**.

**situational restraint** the use of environmental features (e.g., screens on windows, immovable furniture), as opposed to physical restraint of an individual, to minimize the risk of dangerous or destructive acts by patients with mental or emotional problems.

**situational semantics** a branch of SEMANTICS holding that the meaning of utterances, particularly their truth value, must be understood by considering not only the correspondence of the utterance to what is actually the case in the world but also the situation in which the utterance is made. A major implication of this notion is that truth is situational and that language expresses primarily situations rather than transsituational facts. This view is related to SOCIAL CONSTRUCTIONISM, POSTMODERNISM, and some species of FEMINISM.

**situational test** see SITUATION TEST.

**situation awareness** conscious knowledge of the immediate environment and the events that are occurring in it. Situation awareness involves perception of the elements in the environment, comprehension of what they mean and how they relate to one another, and projection of their future states. In ergonomics, for example, it refers to the operator's awareness of the current status and the anticipated future status of a system. Situation awareness is influenced by a number of factors, including stress; it may be impaired by COGNITIVE TUNNELING or SOCIAL TUNNELING. Compare AMBIENT AWARENESS; VIGILANCE.

**situation ethics** the view that the morality or immorality of an action must be evaluated within the context of a given situation as interpreted according to some ethical norms. Compare MORAL ABSOLUTISM; MORAL RELATIVISM.

**situationism** *n.* the view that an organism's interaction with the environment and situational factors, rather than personal characteristics and other internal factors, are the primary determinants of behavior. Also called **situation-alism**. [proposed by Kurt LEWIN]

**situation sampling** the observation of individuals in several real-life situations—as opposed to experimental situations—as part of the study of their behavior.

**situation test** a test that places an individual in a natural setting, or in an experimental setting that approximates a natural one, to assess either the individual's ability to solve a problem that requires adaptive behavior under stressful conditions or the individual's reactions to what is believed to be a stressful experience. For example, a course of DESENSITIZATION therapy aimed at reducing phobic reactions might begin with a situation test in which the individual encounters the phobic object. The individual's reactions are then assessed and considered in relation to his or her needs or a specific therapy program. Also called **situational test**.

**SITUTs** acronym for stimulus-independent and task-unrelated thoughts. See MIND WANDERING.

**Sixteen Personality Factor Questionnaire (16PF)** the fifth edition (1993) of a comprehensive self-report PERSONALITY INVENTORY. The instrument assesses personality on 16 key scales: warmth, vigilance, reasoning, abstractedness, emotional stability, privateness, dominance, apprehension, liveliness, openness to change, rule-consciousness, self-reliance, social boldness, perfectionism, sensitivity, and tension. The 16 factors (called SOURCE TRAITS) are grouped into 5 “global factors”: extraversion, independence, tough-mindedness, anxiety, and self-control. [developed by Raymond B. CATTELL and his associates]

**sixth cranial nerve** see ABDUCENS NERVE.

**sixth sense 1.** in general language, an INTUITION or INSTINCT that enables a person to make a correct judgment or decision without conscious use of the five senses or normal cognitive processes. **2.** in parapsychology, the ostensible sensory modality responsible for mediating the phenomena of EXTRASENSORY PERCEPTION (ESP). Some consider the term to be a synonym for ESP. See PSI.

**size constancy** the ability to perceive an object as being the same size despite the fact that the size of its retinal image changes depending on its distance from the observer. It is a type of PERCEPTUAL CONSTANCY.

**size cue** any of a variety of means used by the visual system to interpret the APPARENT SIZE of a stimulus. These include the size of the retinal image, the relationship of the object to others in the VISUAL FIELD, DEPTH CUES, and SIZE CONSTANCY.

**size discrimination** the ability to distinguish differences in the sizes of objects.

**size-distance paradox** an illusion that an object is bigger or smaller than it actually is, caused by a false perception of its distance from the viewer. For example, in the so-called **moon illusion**, the moon appears to be larger on the horizon, where DEPTH CUES (e.g., ocean, trees) make it appear to be farther away, than at its zenith, where there are no depth cues. Also called **distance paradox**.

**size-invariant neuron** see LOCATION-INVARIANT NEURON.

**size principle** the principle that the order of RECRUITMENT of motor neurons serving a particular muscle is related to their size: To produce muscle responses of increasing strength, small, low-threshold neurons are recruited first, and large, high-threshold neurons are recruited last.

**size-weight illusion** the tendency to judge density when trying to judge weight; a person may be influenced by the size of an object and thus perceive a large object as

weighing less than an equally heavy but smaller, denser object. Also called **Charpentier's illusion**.

**Sjögren–Larsson syndrome** an autosomal recessive disorder characterized by scaly skin, spasticity, and intellectual disability, caused by several different genetic factors. Sweat glands are sparse or deficient. The scaliness varies in specific cases among populations from different regions of the world. [reported in 1957 by Torsten **Sjögren** (1896–1974), Swedish physician, and Tage Konrad Leopold **Larsson** (1905–1998), Swedish scientist]

**Sjögren's syndrome** see XEROPHTHALMIA. [Henrik S. C. **Sjögren** (1899–1986), Swedish ophthalmologist]

**SJT** abbreviation for SITUATIONAL JUDGMENT TEST.

**skeletal age** a measure of the degree to which a skeleton has matured. Skeletal age can be the same as, more than, or less than CHRONOLOGICAL AGE.

**skeletal muscle** a muscle that provides the force to move a part of the skeleton. Skeletal muscles are attached to the bones by tendons and usually span a joint, so that one end of the muscle is attached via a tendon to one bone and the other end is attached to another bone. Skeletal muscles work in reciprocal pairs (see ANTAGONISTIC MUSCLES) so that a bone can be moved in opposite directions. Skeletal muscle is composed of numerous slender, tapering MUSCLE FIBERS, each of which is bounded by a membrane (sarcolemma) and contains cytoplasm (sarcoplasm). Within the sarcoplasm are the longitudinal contractile fibrils (myofibrils), organized into arrays (sarcomeres) that give a striped appearance when viewed microscopically. Contraction of skeletal muscle is typically under voluntary control of the central nervous system. Each muscle fiber is stimulated to contract by nerve impulses conducted along a MOTOR NEURON and transmitted to the fiber via a NEUROMUSCULAR JUNCTION. A single neuron may activate from several up to hundreds of muscle fibers. Also called **striated muscle**; **voluntary muscle**. Compare CARDIAC MUSCLE; SMOOTH MUSCLE.

**skelic index** the ratio between length of the legs and length of the trunk. This index is used in ANTHROPOMETRY.

**skeptical postmodernism** a perspective within POSTMODERNISM that is particularly reluctant to grant any foundations for meaning or morality. From such a perspective it is difficult to see why any political system or ideology should be thought preferable to any other, or how the idea of social progress can have any meaning. Skeptical postmodernism is often contrasted with AFFIRMATIVE POSTMODERNISM.

**skepticism** *n.* **1.** an attitude of questioning, disbelief, or doubt. **2.** in philosophy, the position that certainty in knowledge can never be achieved. David HUME made skepticism a cornerstone of his system and provoked much later discussion when he taught that sensory experience provides no sure basis for knowledge of the external world and that nothing can be proved by observation. CAUSATION, for example, is only an inference that relates two observed events, and one has no knowledge that this relationship will apply in similar cases; it is a generalization that could be proved wrong by a different result. In modern philosophy, POSTMODERNISM, POSTSTRUCTURALISM, and DECONSTRUCTION are essentially systems of skepticism. —**skeptic** *n.* —**skeptical** *adj.*

**skewness** *n.* the degree to which a set of scores, measurements, or other numbers are asymmetrically distrib-

uted around a central point. A normal FREQUENCY DISTRIBUTION of data is shaped like a bell, with equal values for each of its three indices of CENTRAL TENDENCY—the MEAN, the MEDIAN, and the MODE. Approximately 68% of the scores lie within 1 STANDARD DEVIATION of the mean and approximately 95% of the scores lie within 2 standard deviations of the mean. When a distribution has a few extreme scores toward the high end relative to the low end (e.g., when a test is difficult and few test takers do well), it has a **positive skew** (or is **positively skewed**), such that the mean is greater than the mode. When a distribution has a few extreme scores toward the low end relative to the high end (e.g., when a test is easy and most test takers do well), it has a **negative skew** (or is **negatively skewed**).

**skill** *n.* an ability or proficiency acquired through training and practice. Motor skills are characterized by the ability to perform a complex movement or SERIAL BEHAVIOR quickly, smoothly, and precisely. Skills in other learned tasks include BASIC SKILLS, COMMUNICATION SKILLS, and SOCIAL SKILLS.

**skilled nursing facility** (SNF) a licensed or approved facility, whether freestanding or affiliated with a hospital, that provides continuous rehabilitation and medical care of a lesser intensity than that provided in an acute-care hospital setting. Also called **convalescent center**. See also CONTINUING CARE UNIT.

**skill learning** learning to perform a task with proficiency, as defined by ease, speed, and accuracy of performance, acquired through extensive practice. Skills may be motor, perceptual, cognitive, or a combination of these (as in reading and playing music). See also THREE-STAGE THEORY.

**skill theory** the proposition that cognitive development is the result of a dynamic interaction between the individual and the environment. According to this theory, a skill (or **dynamic skill**) is the capacity to act in an organized way in a specific context, and in order for a skill to be developed to its OPTIMAL LEVEL, it must be exercised in the most supportive of environments. Also called **dynamic skill theory**. [proposed by U.S. psychologist Kurt W. Fischer (1943– )]

**skimming** *n.* a rapid, somewhat superficial, reading of material to get the general idea of the content. —**skim** *vb.*

**skin** *n.* the external covering of the body, consisting of an outer layer (epidermis) and a deeper layer (dermis) resting on a layer of fatty subcutaneous tissue. The skin is well supplied with nerves and blood vessels and forms an effective yet sensitive barrier that prevents the entry of foreign substances and pathogens into the body. It defends against injury to underlying tissues, reduces water loss from the body, and forms part of the body's temperature-regulation mechanism through the evaporation of sweat secreted from sweat glands. Human skin typically has only a sparse covering of hair, except on the head and genital regions, and the hair has minimal value as insulation, although it is often highly significant in social terms. In humans, insulation is provided mainly by the subcutaneous ADIPOSE TISSUE. The root of each hair arises from a HAIR FOLLICLE, into which the ducts of sebaceous glands discharge sebum, an oily secretion that lubricates and waterproofs the skin surface. Various types of sensory nerve endings provide the skin with touch and pressure sensitivity, as well as sensations of pain and temperature (see CUTANEOUS RECEPTOR).

**skin conductance** the degree to which the skin trans-

mits a small electric current between two electrodes, changes in which are typically used to measure a person's level of arousal or energy mobilization (see GALVANIC SKIN RESPONSE). In contrast to other autonomically mediated indices, skin conductance rarely shows relations to specific emotional states, such as fear or anger, responding instead to level of arousal. The mechanism of skin conductance is not fully known: It seems to be related to the electrical activity of sweat glands but not to sweating itself. Compare SKIN RESISTANCE.

**skin graft** a piece of skin, either of full thickness or split (i.e., partial) thickness, surgically applied to wounds to facilitate healing. Skin grafts can conform to irregular wounds and concavities.

**Skinner box** see OPERANT CONDITIONING CHAMBER. [initially developed by B. F. SKINNER]

**skin-picking disorder** see EXCORIATION (SKIN-PICKING) DISORDER.

**skin popping** slang for the injection of a substance containing an opioid—usually HEROIN—under the skin, as opposed to mainlining (i.e., injecting into a vein).

**skin receptor** see CUTANEOUS RECEPTOR.

**skin resistance** the opposition of the skin to the passage of an electric current. This electrodermal property is measured by applying a small external charge (e.g., 1.0 V) across two electrodes placed at different points on the palm, hand, or other area and recording how much of the current passes between the electrodes; the measurement is then converted into micro-ohms (or microamperes) to provide the degree to which the skin resists the flow of electricity. The baseline or minimum level of electrical skin resistance in an individual in a resting state is called **basal skin resistance**. Sometimes used in research as a physiological marker of arousal, and more controversially in POLYGRAPH examinations as a manifestation of deception and various emotional states, skin resistance is the reciprocal of SKIN CONDUCTANCE. See also GALVANIC SKIN RESPONSE.

**skin sense** see CUTANEOUS SENSE.

**skin stimulation** a cutaneous sensation experienced as pain, pressure, coldness, warmth, tickling, or itching through nerve receptors in the skin.

**sl** abbreviation for sublingual.

**SLD** abbreviation for SPECIFIC LEARNING DISABILITY.

**SLE** abbreviation for systemic LUPUS ERYTHEMATOSUS.

**sleep** *n.* a circadian state characterized by partial or total suspension of consciousness, voluntary muscle inhibition, and relative insensitivity to stimulation. Other characteristics include unique sleep-related electroencephalogram and brain-imaging patterns (see SLEEP STAGES). These characteristics help distinguish normal sleep from a loss of consciousness due to brain injury, disease, or drugs. See also NREM SLEEP; REM SLEEP.

**sleep apnea** the temporary cessation of breathing while asleep, which occurs when the upper airway briefly becomes blocked (**obstructive sleep apnea**) or when the respiratory centers in the brain fail to stimulate respiration (**central sleep apnea**). It can cause severe daytime sleepiness, and evidence is building that untreated severe sleep apnea may be associated with high blood pressure and risk for stroke and heart attack. See also BREATHING-RELATED SLEEP DISORDER.

**sleep attack** see NARCOLEPSY.

**sleep center** an obsolete name for an area in the hypothalamus formerly thought to control sleep. It has now been shown that no single area of the brain governs the SLEEP-WAKE CYCLE; rather, multiple areas, including the hypothalamus and RETICULAR ACTIVATING SYSTEM, have been implicated in its regulation. See also WAKING CENTER.

**sleep cycle** a recurring pattern of SLEEP STAGES in which a period of SLOW-WAVE SLEEP is followed by a period of REM SLEEP. In humans, a sleep cycle lasts approximately 90 minutes.

**sleep deprivation** the condition of getting insufficient sleep. This may occur as a result of illness, shift work, or lifestyle considerations (e.g., having a newborn, staying up late to study). It may also be induced for experimental or interrogation purposes. Studies show that the loss of one night's sleep has a substantial effect on physical or mental functioning; participants score significantly lower on tests of judgment and SIMPLE REACTION TIME and show impairments in daytime alertness and memory. Sleep loss also may be detrimental to the immune and endocrine systems. See also REM-SLEEP DEPRIVATION.

**sleep disorder** a persistent disturbance of typical sleep patterns (including the amount, quality, and timing of sleep) or the chronic occurrence of abnormal events or behavior during sleep. In *DSM-IV-TR*, sleep disorders are broadly classified according to apparent cause, which may be endogenous or conditioning factors (**primary sleep disorders**), another mental disorder, a medical condition, or substance use. Primary sleep disorders are subdivided into DYSSOMNIAS and PARASOMNIAS. *DSM-5*, which encompasses sleep disturbances under the rubric **sleep-wake disorders**, eliminates sleep disorders related to another mental disorder and to a general medical condition as distinct entities in order to avoid making causal assumptions about comorbid disorders. A classification system introduced in 1979 by the Association of Sleep Disorders Centers groups sleep disorders according to individuals' presenting symptoms: DISORDERS OF INITIATING AND MAINTAINING SLEEP; DISORDERS OF EXCESSIVE SOMNOLENCE; DISORDERS OF THE SLEEP-WAKE CYCLE SCHEDULE; and DYSFUNCTIONS ASSOCIATED WITH SLEEP, SLEEP STAGES, OR PARTIAL AROUSALS.

**sleep disorientation** see CONFUSIONAL AROUSAL.

**sleep drive** the basic physiological urge to sleep, which varies throughout the day but typically is strongest (for adults) between 2 a.m. and 4 a.m. and between 1 p.m. and 3 p.m. It appears to be governed in part by the hypothalamus and the RETICULAR ACTIVATING SYSTEM.

**sleep drunkenness** see CONFUSIONAL AROUSAL.

**sleep efficiency** **1.** the ratio of total time asleep to total time in bed, which is therefore a measure of INSOMNIA. **2.** more generally, the amount of restorative sleep one gets, as indexed by one's cognitive functioning on the following day.

**sleep enuresis** see BED-WETTING.

**sleep epilepsy** **1.** a type of epilepsy in which seizures occur exclusively or predominantly during sleep. **2.** a former name for NARCOLEPSY.

**sleep effect** the finding that the impact of a persuasive message increases over time. This effect is most likely to occur when a person carefully scrutinizes a message with relatively strong arguments and then subsequently re-



ceives a discounting cue (i.e., some piece of information suggesting that the message should be disregarded). The discounting cue weakens the initial impact of the message, but if the cue and the arguments in the message are not well integrated in memory, the cue may gradually be forgotten. If this occurs, the impact of the arguments will be greater at a later point in time than they were at the time of their initial presentation.

**sleep hygiene** techniques for the behavioral treatment of insomnia that involve instructions given to the client to follow certain routines aimed at improving sleep patterns. Typical recommendations include using the bed only for sleeping and sex (e.g., the client is instructed not to read in bed), not napping during the day, decreasing caffeine intake or eliminating it after a certain point in the day, going to bed regularly at a set time, and keeping a sleep diary.

**sleepiness** *n.* see SOMNOLENCE.

**sleeping sickness** an infection found only in tropical Africa; it is caused by parasitic protozoans of the genus *Trypanosoma* (*T. gambiense* and *T. rhodesiense*), which are transmitted by the bite of infected tsetse flies. Initial symptoms include fever, headaches, sweating, and swollen lymph nodes, progressing—upon inflammation of the brain and its protective membranes (see MENINGES)—to lethargy, excessive sleepiness (see HYPERSOMNIA), and confusion. If untreated, sleeping sickness can result in coma and eventually death. Also called **African trypanosomiasis**.

**sleep inversion** a tendency to sleep or be somnolent by day and to remain awake at night.

**sleep laboratory** a research facility designed to monitor patterns of activity during sleep, such as eye movement, breathing abnormalities, heartbeat, brain waves, and muscle tone. Sleep laboratories are typically found in neurology departments in hospitals and universities or in sleep disorder clinics.

**sleep latency** the amount of time it takes for an individual to fall asleep once the attempt to do so is made. Sleep latency is measured in the diagnosis of SLEEP DISORDERS. Sleeping pills (e.g., benzodiazepines) are designed to decrease sleep latency so that the individual can fall asleep more quickly.

**sleep learning** the learning of material presented while one is asleep. The possibility of true sleep learning is still a controversial issue. Simple learning, such as CLASSICAL CONDITIONING, may occur during sleep; more complex learning, such as the acquisition of a foreign language, has not been reliably demonstrated.

**sleeplessness** *n.* see INSOMNIA.

**sleep-onset insomnia** see INITIAL INSOMNIA.

**sleep paralysis** brief inability to move or speak just before falling asleep or upon awakening, often accompanied by terrifying hallucinations. It may occur in any individual but is seen especially in individuals with NARCOLEPSY and may be due to a temporary dysfunction of the RETICULAR ACTIVATING SYSTEM.

**sleep pattern** a habitual, individual pattern of sleep, such as two 4-hour periods, daytime napping, various forms of insomnia (e.g., initial or intermittent insomnia), or excessive sleep. See also SLEEP–WAKE CYCLE.

**sleep psychology** a synonym of BEHAVIORAL SLEEP MED-

ICINE used when the practitioner is a professionally licensed psychologist.

**Sleep Questionnaire and Assessment of Wakefulness (SQAW)** an extensive questionnaire to assess sleep behaviors and sleep disorders. [developed in 1979 by U.S. physician Laughton E. Miles at the Stanford University Sleep Disorders Clinic and Research Center]

**sleep recovery** sleeping more than usual after a period of sleep deprivation, as though in compensation.

**sleep-related hypoventilation** see BREATHING-RELATED SLEEP DISORDER.

**sleep rhythm** see SLEEP–WAKE CYCLE.

**sleep spindles** regular sinusoidal electroencephalographic oscillations that rise and fall in amplitude in the shape of symmetrical hairpins or spindles during Stage 2 NREM sleep (see SLEEP STAGES). Spindles have a frequency of about 15 Hz and are believed to indicate a state of light sleep. They are often seen with K COMPLEXES.

**sleep stages** the stages of nocturnal sleep as distinguished by physiological measures, mainly scalp electroencephalography. Typically, a regular pattern of occipital ALPHA WAVES characteristic of a relaxed state becomes intermittent in STAGE 1 SLEEP, which is marked by drowsiness with upward-rolling eye movements. This progresses to STAGE 2 SLEEP (light sleep), characterized by SLEEP SPINDLES and K COMPLEXES. In STAGE 3 SLEEP and STAGE 4 SLEEP (deep sleep), DELTA WAVES predominate (see SLOW-WAVE SLEEP). These four stages comprise NREM SLEEP and are interspersed with periods of REM SLEEP, when most dreaming occurs. After a period of deep sleep, an individual may return to either light sleep or REM sleep, and the cycle can recur multiple times over a normal night.

**sleep talking** verbalization during sleep, either in the form of mumbling or coherent speech. It usually occurs during NREM SLEEP, and the sleeper is sometimes responsive to questions or commands. It is generally not considered pathological and occurs at one time or another in most people. Also called **somniloquy**.

**sleep terror disorder** a SLEEP DISORDER characterized by repeated episodes of abrupt awakening from NREM SLEEP accompanied by signs of disorientation, extreme panic, and intense anxiety. More intense than NIGHTMARES and occurring during the first few hours of sleep, these episodes typically last between 1 and 10 minutes and involve screaming and symptoms of autonomic arousal, such as profuse perspiration, dilated pupils, rapid breathing, and a rapidly beating heart. The individual is difficult to wake or comfort and does not have detailed recall of the dream upon waking; complete loss of memory for the episode is common. The disorder occurs most often in children and generally resolves itself during adolescence. In adults, it is often associated with psychopathology and a more chronic course. Also called **night terror**. See also PARASOMNIA.

**sleep–wake cycle** the natural, brain-controlled bodily rhythm that results in alternate periods of sleep and wakefulness. The sleep–wake cycle may be disrupted by a number of factors, such as flight across time zones, shift work, drug use, or stress (see CIRCADIAN RHYTHM SLEEP DISORDER; DISORDERS OF THE SLEEP–WAKE CYCLE SCHEDULE). Also called **sleep rhythm**; **sleep–wakefulness cycle**. See also MONOPHASIC SLEEP; POLYPHASIC SLEEP.

**sleep–wake disorder** see SLEEP DISORDER.

**sleep-wake schedule disorder** see CIRCADIAN RHYTHM SLEEP DISORDER.

**sleepwalking disorder** a SLEEP DISORDER characterized by persistent incidents of complex motor activity during slow-wave NREM SLEEP. These episodes typically occur during the first hours of sleep and involve getting out of bed and walking, although the individual may also perform more complicated tasks, such as eating, talking, or operating machinery. While in this state, the individual stares blankly, is essentially unresponsive, and can be awakened only with great difficulty; he or she does not remember the episode upon waking. Also called **noctambulation**; **somnambulism**. See also PARASOMNIA.

**SLI** abbreviation for SPECIFIC LANGUAGE IMPAIRMENT.

**slice-of-life commercial** see NONOVERT APPEAL.

**slip** *n.* an error, such as a SLIP OF THE TONGUE, that is committed unintentionally, even while knowing that it is an error. It implies a momentary loss of deliberate control. See PARAPRAXIS.

**slip of the pen** see FREUDIAN SLIP; PARAPRAXIS.

**slip of the tongue** a minor error in speech, such as a SPOONERISM, that is episodic and not related to a speech disorder or a stage of second-language acquisition. Psychoanalysts have long been interested in the significance of such slips, referring to them as FREUDIAN SLIPS and believing them to reveal unconscious associations, motivations, or wishes. Also called **lapsus linguae**; **speech error**. See also PARAPRAXIS; VERBAL LEAKAGE.

**slippage** *n.* see COGNITIVE SLIPPAGE.

**slipped disk** a condition in which the gelatinous interior of an intervertebral disk is pushed through a weakened portion of its fibrous coating, pressing on adjacent nerve roots and associated structures. This causes pain in the back, leg, or arm, depending on the position of the disk and the nerve involved, and sometimes nerve damage (resulting in numbness, weakness, etc.). The SCIATIC NERVE is most commonly affected. The medical name for this condition is **prolapsed intervertebral disk**.

**slit viewing** see ANORTHOSCOPIC PERCEPTION.

**slope** *n.* the steepness or slant of a line on a graph, measured as the change of value on the Y-AXIS associated with a change of one unit of value on the X-AXIS. In a REGRESSION EQUATION, slope is represented by the variable *b*, with  $+b$  indicating an upward slope to the line and  $-b$  indicating a downward slope. See also ACCELERATION.

**Slosson Intelligence Test (SIT)** a brief individual test of verbal intelligence designed for use with individuals ages 4 and older. It consists of 187 oral questions assessing six cognitive domains: vocabulary, general information, similarities and differences, comprehension, quantitative ability, and auditory memory. Originally developed in 1963, the SIT was revised in 1991 (**SIT-R**) and in 2002 (**SIT-R3**). [Richard Lawrence Slosson Jr. (1910–1970), U.S. psychologist]

**slowdown** *n.* a tactic in which employees seeking workplace change put pressure on management by intentionally slowing production to levels that are costly to the company but not in violation of contractual agreements.

**slow euthanasia** in the debate over ASSISTED DEATH, a controversial term that refers to the practice of **palliative sedation**, whereby a terminally ill person is heavily sedated

with opiates in the final hours or days of life. Critics claim this practice is an act of ACTIVE EUTHANASIA as the sedation is likely to hasten death. In response, proponents of the practice have used the PRINCIPLE OF DOUBLE EFFECT to argue that there is no intent to hasten death but only to provide comfort and relieve suffering.

**slow learner** a child of lower-than-average intelligence. Such children are so designated despite the fact that a somewhat lower-than-average IQ does not necessarily imply slow learning. Slow learners are estimated at 15% to 17% of the average school population. They do not show marked variations from physical, social, and emotional norms and are usually placed in regular classes. The term *slow learner* is often imprecisely applied to children with mild intellectual disability as well as to children of normal capacity whose intellectual progress is slow.

**slow muscle fiber** a type of muscle fiber found in SKELETAL MUSCLE that contracts slowly and is resistant to fatigue. Compare FAST MUSCLE FIBER.

**slow-release preparation** a drug preparation that is formulated in such a way that the active ingredient is released over an extended period. For example, drugs may be administered in the form of transdermal patches applied to the skin, through which they slowly release their contents; or as extended-release capsules, which contain quantities of the active drug surrounded by separate coatings that dissolve at different rates in the stomach and intestines. Injectable slow-release forms (depot preparations) are often oil based; these are taken up into fat stores in the body and released over extended periods of days to weeks. Also called **extended-release preparation**; **sustained-release preparation**.

**slow wave** see DELTA WAVE.

**slow-wave sleep** deep sleep that is characterized by increasing percentages of particular types of DELTA WAVES on the electroencephalogram, corresponding to Stages 3 and 4 of NREM SLEEP. See also SLEEP STAGES.

**Sly syndrome** see BETA-GLUCURONIDASE DEFICIENCY.

**SM** abbreviation for SECONDARY MEMORY.

**SMA** **1.** abbreviation for SPINAL MUSCULAR ATROPHY. **2.** abbreviation for SUPPLEMENTARY MOTOR AREA.

**smallest space analysis (SSA)** a statistical technique for creating a visual representation of data, in which more closely correlated variables are grouped together. Smallest space refers to the fewest number of geometric dimensions (e.g., one dimension may be denoted by a line, two by a square, three by a cube) by which a body of data may be adequately represented. Similar in purpose to FACTOR ANALYSIS and PRINCIPAL COMPONENTS ANALYSIS, smallest space analysis may be applied to the assessment of objects, persons, attitudes, test constructs, and other similar variables.

**small for gestational age (SGA)** a newborn infant who weighs below the 10th percentile for its sex and gestational age. These babies are often born with a LOW BIRTH WEIGHT.

**Smalltalk** *n.* one of the first object-oriented computer languages, designed at Xerox in the 1970s. The name was chosen because the language was designed to be a communication medium for children. Window systems and mouse-driven control eventually emerged from this early research project.

**SMART** acronym for Sensory Modality Assessment and Rehabilitation Technique. See VEGETATIVE STATE.

**smart house** a home that contains numerous devices that can be programmed to perform tasks automatically or be integrated into a single system controlled by a user through one unit. For example, a door can be programmed to unlock automatically whenever a smoke detector sounds in the home, or a light can be turned on and off with a remote control rather than a light switch. Smart house technology can also incorporate elaborate systems and sensors that monitor household equipment, such as appliances and heating and cooling systems, as well as the activities of occupants, often providing alerts to individuals or external agencies as necessary. Such homes are especially important to older adults and individuals with disabilities because they enable increased independence and enhance quality of life.

**smell 1. n.** an ODOR. **2. n.** the sense that enables an organism to detect the odors of volatile substances. Molecules of odorant chemicals carried by air currents are absorbed into nasal mucus and stimulate the OLFACTORY RECEPTORS, where they are converted to neural messages. See OLFACTION; OLFACTORY TRANSDUCTION. **3. vb.** to detect odor by means of the olfactory system.

**smell brain** see RHINENCEPHALON.

**smell compensation** the perception of a combination of ODORANTS as less intense than the component odorants.

**Smell Identification Test (SIT)** a 40-item test of odor-identification ability for individuals ages 5 years and older. It is used to assess olfactory sensitivity and diagnose or evaluate olfactory impairment, which has been recognized as an important clinical indicator of neurological and psychiatric disorders (e.g., Alzheimer's disease, Parkinson's disease). Test participants scratch and sniff a scent-impregnated patch and then identify the odor from a list of four answer choices, repeating the procedure for all 40 test stimuli. A brief version of the test (**B-SIT**) using 12 odorant stimuli determines gross dysfunction of olfactory sensitivity. Also called **University of Pennsylvania Smell Identification Test (UPSIT)**. [developed by U.S. psychologist Richard L. Doty (1944– )]

**smell prism** see HENNING'S ODOR PRISM.

**Smith-Lemli-Opitz syndrome** an autosomal recessive disorder marked by the inability to produce cholesterol and by MICROCEPHALY. Other features may include a broad, short nose; syndactyly (fused digits) or polydactyly (extra digits); and intellectual disability. Nearly all affected males have urethral or other genital anomalies, whereas females have no obvious abnormalities of the external genitalia, a factor that led early investigators to believe erroneously that the syndrome affected only males. This disorder is caused by mutations of the *DHCR7* gene. Also called **RSH syndrome** (from the names of the three affected families originally reported); **Smith syndrome**. [reported in 1964 by David W. **Smith** (1926–1981), U.S. pediatrician; Luc **Lemli** (1935– ), Belgian pediatrician; and John M. **Opitz** (1935– ), U.S. geneticist]

**smoking n.** the act of drawing the smoke of burning TOBACCO or other substances (e.g., marijuana, CRACK cocaine) into the mouth or lungs, leading to rapid onset of the drug's effect.

**smoking cessation treatment** interventions to help people quit smoking that typically involve behavioral tech-

niques (e.g., reinforcement), social support, environmental change, and healthy activity substitution (e.g., exercise), sometimes in conjunction with nicotine replacement therapy or other drugs. Group treatment is often offered in community settings.

**smoothed curve** a graphical representation of the relationship between two variables that has been adjusted to eliminate erratic or sudden changes in SLOPE, so that its fundamental shape and direction will be evident. Also called **smooth curve**.

**smoothing n.** a collection of techniques used to reduce the irregularities (RANDOM VARIATION) in a data set or in a plot (curve) of that data, particularly in TIME-SERIES ANALYSES, so as to more clearly see the underlying trends. See SMOOTHED CURVE.

**smooth movement** see RAMP MOVEMENT.

**smooth muscle** any muscle that is not striated and is under the control of the AUTONOMIC NERVOUS SYSTEM (i.e., it is not under voluntary control). Smooth muscles are able to remain in a contracted state for long periods of time or maintain a pattern of rhythmic contractions indefinitely without fatigue. Smooth muscle is found, for example, in the digestive organs, blood vessels, and the muscles of the eyes. Also called **involuntary muscle**. Compare CARDIAC MUSCLE; SKELETAL MUSCLE.

**smooth-pursuit eye movement** a slow, continuous eye movement that is responsive to feedback provided by brain regions involved in processing visual information, thus enabling continuous fixation on a moving object. Compare SACCADÉ.

**SMR** abbreviation for SENSORIMOTOR RHYTHM.

**S/N** abbreviation for SIGNAL-TO-NOISE RATIO.

**snake phobia** a persistent and irrational fear of snakes, classified as a SPECIFIC PHOBIA, animal type. Also called **ophidiophobia**. See also ANIMAL PHOBIA.

**sneak mating** a practice in which male animals that do not form or defend territories or nest sites or do not vocalize or give displays to attract mates intercept females and mate with them before the females reach the larger, more dominant territorial or displaying males. Sneak mating has a low success rate, but it is frequently the only reproductive strategy available to smaller, subordinate males.

**Snellen chart** a device for testing VISUAL ACUITY, consisting of printed letters ranging in size from very small to very large. The observer reads the letters at a given distance. Also called **Snellen test**. [Herman **Snellen** (1834–1908), Dutch ophthalmologist]

**SNF** abbreviation for SKILLED NURSING FACILITY.

**snow n.** slang for COCAINE or sometimes HEROIN or AMPHETAMINE.

**snowball sampling** a technique to identify and recruit candidates for a study in which existing participants recommend additional potential participants, who themselves are observed and asked to nominate others, and so on until a sufficient number of participants is obtained. Researchers generally use snowball sampling if the population of interest is hard to locate, rare (e.g., people who have an infrequent condition or disease), or otherwise limited.

**snow blindness** a visual distortion caused by exposure to extreme intensities of white light. It is marked by PHOTO-

**PHOBIA**, an illusion that all objects are red (see **CHROMATOPHOSIA**), or temporary loss of vision.

**SNP** abbreviation for **SINGLE-NUCLEOTIDE POLYMORPHISM**.

**SNRI** serotonin and norepinephrine reuptake inhibitor: any of a class of antidepressants that exert their therapeutic effects by interfering with the reabsorption of both serotonin and norepinephrine by the neurons that released them. They include **VENLAFAXINE** and **duloxetine**.

**SOA** abbreviation for **STIMULUS ONSET ASYNCHRONY**.

**SOAP test** a test of the ability of individuals with **APHASIA** to understand sentences of varying syntactic complexity: Subject-relative, Object-relative, Active, and Passive. It enables investigators to distinguish between the different types of aphasia.

**Soar** *n.* a **COGNITIVE ARCHITECTURE**, or a complete computational representation, intended to reflect a comprehensive view of human or machine processing, including input/output devices, the use of appropriate knowledge and search-based processing, and components that learn. Soar is based on the **PRODUCTION SYSTEM** model of human problem solving. See also **ADAPTIVE PRODUCTION SYSTEM**. [acronym for State, Operator, and Result; created in 1990 by U.S. cognitive and computer scientist Allen Newell (1927–1992)]

**S–O association** see **S–S LEARNING MODEL**.

**sobriety** *n.* a state in which one abstains from drinking or taking drugs for a period of time; that is, **ABSTINENCE**.

**SOCE** abbreviation for sexual orientation change efforts. See **CONVERSION THERAPY**.

**sociability** *n.* the tendency and accompanying skills to seek out companionship, engage in interpersonal relations, and participate in social activities. —**sociable** *adj.*

**sociability rating** an evaluation of an individual's degree of sociability based on the amount of time devoted to social activities.

**social** *adj.* **1.** relating to human society. **2.** relating to the interactions between individuals, particularly as members of a group or a community. In this sense, the term is not restricted to people but rather applies to all animals.

**social acceptance** **1.** the formal or informal admission of an individual into a group. **2.** the absence of **SOCIAL DISAPPROVAL**.

**social action** **1.** individual or group activities directed to achieving benefits for the community or a segment of the population. See also **ACTIVISM**; **COMMUNITY ACTION GROUP**; **SOCIAL MOVEMENT**. **2.** any human activity seen in terms of its social context. Thus defined, such activity is the characteristic subject matter of the discipline of sociology.

**social action program** a planned and organized effort to change some aspect of society, such as enacting animal rights legislation or initiating improvements in psychiatric hospitals. See also **SOCIAL MOVEMENT**.

**social adaptation** see **ADAPTATION**.

**social-adjustive function of an attitude** the role an attitude can play in facilitating social interaction and enhancing cohesion among members of a social group. For example, a teenager may adopt positive attitudes toward certain styles of dress and types of music as a means of gaining acceptance by a peer group. See also **EGO-DEFENSIVE FUNCTION OF AN ATTITUDE**; **FUNCTIONAL APPROACH TO**

**ATTITUDES**; **KNOWLEDGE FUNCTION OF AN ATTITUDE**; **UTILITARIAN FUNCTION OF AN ATTITUDE**; **VALUE-EXPRESSIVE FUNCTION OF AN ATTITUDE**.

**social adjustment** accommodation to the demands, restrictions, and mores of society, including the ability to live and work with others harmoniously and to engage in satisfying interactions and relationships.

**social affective neuroscience** see **AFFECTIVE NEUROSCIENCE**.

**social age (SA)** a numerical scale unit expressing how mature a person is in terms of his or her interpersonal skills and ability to fulfill the norms and expectations associated with particular **SOCIAL ROLES**, as compared to others of the same **CHRONOLOGICAL AGE**. SA is similar to **MENTAL AGE** and is derived from ratings gathered from the individual or, in the case of young children, from parents or caregivers using instruments such as the **VINELAND ADAPTIVE BEHAVIOR SCALES**.

**social agency** a private or governmental organization that supervises or provides personal services, especially in the fields of health, welfare, and rehabilitation. The general objective of a social agency is to improve the quality of life of its clients.

**social anchoring** basing one's attitudes, values, actions, and so forth on the positions taken by others, often to an extreme degree. Anchoring implies an inability to make an independent judgment, whereas social comparison involves assessing one's position relative to that held by others. See **SOCIAL COMPARISON THEORY**.

**social anxiety** fear of social situations in which embarrassment may occur (e.g., making conversation, meeting strangers, dating) or there is a risk of being negatively evaluated by others (e.g., seen as stupid, weak, or anxious). Social anxiety involves apprehensiveness about one's social status, role, and behavior. When the anxiety causes an individual significant distress or impairment in functioning, a diagnosis of **SOCIAL PHOBIA** may be warranted.

**social anxiety disorder** see **SOCIAL PHOBIA**.

**social approval** positive appraisal and acceptance of someone or something (a behavior, trait, attribute, or the like) by a social group. Its manifestations may include compliments, praise, statements of approbation, and so on. Compare **SOCIAL DISAPPROVAL**.

**social ascendancy** see **UPWARD MOBILITY**.

**social assimilation** **1.** the process by which two or more cultures or cultural groups are gradually merged, although one is likely to remain dominant. **2.** the process by which individuals are absorbed into the culture or mores of the dominant group.

**social atom** see **SOCIUS**.

**social attachment** see **ATTACHMENT**.

**social attitude** **1.** a person's general outlook on social issues and approach to his or her social responsibilities. **2.** a person's general disposition or manner toward other people (e.g., friendly or hostile). **3.** an opinion or evaluation shared by a social group.

**social behavior** **1.** any action performed by interdependent conspecifics (members of the same species). **2.** in humans, an action that is influenced, directly or indirectly, by the actual, imagined, expected, or implied presence of others. **3.** any one of a set of behaviors exhibited by gre-

gious, communal social species, including COOPERATION, AFFILIATION, ALTRUISM, and so on.

**social bond** an affective relation between individuals, such as the connection between two friends or the emotional link between family members.

**social breakdown syndrome** a symptom pattern observed primarily in institutionalized individuals with chronic mental illness but also in populations such as long-term prisoners and older people in nursing homes. Symptoms include withdrawal, apathy, submissiveness, and progressive social and functional incompetence. Previously considered symptomatic of mental illness, this decline is now attributed to internalized negative stereotypes, such as identification with the SICK ROLE and the impact of labeling (see LABELING THEORY); the absence of social support; and institutional factors such as a lack of stimulation, overcrowding, unchanging routine, and disinterest on the part of staff. Also called **chronicity**; **institutionalism**; **institutional neurosis**; **social disability syndrome**.

**social casework** see CASEWORK.

**social category** a group of people defined by SOCIAL CLASS or other common attributes of a social nature, such as homelessness, gender, race, unemployment, or retirement.

**social change** any process in which the general structure or character of a society is altered. Social change can be as varied as that occurring during the Industrial Revolution of the 19th century or that occurring with the introduction of freer sexual expression in the 20th century. Social change may be the result of impersonal economic and technological forces or determined action by individuals or groups. See also CULTURE CHANGE; SOCIAL EVOLUTION; SOCIAL MOVEMENT.

**social class** a major group or division of society having a common level of power and prestige on the basis of a common SOCIOECONOMIC STATUS. Often, the members of a particular social class share values and have similar cultural interests and social patterns. A popularly used classification divides individuals into an upper class, a middle class (sometimes subdivided into upper middle and lower middle classes), a working class, the working poor, and an underclass.

**social climate** the general character of the social milieu in which individuals and groups live; that is, the totality of the prevailing customs, mores, and attitudes that influence their behavior and adjustment.

**social climbing** an attempt to improve one's social standing by associating with people of a higher social class. It often involves efforts to impress such people, cater to their needs, or both.

**social clock** in a given culture, the set of norms governing the ages at which particular life events—such as beginning school, leaving home, getting married, having children, and retiring—are expected to occur.

**social code** the social rules and standards (e.g., laws) adhered to by a specific community or by society in general.

**social cognition** **1.** cognition in which people perceive, think about, interpret, categorize, and judge their own social behaviors and those of others. The study of social cognition involves aspects of both cognitive psychology and social psychology. Major areas of interest include ATTRIBUTION THEORY, PERSON PERCEPTION, SOCIAL INFLUENCE, and

the cognitive processes involved in moral judgments. **2.** in animal behavior, the knowledge that an individual has about other members of its social group and the ability to reason about the actions of others based on this knowledge. In vervet monkeys, for example, after an individual in matriline (matrilateral line of descent) A attacks an individual in matriline B, other members of B are more likely to attack members in A.

**social-cognitive theory** an extension of SOCIAL LEARNING THEORY to include the effects of cognitive processes, such as conceptions, judgment, and motivation, on an individual's behavior and on the environment that influences him or her. Rather than passively absorbing knowledge from environmental inputs, individuals actively influence their learning by interpreting the outcomes of their actions, which then affects their environments and their personal factors, which in turn inform and alter subsequent behavior. Emphasis on this interaction of behavioral, environmental, and personal factors is thus a major hallmark of the theory. Although Julian ROTTER, Austrian-born U.S. personality psychologist Walter Mischel (1930– ), and many others have proposed different social-cognitive perspectives, the one introduced by Albert BANDURA in 1986 remains most prominent and has been applied to a wide range of topics (e.g., personality development and functioning, the understanding and treatment of psychological disorders, organizational training programs, education, health promotion strategies, advertising and marketing). A central tenet of Bandura's social-cognitive theory is that people seek to develop a sense of agency and to exert control over important events in their lives, a sense that is affected by factors such as their SELF-EFFICACY, outcome expectations, goals, and self-evaluation. Despite the distinction between social-cognitive theory and social learning theory, many individuals use the terms synonymously. Also called **cognitive-social learning theory**.

**social cohesion** see GROUP COHESION.

**social communication disorder** see SOCIAL (PRAGMATIC) COMMUNICATION DISORDER.

**social comparison theory** the proposition that people evaluate their abilities and attitudes in relation to those of others in a process that plays a significant role in self-image and subjective well-being. Three types of social comparison are proposed in the theory: (a) **upward social comparison**, or comparing oneself with someone judged to be better than oneself (e.g., by having more wealth or material goods, higher social standing, greater physical attractiveness); (b) **downward social comparison**, or comparing oneself with someone judged to be not as good as oneself; and (c) **lateral social comparison**, or comparing oneself with another who is considered to be more or less equal. Traditionally, social comparison theory has held that upward comparisons promote a sense of inferiority and thus are associated with negative changes in self-concept (the CONTRAST EFFECT), but recent research suggests that, depending on the circumstances, upward comparisons instead may promote inspiration and be associated with positive changes in self-concept (the ASSIMILATION EFFECT). For example, people tend to rate their abilities higher when they maintain a close relationship with a target of upward comparison but lower when the target is distant or disliked. The way people compare themselves with others (their **comparison group** or REFERENCE GROUP) was originally described by Leon FESTINGER in 1954.

**social competence** effectiveness or skill in interper-

sonal relations and social situations, increasingly considered an important component of mental health. Social competence involves the ability to evaluate social situations and determine what is expected or required; to recognize the feelings and intentions of others; and to select social behaviors that are most appropriate for that given context. It is important to note, however, that what is required and appropriate for effective social functioning is likely to vary across settings.

**social competence program** a type of intervention that seeks to foster positive relationships and enhance IDENTITY and SELF-CONCEPT. Often implemented in pre-school and elementary school classrooms, social competence programs generally include video sequences and vignettes, interactive exercises, self-assessments, and other activities intended to improve participants' awareness of their feelings as well as their abilities in communication, self-control, conflict resolution, and problem solving.

**social conflict** interpersonal disagreement or discord. See CONFLICT.

**social constructionism** the epistemological position, associated mainly with POSTMODERNISM, that any supposed knowledge of reality (e.g., that claimed by science or that provided by concepts such as *good* and *bad*) is in fact a construct of language, culture, and society that has no objective or universal validity. That is, knowledge is contingent on humanity's collective social self rather than on any inherent qualities that items or ideas possess. Social constructionists thus seek to uncover the ways in which individuals and groups participate in the construction of their perceived reality by looking at how various phenomena are created, understood, and accepted by the social institutions and contexts in which they exist. See also SITUATED KNOWLEDGE.

**social constructivism** the school of thought that recognizes knowledge as embedded in social context and sees human thoughts, feelings, language, and behavior as the result of interchanges with the external world. Social constructivism argues that there is no separation between subjectivity and objectivity and that the dichotomy between the person and the situation is false: The person is intimately and intricately bound within social, cultural, and historical forces and cannot be understood fully without consideration of these social forces. According to social constructivism, not only knowledge but also reality itself is created in an interactive process and thus people are solely what their society shapes them to be.

**social contagion** the spread of behaviors, attitudes, and affect through crowds and other types of social aggregates from one member to another. Early analyses of social contagion suggested that it resulted from the heightened suggestibility of members and likened the process to the spread of contagious diseases. Subsequent studies suggest that social contagion is sustained by relatively mundane interpersonal processes, such as IMITATION, CONFORMITY, UNIVERSALITY, and MIMICRY. Also called **group contagion**. See also BEHAVIORAL CONTAGION; EMOTIONAL CONTAGION; MASS CONTAGION.

**social context** the specific circumstance or general environment that serves as a social framework for individual or interpersonal behavior. This context frequently influences, at least to some degree, the actions and feelings that occur within it.

**social contract** in political theory, the idea that society

is based on an unwritten agreement whereby individuals willingly surrender some of their natural freedoms to obtain the greater security and other benefits that follow from government and the rule of law. The classic formulations of social contract theory are those of Thomas HOBBS, John LOCKE, and Swiss-born French philosopher Jean-Jacques Rousseau (1712–1778), each of whom developed it in a very different way: For Hobbes, the social contract justified autocracy as the only bulwark against anarchy; for Locke, it permitted the removal of unjust or arbitrary rulers; for Rousseau, it required the voluntary subjection of the individual to the “general will” of society.

**social contract orientation** see POSTCONVENTIONAL LEVEL.

**social control** the power of the institutions, organizations, and laws of society to influence or regulate the behavior of individuals and groups. For example, a person may internalize the values and beliefs of his or her religion and act accordingly; similarly, a person may avoid stealing for fear of being caught by the police and punished (e.g., with fines or incarceration). The human tendency to conform increases the power of social institutions to shape behavior.

**social convention** any of various established rules, methods, procedures, and practices that have been accepted as guides for social conduct over a relatively long period. Often unwritten, arbitrary, and self-perpetuating, social conventions usually pertain to relatively mundane aspects of society, such as etiquette, social ceremonies, and decorum. See also SOCIAL NORM.

**social coping** any interpersonally based stress-management strategy. A person using this type of coping style seeks support from family members, friends, or formal service providers to help him or her through a difficult event or situation.

**social creativity** the tendency, described in SOCIAL IDENTITY THEORY, to draw comparisons between the INGROUP and other groups in domains in which the ingroup is more successful, and to avoid making any comparisons in areas in which other groups surpass the ingroup.

**social Darwinism** the now discredited theory that social relations develop according to the principles of NATURAL SELECTION advanced by Charles DARWIN. As articulated by Herbert SPENCER and others, the theory proposed that societies evolve through SURVIVAL OF THE FITTEST, the fittest being defined as those with wealth, power, and “natural” superiority in the struggle for existence. With its legitimizing of social, economic, and racial inequality, social Darwinism became a major ideological vehicle for justifying laissez-faire economics, imperialism, and EUGENICS in the late 19th and early 20th centuries.

**social death 1.** a pattern of group behavior that ignores the presence or existence of a person within the group. Social death occurs in situations in which verbal and nonverbal communication would be expected to include all participants but in which one or more individuals are excluded. See SHUNNING; OSTRACISM. **2.** the social effect of individuals' reactions to a living person as if he or she is dead, as sometimes seen among people in the presence of a comatose patient or someone with severe dementia.

**social decision scheme** a strategy or rule used in a group to select a single alternative from among various alternatives proposed and discussed during the group's deliberations. These schemes are sometimes explicitly ac-

knowledge by the group, as when a formal tally of those favoring the alternative is taken and the proposal is accepted only when a certain proportion approve of it, but are sometimes implicit and informal, as when a group accepts the alternative that its most powerful members seem to favor.

**social deficit** inability, unwillingness, or poor judgment in the performance of social activities commensurate with chronological age, intelligence, or physical condition. Such a deficit is presumed to reduce a person's ability to obtain social support and is therefore a target of treatment, especially in behavior therapy and with severely disturbed individuals.

**social degeneracy** a condition in which social structures and behavioral norms no longer function constructively.

**social density** **1.** density that can be changed by altering the number of individuals per given unit of space. Social density is a major determinant of CROWDING, and there is evidence that it has a more powerful effect on human response than SPATIAL DENSITY. **2.** the number of interpersonal interactions that are likely to occur in a given space. See also PROXEMICS.

**social deprivation** **1.** limited access to society's resources due to poverty, discrimination, or other disadvantage. See CULTURAL DEPRIVATION. **2.** lack of adequate opportunity for social experience.

**social desirability** **1.** the extent to which someone or something (a trait, attribute, or the like) is admired or considered valuable within a social group. **2.** the bias or tendency of individuals to present themselves in a manner that will be viewed favorably by others. In an experiment, for example, it manifests as the **social desirability response set**, which is the tendency of participants to give answers that are in accordance with social norms or the perceived desires of the researcher rather than genuinely representative of their views. This is a CONFOUND to be controlled for in certain research, as it often reduces the validity of interviews, questionnaires, and other self-reports. See IMPRESSION MANAGEMENT; MARLOWE-CROWNE SOCIAL DESIRABILITY SCALE.

**social determinism** the theory or doctrine that individual behaviors are determined by societal events and other interpersonal experiences. See also CULTURAL DETERMINISM; DETERMINISM.

**social development** the gradual acquisition of certain skills (e.g., language, interpersonal skills), attitudes, relationships, and behavior that enable the individual to interact with others and to function as a member of society.

**social differentiation** the process by which a status hierarchy develops within any society or social group. For example, in a care facility for older people, social differentiation might be based on age, level of mobility, or physical impairment.

**social dilemma** a situation that creates a conflict between the individual's interests and the collective's interests, such that the individual obtains better outcomes following strategies that over time will lead to suboptimal outcomes for the collective. Such situations have reward structures that favor individuals who act selfishly rather than in ways that benefit the larger social collective; however, if a substantial number of individuals seek maximum personal gain, their results will be lower than if they had

sought collective outcomes. Social dilemmas are simulated in MIXED-MOTIVE GAMES, such as the PRISONER'S DILEMMA. See also SOCIAL TRAP.

**social disability syndrome** see SOCIAL BREAKDOWN SYNDROME.

**social disapproval** condemnation and rejection of someone or something (a behavior, trait, attribute, or the like) by a social group. Its manifestations may include insults, criticism, disparagement, SHUNNING, and so on. Compare SOCIAL APPROVAL.

**social discrimination** the differential treatment of individuals based on their cultural background, social class, educational attainment, or other sociocultural distinction.

**social distance** the degree to which, psychologically speaking, a person or group wants to remain separate from members of different social groups. This reflects the extent to which individuals or groups accept others of a different ethnicity, race, nationality, or other social background.

**social distance scale** a measure of intergroup attitudes that asks respondents to indicate their willingness to accept members of other ethnic, national, or social groups in situations that range from relatively distant ("would allow to live in my country") to relatively close ("would admit to close kinship by marriage"). When unqualified, the term often refers to the BOGARDUS SOCIAL DISTANCE SCALE, one of the most popular of such measures.

**social dominance orientation (SDO)** a dispositional tendency to accept and even prefer circumstances that sustain social inequalities, combined with a general preference for hierarchical social structures. [introduced in 1994 by U.S. social psychologists Felicia Pratto, James Sidanius (1945– ), and colleagues]

**social dominance theory (SDT)** a general model of the development and maintenance of social dominance and oppression that assumes societies minimize group conflict by creating consensus on ideologies that promote the superiority of one group over others. Ideologies that promote or maintain group inequality are the tools that legitimize discrimination. To work smoothly, these ideologies must be widely accepted within a society, appearing as self-apparent truths called **hierarchy-legitimizing myths**. [first formulated by U.S. social psychologists Felicia Pratto, James Sidanius (1945– ), and colleagues]

**social drinker** an imprecise categorization generally agreed to signify an individual who tends to drink alcohol in moderation. It is usually a misnomer, as such people do not typically drink only in social situations.

**social dynamics** **1.** an approach to sociology that focuses on the empirical study of specific societies and social systems in the process of historical change. Compare SOCIAL STATICS. [conceptualized by Auguste COMTE] **2.** the forces or processes of change at work in any social group. See GROUP DYNAMICS.

**social ecology** the study of human or nonhuman organisms in relation to their social environment. See also ECOLOGICAL STUDY; HUMAN ECOLOGY; URBAN ECOLOGY.

**social emotion** any emotion that depends on one's appraisal or consideration of another person's thoughts, feelings, or actions. For example, pride arises when one feels favorably evaluated by others and perceives concurrent gains in one's status and rank relative to those others, whereas shame arises from one's feeling poorly evaluated

by others and perceiving losses in status and rank. Other commonly studied social emotions include admiration, embarrassment, envy, guilt, and jealousy. Recent neuroimaging studies reveal the involvement of the MEDIAL PREFRONTAL CORTEX in the processing of social emotions, with adolescents activating more lateral (anterior) regions and adults more posterior (temporal) regions of the medial prefrontal cortex.

**social-emotional leader** an individual who guides others in their pursuits by performing supportive, interpersonally accommodative behaviors. Also called **relationship leader**.

**Social-Emotional scale** see BAYLEY SCALES OF INFANT AND TODDLER DEVELOPMENT.

**social engineer** **1.** a person engaged in planning social policy and in organizing community action programs to remedy problems such as crime, drug abuse, and urban decay. **2.** a pejorative term for a person who attempts to enforce social change by imposing certain abstract or theoretical ideas on society.

**social entrepreneurship** see ENTREPRENEURSHIP.

**social equality** equivalent treatment of and opportunity for members of different groups within society regardless of individual distinctions of race, ethnicity, gender, age, social class, sexual orientation, or other characteristics or circumstances. Given its breadth, social equality remains a global ideal yet to be obtained. Hierarchies continue to exist worldwide in which different groups of people are distinguished—whether intentionally or unintentionally—and consequently experience differential treatment that produces divergent daily realities. Consider marriage as an example. Many societies do not permit same-sex marriage, which means that gay men and lesbians in those societies do not have the same legal, economic, and civil rights as their heterosexual counterparts. See also DEMOCRACY.

**social evolution** the process of gradual change in a society over time, especially as contrasted with the sudden and dramatic changes caused by political upheavals, natural disasters, and the like. See also CULTURAL DRIFT; SOCIAL CHANGE.

**social exchange theory** a theory envisioning social interactions as an exchange in which the participants seek to maximize their benefits (the rewards they receive minus the costs they incur) within the limits of what is regarded as fair or just. Intrinsic to this hypothesis is the RECIPROCITY NORM: People are expected to reciprocate for the benefits they have received. Social exchange theory is similar to EQUITY THEORY, which also maintains that people seek fairness in social relationships and that fairness exists when each party in the relationship has the same ratio of outcomes (benefits) to inputs (resources brought to the relationship). [proposed by Austrian sociologists George C. Homans (1910–1989) and Peter Blau (1918–2002) and extensively studied by John W. THIBAUT and Harold H. KELLEY]

**social facilitation** the improvement in an individual's performance of a task that often occurs when others are present. This effect tends to occur with tasks that are uncomplicated or have been previously mastered through practice. There is some disagreement as to whether the improvement is due to a heightened state of arousal, a greater self-awareness, or a reduced attention to unimportant and distracting peripheral stimuli. By contrast, SOCIAL INTERFERENCE is likely to be seen when the task is complicated,

particularly if it is not well learned. See also AUDIENCE EFFECT.

**social factors** factors (e.g., attitudes) that affect thought or behavior in social contexts or that affect SELF-CONCEPT vis-à-vis other individuals or groups.

**social feedback** a direct report of the effect of one's behavior or speech on other people. An example of social feedback is laughter at one's jokes.

**social fission** the splitting of a social group into smaller groups, usually because of unresolvable internal conflict between factions.

**social force** any global, systemic, and relatively powerful process that influences individuals in interpersonal settings, such as GROUP PRESSURE and NORMATIVE INFLUENCE. See also SOCIAL INFLUENCE; SOCIAL PRESSURE.

**social gerontology** the study of the social process of aging and the interaction of older adults with their environments, including issues such as the contributions of older adults to the community, services provided in the community for older adults, and the utilization of group residences and communities for older adults.

**social group** see GROUP.

**social growth** development of an individual's knowledge and ability in dealing with other individuals and groups. Social growth is not limited to conformity; much social growth can lie outside the range of cultural expectations.

**social habit** a common form of social behavior that is deeply ingrained and often appears to have an automatic quality (e.g., saying "thank you").

**social heritage** culturally learned customs, codes, and rules of behavior that are constant across generations. Examples include giving gifts on particular occasions, greeting others when one enters a room, and shaking hands. See CULTURAL HERITAGE; SOCIAL TRANSMISSION.

**social identity** **1.** the personal qualities that one claims and displays to others so consistently that they are considered to be part of one's essential, stable self. This public persona may be an accurate indicator of the private, personal self, but it may also be a deliberately contrived image (see SOCIAL IMAGE). **2.** in social psychology, the part of SELF-CONCEPT that is derived from memberships in social groups or categories, ranging from family to nationality or race. Social identity is distinguished from the PUBLIC SELF and the PRIVATE SELF. Also called **collective self**.

**social identity theory** a conceptual perspective on group processes and intergroup relations that assumes that groups influence their members' self-concepts and self-esteem, particularly when individuals categorize themselves as group members and identify strongly with the group. According to this theory, people tend to favor their INGROUP over an OUTGROUP because the former is part of their self-identity. With its emphasis on the importance of group membership for the self, social identity theory contrasts with individualistic analyses of behavior that discount the importance of group identifications. [proposed in 1979 by Polish-born British social psychologist Henri Tajfel (1919–1982) and British social psychologist John C. Turner (1947–2011)]

**social image** an individual's public persona—that is, the identity or face presented to others in public contexts. See SOCIAL IDENTITY; FACEWORK.



**social immobility** a feature of a society with fixed social norms or a rigid class system such that movement from one social class to another is virtually impossible and occurs only in very rare and prescribed instances. The traditional Hindu CASTE system is an example of such a FIXED CLASS SOCIETY. Compare SOCIAL MOBILITY.

**social impact assessment** the evaluation of the social effect of a proposed construction project while it is in the planning stage. It is based on studies of potential effects on land values, traffic flow, displacement of jobs and homes, ecological balance, air pollution, and related factors, as well as predicted benefits to the environment and to people who would make use of the new facility.

**social impact theory** a theory of social influence postulating that the amount of influence exerted by a source on a target depends on (a) the strength of the source compared to that of the target (e.g., the social status of the source versus that of the target); (b) the immediacy of the source to the target (e.g., the physical or psychological distance between them); and (c) the number of sources and targets (e.g., several sources influencing a single target). The impact of the source on the target increases as the source's strength, immediacy, and number increase relative to the target. See also DYNAMIC SOCIAL IMPACT THEORY. [originally proposed by U.S. social psychologist Bibb Latané (1937– )]

**social imperception disorder** a condition characterized by a lack of awareness of common social interaction processes and interpersonal behaviors and by difficulty in recognizing and understanding other people's feelings and emotions.

**social incentive** an inducement to behave in particular approved ways, involving the offer of such interpersonal rewards as acceptance, approval, inclusion, or status.

**social indicator** any feature of a society or a subgroup within it that can be measured over time and is presumed to reveal some underlying aspect of social reality and quality of life. For example, the retail price index is used as a measure of inflation, which in turn is taken as a key indicator of economic performance. Other commonly used indicators are derived from unemployment figures, per capita income, poverty levels, labor conditions, housing costs, mental health, general health and mortality data, nutrition information, pollution levels, crime rates, education levels, opportunities for leisure and recreation, and the status of older adults. Researchers and policymakers frequently use social indicators to assess the extent to which a society is "progressing" as well as to make predictions about its future.

**social influence** **1.** any change in an individual's thoughts, feelings, or behaviors caused by other people, who may be actually present or whose presence is imagined, expected, or only implied. **2.** interpersonal processes that can cause individuals to change their thoughts, feelings, or behaviors. See INFORMATIONAL INFLUENCE; INTERPERSONAL INFLUENCE; NORMATIVE INFLUENCE. See also SOCIAL FORCE; SOCIAL PRESSURE.

**social information processing** a type of human INFORMATION PROCESSING in which social information is encoded, compared with other pertinent information, and retrieved to influence one's interactions with others. [proposed by U.S. psychologist Kenneth A. Dodge (1954– )]

**social inhibition** the restraint placed on an individual's

expression of her or his feelings, attitudes, motives, and so forth by the belief that others could learn of this behavior and disapprove of it. See also AUDIENCE EFFECT.

**social-inquiry model** a teaching model that emphasizes the role of social interaction. The social-inquiry model utilizes methods of resolving social issues through a process of logical reasoning coupled with academic inquiry.

**social insects** insects that live together in groups, exhibiting reproductive division of labor, cooperation in care of the young, and multiple generations working together. In colonies of some bees, ants, wasps, and termites, reproduction is limited to one or a few queens, and large numbers of workers (sterile females) build nests, forage for food, tend the larvae, and defend the nest. Social insects are haplodiploid (see HAPLODIPLOIDY), with males developing from unfertilized eggs. This means that workers share 75% of their genes (whereas queen and worker share only 50%), so they have greater INCLUSIVE FITNESS by tending their siblings than they would by breeding on their own. See also EUSOCIALITY.

**social instinct** **1.** the desire for social contact and a feeling of belonging, as manifested by the tendency to congregate, affiliate, and engage in group behaviors. **2.** in the INDIVIDUAL PSYCHOLOGY of Alfred ADLER, an innate drive for cooperation that leads individuals to incorporate social interest and the common good into their efforts to achieve self-realization. See also GREGARIOUSNESS; HERD INSTINCT.

**social integration** **1.** the process by which separate groups are combined into a unified society, especially when this is pursued as a deliberate policy. It implies a coming together based on individual acceptance of the members of other groups. **2.** the process by which an individual is assimilated into a group.

**social intelligence** the ability to understand people and effectively relate to them. It is often contrasted with ABSTRACT INTELLIGENCE and CONCRETE INTELLIGENCE.

**social intelligence quotient** see SOCIAL QUOTIENT.

**social interaction** any process that involves reciprocal stimulation or response between two or more individuals. These can range from the first encounters between parent and offspring to complex interactions with multiple individuals in adult life. Social interaction includes the development of cooperation and competition, the influence of status and social roles, and the dynamics of group behavior, leadership, and conformity. Persistent social interaction between specific individuals leads to the formation of SOCIAL RELATIONSHIPS. It is only through close observation of social interaction that SOCIAL ORGANIZATION and SOCIAL STRUCTURE can be inferred.

**social interest** in the INDIVIDUAL PSYCHOLOGY of Alfred ADLER, communal feeling based on a recognition that people live in a social context; are an integral part of their family, community, humanity, and the cosmos itself; and have a natural aptitude for acquiring the skills and understanding necessary to solve social problems and to take socially affirmative action. Adler believed, however, that social interest is only partially inherent in adaptive development and needs to be actively cultivated in any individual.

**social interference** **1.** any actions that conflict with, obstruct, hamper, or undermine the activities and experiences of others. **2.** the reduction of productivity that occurs when individuals work in the presence of others. Compare SOCIAL FACILITATION. See also SOCIAL LOAFING.

**social intervention** social action programs designed to increase some type of social good or service.

**social introversion** a behavioral trait manifested by shy, inhibited, and withdrawn attitudes.

**social isolation** voluntary or involuntary absence of contact with others. In experimental research on nonhuman animals, this typically indicates separation from other members of the animal's species. Social isolation often produces abnormal behavioral and physiological changes in both humans and nonhuman animals. See also ISOLATE; LONELINESS.

**social isolation syndrome** in research, a syndrome produced by raising nonhuman animals in total isolation from other members of their species. It consists of severely abnormal behavior, such as rocking, huddling, self-clasping, and retreating into a corner, as well as impaired sexual behavior.

**sociality** *n.* the tendency to live as part of a group with clear organization of social interactions and the ability to cooperate with and adapt to the demands of the group. Benefits of sociality for nonhuman animals include better predator detection and avoidance, increased foraging success through the sharing of information, and protection of young. Costs include increased risk of parasites, increased competition between group members, and increased visibility to predators.

**sociality corollary** a concept proposing that an individual's ability to communicate or otherwise interact with another individual is based on an understanding of the other's PERSONAL CONSTRUCT. [proposed by George A. KELLY]

**socialization** *n.* **1.** the process by which individuals acquire social skills, beliefs, values, and behaviors necessary to function effectively in society or in a particular group. **2.** the process by which employees adjust to an ORGANIZATIONAL CULTURE and learn the knowledge, skills, attitudes, and values expected of them by superiors, peers, subordinates, customers, and others. —**socialize** *vb.*

**socialized delinquency** violations of the law by individuals younger than 18 years that result from their adherence to the attitudes and values of a SUBCULTURE—such as a gang—that glorifies criminal or antisocial conduct. Also called **subcultural delinquency**.

**socialized drive** any PRIMARY DRIVE that has been modified through SOCIAL LEARNING so that drive satisfaction is achieved through socially acceptable behaviors. An example is sexual gratification achieved through mutually consensual adult sex.

**social judgment theory** a theory of ATTITUDE CHANGE postulating that the magnitude of PERSUASION produced by a particular message depends on how much the position advocated in the message differs from a person's attitude. Persuasion is likely to be greatest when a message advocates a position that a person finds neither clearly acceptable nor clearly objectionable. See also LATITUDE OF ACCEPTANCE; LATITUDE OF NONCOMMITMENT; LATITUDE OF REJECTION. [attributed to U.S. psychologists Carolyn Wood Sherif (1922–1982), Muzafer SHERIF, and Carl I. HOVLAND]

**social justice norm** the socially determined standard that people should be helped by others only if they deserve to be helped. Compare RECIPROCITY NORM; SOCIAL RESPONSIBILITY NORM.

**social learning** learning that is facilitated through social interactions with other individuals. Several forms of social learning have been identified, including LOCAL ENHANCEMENT, EMULATION, IMITATION, and MIMICRY.

**social learning theory** the general view that learning is largely or wholly due to modeling, imitation, and other social interactions. More specifically, behavior is assumed to be developed and regulated by external stimulus events, such as the influence of other individuals, and by external reinforcement, such as praise, blame, and reward. For example, if a student receives extra credit for arriving early to class and another student in the classroom observes this, the latter student may model the behavior by arriving a few minutes early each day as well. Indeed, modeling is one of the most pervasive and powerful means of transmitting patterns of behavior: Once observers extract the rules and structure underlying the modeled activities, they can generate new patterns of behavior that conform to those properties but go beyond what they have seen or heard, expanding their knowledge and skills rapidly without having to go through the process of learning by response consequences. Although many researchers have proposed their own specific social learning theories, the term is most commonly associated with the work of Albert BANDURA and Julian ROTTER. Bandura subsequently incorporated cognition into his ideas on social learning, a modification that became known as SOCIAL-COGNITIVE THEORY. Despite the distinction, however, many people use the two terms interchangeably.

**social limitation** a restriction attributed to social policy or barriers (structural or attitudinal) that limit individuals, particularly those with disabilities, from performing specific tasks or that deny them access to the services and opportunities associated with full participation in society.

**social loafing** the reduction of individual effort that occurs when people work in groups compared to when they work alone. See also RINGELMANN EFFECT; SOCIAL INTERFERENCE. [first described in 1979 by U.S. social psychologist Bibb Latané (1937– ), U.S.-born Australian social psychologist Kipling D. Williams (1953– )], and U.S. social psychologist Stephen G. Harkins]

**socially sensitive research** research on topics likely to evoke controversy in the community or strong emotional responses from participants. Such topics would include those that have ethical implications affecting subgroups or cultures within society (e.g., ethnic minorities) or that involve potential costs and consequent problems for the participants, investigators, or sponsors. For example, a study that examines the relative merits of day care for infants versus full-time care by the mother can have broad social implications and thus be considered socially sensitive.

**social maladjustment** **1.** an inability to develop relationships that satisfy affiliative needs. **2.** a lack of social finesse or tact. **3.** a breakdown in the process of maintaining constructive social relationships.

**social marketing** the use of marketing techniques (e.g., public service announcements) to prompt socially desirable behaviors, such as eating health foods, driving safely, undergoing regular medical examinations, and the like.

**social matching effect** the tendency for individuals in brainstorming groups to match the lowest level of productivity displayed by others in the group, resulting in most cases in loss of productivity.

**social maturity** a level of behavior in accordance with the social standards that are the norm for individuals of a particular age.

**social maturity scale** an instrument that assesses the degree to which an individual performs age-appropriate behaviors. These behaviors are primarily concerned with functioning in the family and community and are sometimes considered in conjunction with measures of intellectual impairment to establish the presence of intellectual disability.

**social meaning model** a conceptualization of nonverbal behaviors that describes the process by which senders, receivers, and third-party observers interpret the meaning of nonverbal messages. The model suggests that some nonverbal messages, such as a smile, have strong consensual meaning across contexts but that other nonverbal cues, such as eye gaze and physical closeness, may affect their perceived meanings by providing important information about participants' attitudes, characteristics, and emotions. [posited in 1991 by U.S. communications professor and educational psychologist Judee K. Burgoon (1948– ) and D. A. Newton]

**social memory 1.** memory for socially relevant information. Examples include the ability to recognize other individuals with whom one has had previous contact, as well as the capacity to retain and recall specific details about people (e.g., names, birthdays, life stories) and various interactions with them (e.g., conversations). Social memory also is seen in nonhuman animals—for example, rodents are able to identify other members of their species and to distinguish kin from strangers. Studies suggest that the formation of social memories is linked to the pituitary hormones OXYTOCIN and VASOPRESSIN, and neuroimaging has revealed that acute stress impairs the retrieval of socially relevant information, theoretically because of stress-induced increases in CORTISOL levels. Additional neural areas postulated to be involved in this type of memory include the AMYGDALA, ENTORHINAL CORTEX, and other structures of the medial temporal lobe as well as the HYPOTHALAMUS. **2.** see COLLECTIVE MEMORY.

**social mobility** the extent to which a society permits or encourages change in social class, social status, or social roles. Societies differ in the degree to which they permit or facilitate movement or change in their social hierarchy (see FIXED CLASS SOCIETY; OPEN CLASS SOCIETY). Compare SOCIAL IMMOBILITY. See DOWNWARD MOBILITY; HORIZONTAL MOBILITY; UPWARD MOBILITY; VERTICAL MOBILITY.

**social monogamy** see MONOGAMY.

**social mores** customs and codes of behavior established by a social group that are not necessarily supported by legal sanctions but that may be as binding as laws. See also SOCIAL CONVENTION; SOCIAL NORM.

**social motive** any motive acquired as a result of interaction with others. It may be universal (e.g., NEED FOR AFFILIATION) or culture specific (e.g., NEED FOR ACHIEVEMENT). See also PSYCHOLOGICAL NEED.

**social movement** a collaborative and sustained collective undertaking or campaign, usually initiated by a specific event, that generally seeks to implement or prevent social change. Social movements emerge and operate mainly outside accepted political institutions; they can be narrow in scope, targeting particular social concerns (e.g., teenage pregnancy), or they can address fundamental is-

suues in society, such as the WOMEN'S LIBERATION MOVEMENT or the CIVIL RIGHTS MOVEMENT of the 1950s and 1960s. Reformist movements seek the improvement of existing social institutions and practices, revolutionary movements seek large-scale revisions of the social order, reactionary movements oppose change, and communitarian movements strive to create harmonious living conditions in modern society. See also COMMUNITY ACTION GROUP; SOCIAL ACTION PROGRAM.

**social need** see LOVE NEED.

**social network** the relatively organized set of relationships that an individual or group has with others, including types and methods of communication, patterns of liking and disliking, and the strength of interpersonal connections. Such structures may be analyzed quantitatively using SOCIAL NETWORK ANALYSIS. See also ONLINE SOCIAL NETWORK.

**social network analysis** a set of empirical procedures for studying the relational structure of groups and networks graphically and mathematically. For example, as applied to a work group, social network analysis methods would identify the ties or relationships linking each member to every other member and then use that information to calculate such indexes as network density, transitivity of relationships, and closeness of members. See also SOCIOMETRY.

**social-network therapy** a form of psychotherapy in which various people who maintain significant relationships with a client (e.g., relatives, friends, coworkers) are assembled in group sessions with the client present. See also NETWORK THERAPY.

**social neuroscience** a discipline that aims to integrate the social and biological approaches to human behavior that have often been seen as mutually exclusive. Social neuroscientists use a range of methodologies to elucidate the brain structures that regulate social behavior as well as the reciprocal interactions of the brain's biological mechanisms (especially the nervous, immune, and endocrine systems) with the social and cultural contexts in which human beings operate. See also CULTURAL NEUROSCIENCE.

**social norm** any of the socially determined consensual standards that indicate (a) what behaviors are considered typical in a given context (DESCRIPTIVE NORMS) and (b) what behaviors are considered proper in the context (INJUNCTIVE NORMS). Whether implicitly or explicitly, these norms not only prescribe the socially appropriate way to respond in the situation (the "normal" course of action) but also proscribe actions that should be avoided if at all possible. Unlike statistical norms, social norms include an evaluative quality such that those who do not comply and cannot provide an acceptable explanation for their violation are evaluated negatively. Social norms apply across groups and social settings, whereas **group norms** are specific to a particular group. See also SOCIAL CONVENTION.

**social order 1.** the structures, institutions, and organizing principles that maintain a society in its customary or characteristic form. See SOCIAL ORGANIZATION. **2.** a stable or peaceful condition of society.

**social organism** a social group or society regarded as an organic entity having dynamic, living qualities, such as intention and self-preservation.

**social organization** the complete set of SOCIAL RELATIONSHIPS among members of a society or other group,

which determines the structure of the group and the place of individuals within it. These relationships can be based on several variables: kinship, age, sex, area of residence, and—in human beings—religion, matrimony, or common interests. The social organization is usually implemented by rules of behavior produced by social interactions involving DOMINANCE, TERRITORIALITY, the MATING SYSTEM, and COOPERATION.

**social ossification** ingrained social behavior that is difficult to change. For example, social ossification may be seen when a person moves to a new environment with different social rules and standards.

**social penetration theory** a model stating that relationships grow closer with increasingly intimate SELF-DISCLOSURES. [proposed in 1973 by U.S. psychologists Irwin Altman (1930– ) and Dalmás A. Taylor (1933–1998)]

**social perception** the processes by which a person uses the behavior of others to form opinions or make inferences about those individuals, particularly regarding their motives, attitudes, or values. Also called **interpersonal perception**.

**social phobia** an anxiety disorder that is characterized by extreme and persistent SOCIAL ANXIETY or PERFORMANCE ANXIETY and that causes significant distress or prevents participation in social activities. The feared situation is most often avoided altogether or else it is endured with marked discomfort or dread. Also called **social anxiety disorder**.

**social physique anxiety** apprehension and fear related to concerns about how others will perceive one's physical appearance.

**social planning** the development of strategies and plans in areas such as education, public health, and social services provision, with the goal of enhancing the quality of life for all members of the community.

**social play** **1.** play that involves interacting with others for fun or sport. Examples include ROUGH-AND-TUMBLE PLAY and sometimes SOCIODRAMATIC PLAY. It is one of three basic types of play traditionally identified, the others being OBJECT PLAY and LOCOMOTOR PLAY. Often considered primarily a human activity, social play also occurs among many nonhuman animals, including fish, reptiles, amphibians, insects, nonhuman mammals, and others. For example, some fish physically tease each other, and wasps engage in mock fighting. **2.** patterns of play identified by the 1932 classification system of U.S. child-development researcher Mildred Parten and used to characterize the level of social development and participation of preschool children. The lowest level of this system is **solitary play**, in which a child is near others but focused on his or her own activity; it progresses to **parallel play**, in which a child is next to others and using similar objects but still engaged in his or her own activity. The latter is succeeded by **associative play**, in which a child interacts with others but there is no common purpose or organization to the shared activity, and the series culminates in the highest level, **cooperative play**, in which a child interacts with others in coordinated, directed activities.

**social power** see POWER.

**social (pragmatic) communication disorder** in DSM-5, a developmental disorder characterized by a child's difficulties in the social use of language, including impaired ability to use appropriate language in varying sit-

uations, to follow conversational rules such as TURN TAKING, and to understand implied or ambiguous meanings, as in metaphors and humor. Such deficits limit the child's ability to communicate, have friends, and succeed in school.

**social presence** the degree to which individuals feel that they are in the presence of another person, often used in the analysis of the psychological experience of interacting with others in ONLINE GROUPS.

**social pressure** the exertion of influence on a person or group by another person or group. Like GROUP PRESSURE, social pressure includes rational argument and persuasion (INFORMATIONAL INFLUENCE), calls for conformity (NORMATIVE INFLUENCE), and direct forms of influence, such as demands, threats, or personal attacks on the one hand and promises of rewards or social approval on the other (INTERPERSONAL INFLUENCE). See also SOCIAL FORCE; SOCIAL INFLUENCE.

**social promotion** the practice of advancing students who have not sufficiently mastered the academic skills and knowledge requirements of the prior grade to the next grade level (e.g., from the fourth to the fifth grade). The practice is thought to enhance the students' social well-being by enabling them to stay with their peers and to avoid the negative social consequences of repeating a grade with younger children. Also called **automatic promotion**.

**social psychology** as defined by Gordon W. ALLPORT, the study of how an individual's thoughts, feelings, and actions are affected by the actual, imagined, or symbolically represented presence of other people. **Psychological social psychology** differs from **sociological social psychology** in that the former tends to put greater emphasis on internal psychological processes, whereas the latter focuses on factors that affect social life, such as status, role, and class.

**social psychology of the experiment** the study of the ways in which the participant-related and experimenter-related ARTIFACTS in an experiment arise and operate.

**social punishment** a negative interpersonal stimulus, such as SHUNNING, emotional withdrawal, or some other sign of disapproval, that decreases the frequency of the behavior that immediately precedes it. Compare SOCIAL REINFORCEMENT. See also SOCIAL SANCTION.

**social quotient** the ratio between SOCIAL AGE and CHRONOLOGICAL AGE. A social quotient is a parallel concept to an IQ, wherein a score of 100 indicates average performance for age and scores less than 100 indicate below average functioning. The social quotient was used as an index of social maturity in the Vineland Social Maturity Scale (see VINELAND ADAPTIVE BEHAVIOR SCALES). It is now increasingly called the **social intelligence quotient**.

**Social Readjustment Rating Scale** see LIFE EVENTS RATING SCALE.

**social reality** the consensus of attitudes, opinions, and beliefs held by members of a group or society.

**social recovery** restoration of an adaptive, highly functional mental state through SOCIAL THERAPY and improvement in social skills. [first described by Harry Stack SULLIVAN]

**social referencing** evaluating one's own modes of thinking, expression, or behavior by comparing them with those of other people so as to understand how to react in a

particular situation and to adapt one's actions and reactions in ways that are perceived to be appropriate. This ability has been demonstrated to emerge at a very early age: Young infants use caregivers' emotional expressions to guide their behavior in novel, ambiguous situations. See SOCIAL COMPARISON THEORY.

**social reform program** an intervention program developed and implemented to counter deleterious aspects of a social system, the primary objective being to reduce the effects of malfunctions in the system. Also called **counter-measure-intervention program**.

**social rehabilitation** **1.** the achievement of a higher level of social functioning by individuals with mental disorders or disabilities through group activities and participation in clubs and other community organizations. **2.** the achievement of a higher level of independent functioning and social participation by individuals with physical impairments or disabilities through assistance with their ACTIVITIES OF DAILY LIVING as well as with employment, transportation, and appropriate housing. **3.** services and assistance provided to help criminal offenders establish new, noncriminal ways of life and become productive members of the community.

**social reinforcement** a positive interpersonal stimulus, such as praise, a smile, touch, or another sign of approval, that increases the frequency of the behavior that immediately precedes it. Also called **social reward**. Compare SOCIAL PUNISHMENT.

**social relationship** the sum of the SOCIAL INTERACTIONS between individuals over a period of time. Momentary social interactions can be described in terms of parental care, dominant-subordinate or aggressive-fearful interactions, and so on, but a social relationship is the emergent quality from repeated interactions. A DYAD (interacting pair) may have a generally positive or generally negative social relationship that is reciprocal or complementary. Dyads with long-term social relationships will adjust behavior with each other according to feedback received.

**social relations model** a general framework used in studies of interpersonal perception in which a person's behavior with a particular partner is considered to reflect aspects of the larger group to which the two individuals belong, as well as aspects of the individual emitting the behavior, aspects of the partner, and qualities unique to the two individuals' relationship with one another. The model makes use of a round-robin rating design in which participants rate one another and their degree of perceptual accuracy in different areas is evaluated. Of particular interest are **individual accuracy**, or how well a person's judgments of an individual correspond to how that individual tends to behave across interaction partners; and **dyadic accuracy**, or how well someone can uniquely judge how a specific individual will behave with him or her. [developed in 1981 by U.S. social psychologist David A. Kenny]

**social representation** a system, model, or code for unambiguously naming and organizing values, ideas, and conduct, which enables communication and social exchange (i.e., at the levels of language and behavior) among members of a particular group or community. [term coined and theory elaborated by Romanian-born French psychologist Serge Moscovici (1925– )]

**social repression** the act or process of controlling, subduing, or suppressing individuals, groups, or larger social

aggregations through interpersonal means. Techniques of social repression include information control, the elimination of grassroots reform movements, manipulation of local leaders, and so on.

**social resistance** **1.** group opposition to the political, economic, or social actions and policies of a government or society. **2.** subgroup opposition to the values and strictures of a dominant culture.

**social responsibility norm** the socially determined standard that one should assist those in need when possible. Compare RECIPROCITY NORM; SOCIAL JUSTICE NORM.

**social reward** see SOCIAL REINFORCEMENT.

**social role** the set of attitudes and characteristic behaviors expected of an individual who occupies a specific position or performs a particular function in a social context, such as being a spouse or acting as a caregiver for an aging parent.

**social role theory** a model contending that behavioral differences between men and women can be attributed to cultural standards and expectations about gender rather than to biological factors.

**social role valorization** a principle, developed in succession to the NORMALIZATION PRINCIPLE, that stresses the importance of creating or supporting socially valued roles for people with disabilities. According to this principle, fulfillment of valued social roles increases the likelihood that a person will be socially accepted by others and will more readily achieve a satisfactory quality of life. [formulated in 1983 by German-born Canadian sociologist and special educator Wolf Wolfensberger (1934–2011)]

**social sanction** a punishment or other coercive measure imposed on a group member for violation of group rules. See also SOCIAL PUNISHMENT.

**social schema** a cognitive structure of organized information, or representations, about social norms and collective patterns of behavior within society. Whereas a SELF-SCHEMA involves a person's conception of herself or himself as an individual and in terms of a particular personal role (or roles) in life, social schemata often underlie behavior of the person acting within group contexts—particularly larger group or societal contexts.

**social science** **1.** any of a number of disciplines concerned with the common elements and collective dimensions of human experience, studied from a scientific and research perspective. These disciplines traditionally have included anthropology, economics, geography, history, linguistics, political science, psychiatry, psychology, and sociology, as well as associated areas of mathematics and biology. Additional fields include related psychological studies in business administration, journalism, law, medicine, public health, and social work. The focus of analysis ranges from the individual to institutions and entire social systems. The general goal is to understand social interactions and to propose solutions to social problems. **2.** these disciplines collectively.

**Social Security** a comprehensive social program providing basic retirement income and insurance, as well as disability, survivor, and MEDICARE benefits. Established in 1935, the program is operated by the U.S. Social Security Administration.

**social self** **1.** those aspects of one's identity or SELF-CONCEPT that are important to or influenced by interpersonal

relationships and the reactions of other people. See also PUBLIC SELF; SOCIAL IDENTITY. **2.** a person's characteristic behavior in social situations. **3.** the facade that an individual may exhibit when in contact with other people, as contrasted with his or her real self. See SOCIAL IMAGE.

**social services** **1.** services provided by government and nongovernment agencies and organizations to improve the social welfare of those in need, including people with low income, illness, or disability; older adults; and children. Services might include health care, insurance, subsidized housing, food subsidies, and the like. **2.** government services to improve standards of living for all citizens, including services such as roads and public transportation, clean water, electricity, telecommunications, and public health institutions.

**social setting detoxification** see DETOXIFICATION.

**social skills** a set of learned abilities that enable an individual to interact competently and appropriately in a given social context. The most commonly identified social skills in Western cultures include assertiveness, coping, communication and friendship-making skills, interpersonal problem solving, and the ability to regulate one's cognitions, feelings, and behavior. See also SOCIAL COMPETENCE.

**social skills training (SST)** a form of individual or group therapy for those who need to overcome social inhibition or ineffectiveness. It uses many techniques for teaching effective social interaction in specific situations (e.g., job interviews, dating), including ASSERTIVENESS TRAINING and behavioral and cognitive REHEARSAL.

**social smile** a smile in response to social stimuli. It is first seen in infants at about 4 to 6 weeks of age but is not frequent and unambiguous until about 3 months. An infant's failure to reach this developmental milestone by 6 months is considered an early indication of autism. Compare ENDOGENOUS SMILE.

**social smoker** a person who smokes cigarettes occasionally, often when in the company of other people or when drinking alcoholic beverages, and who is not addicted to cigarettes.

**social speech** speech used with the intent to communicate. Also called **socialized speech**. See also EGOCENTRIC SPEECH.

**social statics** **1.** an approach to sociology that focuses on the distinctive nature of human societies and social systems considered in the abstract, rather than on the empirical study of any particular society. Compare SOCIAL DYNAMICS. [conceptualized by Auguste COMTE] **2.** an approach to sociology that examines human societies and sociopolitical systems as they exist at a particular time or moment in history (i.e., relative to their current level of development).

**social statistics** the application of statistical methods to the understanding of social issues and problems. See also DEMOGRAPHY. [formulated by Belgian social statistician Adolphe Quetelet (1796–1874)]

**social status** the relative prestige, authority, and privilege of an individual or group. Social status can be determined by any number of factors—including occupation, level of education, ethnicity, religion, age, rank, achievements, wealth, reputation, authority, and ancestry—with different groups and societies stressing some qualities more than others when allocating status to members.

**social stimulus** any agent, event, or situation with social significance, particularly an individual or group, that elicits a response relevant to interpersonal relationships.

**social stratification** the existence or emergence of separate classes or strata in a society. See CASTE; SOCIAL CLASS; SOCIOECONOMIC STATUS.

**social structure** the complex of relationships and systems that organize and regulate interpersonal phenomena in a group or society. The social structure of a group includes its norms and roles and the status, attraction, and communication relations that link one member to another (see GROUP STRUCTURE). The social structure of a society includes the complex of relations among its constituent individuals, groups, institutions, customs, mores, and so on.

**social studies** a course of study that covers many aspects of the social environment, including disciplines such as geography, history, judicial systems, governments past and present, anthropology, national customs, and sociology.

**social subordination** the relegation of an individual or group to a position of low status or prestige in society. [concept articulated by German philosopher and sociologist Georg Simmel (1858–1918)]

**social support** the provision of assistance or comfort to others, typically to help them cope with biological, psychological, and social stressors. Support may arise from any interpersonal relationship in an individual's social network, involving caregivers, family members, friends, neighbors, religious institutions, colleagues, or SUPPORT GROUPS. It may take the form of practical help (e.g., doing chores, offering advice), **tangible support** that involves giving money or other direct material assistance, and emotional support that allows the individual to feel valued, accepted, and understood. See also COPING; INVISIBLE SUPPORT.

**social technology** **1.** use of the principles and methods of SOCIAL SCIENCE to develop practical strategies for confronting and resolving conflicts and problems of society. **2.** the techniques so developed.

**social therapy** therapeutic and rehabilitative approaches that use social structures and experiences to improve the interpersonal functioning of individuals, such as MILIEU THERAPY and the THERAPEUTIC COMMUNITY.

**social transmission** the transfer of customs, language, or other aspects of the CULTURAL HERITAGE of a group from one generation to the next. See HERITAGE; SOCIAL HERITAGE.

**social trap** a SOCIAL DILEMMA in which individuals, groups, organizations, or whole societies initiate a course of action or establish a set of relationships that lead to negative or even lethal outcomes in the long term, but that once initiated are difficult to withdraw from or alter. In many cases, immediate positive reinforcements lead to behaviors that in the long run are bad for the individual (e.g., addiction) or for society (e.g., the TRAGEDY OF THE COMMONS). Immediate negative reinforcements can prevent behaviors that in the long run would be good for the individual (e.g., studying) or for society (e.g., using mass transportation). See also MIXED-MOTIVE GAME.

**social tunneling** a psychological state, usually associated with a demanding task or stressful environment, characterized by a tendency to ignore social cues that may be relevant to a task, such as spoken commands or alert signals from other people. Compare COGNITIVE TUNNELING.

**social withdrawal** retreat from interpersonal relationships, usually accompanied by an attitude of indifference, detachment, and aloofness. Social withdrawal is often associated with disorders such as schizophrenia, autism, and depression.

**social work** a profession devoted to helping individuals, families, and other groups deal with personal and practical problems within the larger community context of which they are a part. Social workers address a variety of problems, including those related to mental or physical disorder, poverty, living arrangements, child care, occupational stress, and unemployment, especially through involvement in the provision of SOCIAL SERVICES.

**social zone** the DISTANCE ZONE adopted between people engaged in relationships of a relatively formal nature, such as attorney and client. The social zone is defined as the area of 1.25 m to 3.5 m (4 ft–11½ ft) from a person. See PROXEMICS. Compare INTIMATE ZONE; PERSONAL DISTANCE ZONE; PUBLIC DISTANCE ZONE.

**Sociedad Interamericana de Psicología (SIP)** see INTERAMERICAN SOCIETY OF PSYCHOLOGY.

**societal-reaction theory** see LABELING THEORY.

**society** *n.* **1.** an enduring social group living in a particular place whose members are mutually interdependent and share political and other institutions, laws and mores, and a common culture. **2.** any well-established group of individuals (humans or other animals) that typically obtains new members at least in part through sexual reproduction and has relatively self-sufficient systems of action. **3.** an organization formed for a particular purpose or to further a common interest or activity. **4.** the companionship of other people. **5.** popularly and loosely, an elite social level, typically comprising those of high SOCIOECONOMIC STATUS who possess money, power, and prestige and are considered in some way fashionable. —**societal** *adj.*

**Society for Neuroscience** a nonprofit organization of basic scientists and physicians who study the brain and nervous system. Formed in 1969, the group publishes *The Journal of Neuroscience*.

**Society for Psychical Research** a British scholarly society founded in 1882 to promote the scientific investigation of parapsychological and paranormal phenomena. It publishes the *Journal of the Society for Psychical Research*.

**Society for Psychotherapy Research** an international, interdisciplinary organization dedicated to the scientific study of psychotherapy in all of its various forms. It publishes the journal *Psychotherapy Research*.

**Society for Research in Child Development (SRCD)** a multidisciplinary, nonprofit, professional association founded in 1933 to promote research in the field of human development, to foster the exchange of information among scientists and other professionals of various disciplines, and to improve the application of research findings. It publishes *Child Development*, among other journals.

**Society of Experimental Psychologists** an organization whose objective is to advance psychology by arranging conferences on experimental psychology. Founded in 1904 by Edward Bradford TITCHENER as the Society of Experimentalists, it was reorganized under its current name in 1927.

**Society of Experimental Social Psychology** a scientific organization dedicated to the advancement of social

psychology. It publishes the *Journal of Experimental Social Psychology*.

**Society of Indian Psychologists (SIP)** an organization that promotes the well-being and education of American Indians and Alaska Natives, as well as the psychologists, graduate students, and other mental health professionals who serve them. Formed in 1975 from the merger of the American Indian Interest Group and the Network of Indian Psychologists, SIP sponsors research to improve the understanding and treatment of health problems in Indian and Native communities, provides crisis intervention to communities, and seeks government policy changes that enhance health care for these populations. The society also informally mentors students, offers scholarships, and advocates for more federal funding for the Indians Into Psychology Doctoral Education and other psychology training programs.

**sociobiology** *n.* the systematic study of the biological basis for social behavior. Sociobiologists believe that populations tend to maintain an optimal level of density (neither overpopulation nor underpopulation) by controls such as aggression, stress, fertility, emigration, predation, and disease. Such controls are held to operate through the Darwinian principle of NATURAL SELECTION. See also EVOLUTIONARY PSYCHOLOGY. [pioneered by U.S. biologist Edward O. Wilson (1929– )] —**sociobiological** *adj.*

**sociocentric bias** see GROUP-SERVING BIAS.

**sociocentric network** see GROUP NETWORK.

**sociocentrism** *n.* **1.** the tendency to put the needs, concerns, and perspective of the social unit or group before one's individual, egocentric concerns. See also ALLOCENTRIC. **2.** the practice of perceiving and interpreting situations from the point of view of the social group rather than from one's personal perspective. **3.** the tendency to judge one's own group as superior to other groups across a variety of domains. Whereas ETHNOCENTRISM refers to the selective favoring of one's ethnic, religious, racial, or national groups, sociocentrism usually means the favoring of smaller groups characterized by face-to-face interaction among members. Compare EGOCENTRISM. —**sociocentric** *adj.*

**sociocognitive bias** a subtle bias in judgment to which evaluators may be susceptible. Unlike values, sociocognitive biases are inaccurate judgments that result from shortcomings in cognitive processing; they appear to be universals that intrude regardless of values or ethics.

**sociocultural anthropology** see ANTHROPOLOGY.

**sociocultural deprivation** see PSYCHOSOCIAL DEPRIVATION.

**sociocultural factors** environmental conditions that play a part in healthy and adaptive behavior and well-being or in maladaptive behavior and the etiology of mental disorder and social pathology. Examples of sociocultural factors of a positive nature are a strong sense of family and community support and mentorship, good education and health care, availability of recreational facilities, and exposure to the arts. Examples of a negative nature are slum conditions, poverty, extreme or restrictive occupational pressures, lack of good medical care, and inadequate educational opportunities.

**sociocultural perspective** **1.** any viewpoint or approach to health, mental health, history, politics, economics, or any other area of human experience that empha-

sizes the environmental factors of society, culture, and social interaction. **2.** in developmental psychology, the view that cognitive development is guided by adults interacting with children, with the cultural context determining to a large extent how, where, and when these interactions take place. A major pioneer of this perspective was Lev VYGOTSKY, whose **sociocultural theory** posited that the developmental process was one of gradual mastery by children of their own “natural” cognitive functions through interaction with and guidance from more skilled individuals or mentors (e.g., parents, teachers) in their surrounding culture. See also GUIDED PARTICIPATION; ZONE OF PROXIMAL DEVELOPMENT.

**sociodrama** *n.* a technique for enhancing human relations and social skills that uses dramatization and ROLE PLAY. See also PSYCHODRAMA.

**sociodramatic play** a form of play in which a child takes on a social role (e.g., mother, father, police officer, doctor), elaborates a theme in cooperation with at least one other role player, and interacts with at least one other child both actively and verbally.

**socioeconomic status (SES)** the position of an individual or group on the socioeconomic scale, which is determined by a combination of social and economic factors such as income, amount and kind of education, type and prestige of occupation, place of residence, and—in some societies or parts of society—ethnic origin or religious background. See SOCIAL CLASS.

**socioemotional role** see RELATIONSHIP ROLE.

**socioemotional selectivity theory** a lifespan theory of motivation positing that as people age, they reorganize their goals to give priority to those that are emotionally meaningful (e.g., satisfying relationships) rather than to those that are future oriented (e.g., seeking new challenges). The theory predicts that people who are older or who are in other situations that place constraints on time attach greater importance to increasing emotional closeness with significant others than do people who are younger or perceive time as relatively open ended. [first proposed in 1993 by U.S. psychologist Laura L. Carstensen]

**sociofugal** *adj.* describing environmental conditions that discourage or prevent social interaction, such as rows of seats facing the same way (e.g., church pews) or ambient noise that interferes with communication. A physical environment with these characteristics is termed a **sociofugal space**. Compare SOCIOPETAL.

**sociogenetics** *n.* the study of the origin and development of societies. —**sociogenetic** *adj.*

**sociogenic** *adj.* resulting from social factors. For example, a **sociogenic hypothesis** of schizophrenia posits that stressful social conditions, such as living in impoverished circumstances, are major contributors to and causal agents of the disorder. See also DRIFT HYPOTHESIS.

**sociogram** *n.* a graphic representation of the relations among members of a social unit or group. In most cases, each member of the group is depicted by a symbol, such as a lettered circle or square, and the types of relations among members (e.g., communication links, friendship pairings) are depicted by lines and arrows. SOCIOMETRY, as originally developed by Jacob L. MORENO, uses objective data collected by observers or self-reports provided by members of the group to generate sociograms.

**sociolect** *n.* a DIALECT spoken by a particular social group.

**sociolinguistics** *n.* the study of the relationship between language and society and of the social circumstances of language usage, especially as related to characteristics such as gender, social class, and ethnicity. Using techniques and findings from linguistics and the social sciences, sociolinguistics is concerned with the individual's language use in the context of his or her social community or culture. One aspect of this field is the study of linguistic codes, that is, the culturally determined rules and conventions that govern language usage. Social factors are also important in analyzing how languages change over time.

**sociological factors** social conditions that affect human behavior. Examples of such factors are socioeconomic and educational level, environmental circumstances (e.g., crowding), and the customs and mores of an individual's social group.

**sociological measure** a formal measure of aspects of society that may affect the development or maintenance of behaviors or mental health problems. Sociological measures may assess the interrelationships between people or the structural components of a society, for example, and include both quantitative and qualitative methods. See also SOCIOMETRY.

**sociological social psychology** see SOCIAL PSYCHOLOGY.

**sociology** *n.* the scientific study of the origin, development, organization, forms, and functioning of human society, including the analysis of the relationships between individuals and groups, institutions, and society itself. —**sociological** *adj.* —**sociologist** *n.*

**sociometer theory** a theory holding that SELF-ESTEEM is important to individuals mainly because it serves as a measure of social appeal (i.e., a sociometer). Specifically, high self-esteem signifies that the self has traits—such as competence, likability, moral virtue, and physical attractiveness—that enhance one's relational value and promote acceptance by other people. [introduced in 1995 by U.S. social psychologist Mark R. Leary (1954– ) and colleagues]

**sociometric analysis** any investigation of the structural properties of a group (with a particular focus on patterns of liking and disliking) that makes use of procedures from SOCIOMETRY.

**sociometric differentiation** the gradual development of stronger and more positive interpersonal ties between some members of a group, accompanied by decreases in the quality of relations between other members of the group. See also ATTRACTION RELATIONS; SOCIOMETRY.

**sociometric distance** the degree of closeness or acceptance between individuals or groups as measured on a SOCIAL DISTANCE SCALE. See also PROXEMICS; SOCIAL DISTANCE.

**sociometric status** **1.** in SOCIOMETRY, the relative interpersonal position of a member within a group as determined by other group members. **2.** in measures of peer acceptance among children and adolescents, any of several profiles assigned to an individual based on peer ratings of (a) his or her social preference (i.e., number of the individual's nominations as most liked minus the number of nominations as least liked) and (b) his or her social impact (i.e., number of the individual's nominations as most liked plus



number of nominations as least liked). In research reported in 1982, likability was related to peer perception of a child's cooperativeness, supportiveness, and physical attractiveness, whereas dislike was related to peer perception of a child's disruptiveness and aggression. Among status types, a **popular child** received both high social preference and high social impact scores. A **rejected child** received both low social preference and low social impact scores. An **average child** scored at the mean for social preference and social impact. A **neglected child** (typically called an ISO-LATE) received a low social impact score but was neither actively liked nor actively disliked by peers. A **controversial child** received high social impact scores and mean overall social preference scores but was above the mean for both positive and negative preference ratings. Later studies have proposed subtypes for some of these status profiles—for example, subdividing peer-rejected status into AGGRESSIVE-REJECTED CHILD and WITHDRAWN-REJECTED CHILD. [proposed in 1982 by U.S. psychologists John D. Coie (1937– ), Kenneth A. Dodge (1954– ), and Heide Coppotelli]

**sociometric structure** see ATTRACTION RELATIONS.

**sociometric test** a self-report measure of intermember relations in a group, as used in SOCIOOMETRY to analyze and develop a graphic representation of the group's structure (see SOCIOGRAM).

**sociometry** *n.* a field of research in which various techniques are used to analyze the patterns of intermember relations within groups and to summarize these findings in mathematical and graphic form. In most cases, relationships between members are summarized in a SOCIOGRAM, in which each member is represented by a numbered or lettered symbol and relationships are identified by lines between them with arrows indicating the direction of relationships. The method also yields various indices of group structure and GROUP COHESION, including choice status (the number of times a person is chosen by the other group members), rejection status (the number of times a person is rejected by others), the relative number of mutual pairs in a group, and so on. See also SOCIAL NETWORK ANALYSIS; SOCIOMETRIC STATUS. [developed by Jacob L. MORENO] —**sociometric** *adj.*

**socionomics** *n.* the study of nonsocial influences on social groups; that is, the ways in which the physical environment modifies society. This includes the effects of different terrains and climatic conditions on economic and social organization.

**sociopath** *n.* a former name for an individual with an ANTISOCIAL PERSONALITY DISORDER.

**sociopathic behavior** see DYSSOCIAL BEHAVIOR.

**sociopathic personality** see ANTISOCIAL PERSONALITY DISORDER.

**sociopathy** *n.* a former name for ANTISOCIAL PERSONALITY DISORDER.

**sociopetal** *adj.* describing environmental conditions that promote social interaction, such as circular seating arrangements and a comfortable ambient room temperature. A physical environment with these characteristics is termed a **sociopetal space**. Compare SOCIOFUGAL.

**sociosexual assessment** an assessment of an individual to identify or measure his or her awareness of cultural standards regarding social relationships and sexual activity, knowledge of facts about sexuality and the nature and consequences of sexual interaction, and engagement (type

and nature) in sexual activities. It may also include an assessment of the risks of actual sexual activity.

**sociosexual orientation** a dimension of personality that describes people's comfort with and preference for sexual activity in the absence of love or commitment. People who are said to have an unrestricted sociosexual orientation (usually but not exclusively men) report more sexual activity outside of committed intimate relationships (e.g., one-night stands, short-term relationships, extramarital affairs). In evolutionary theorizing, sociosexual orientation is considered a determinant of preferences about the enactment of short-term versus long-term mating strategies.

**sociotechnical systems approach** an approach to the design and evaluation of WORK SYSTEMS that developed in Britain after World War II. It is based on the theory that tasks and roles, technology, and the social system constitute a single interrelated system, such that changes in one part require adjustments in the other parts. The introduction of new technologies, for example, may automate some job tasks and lead to decreased job satisfaction and group resistance to the changes. The goal of this approach is to optimize organizational or technological design by considering the ways in which people interact with technology in a variety of environments.

**sociotherapy** *n.* any supportive therapeutic approach that emphasizes socioenvironmental and interpersonal factors in an individual's adjustment to his or her surroundings. Sociotherapy may be used with several therapeutic approaches, such as family counseling, vocational retraining, and therapy aimed at assisting an individual's readjustment to community life following hospitalization for severe mental illness.

**sociotropy** *n.* the tendency to place an inordinate value on relationships over personal independence, thought to leave one vulnerable to ANACLETIC DEPRESSION in response to the loss of relationships or to conflict.

**socius** *n.* the individual considered to be the basic unit of society. Also called **social atom**.

**Socratic dialogue** a process of structured inquiry and discussion between two or more people to explore the concepts and values that underlie their everyday activities and judgments. In some psychotherapies, it is a technique in which the therapist poses strategic questions designed to clarify the client's core beliefs and feelings and, in the case of COGNITIVE THERAPY, to enable the client to discover the distortions in his or her habitual interpretation of a given situation. In psychotherapy, it is also known as the **Socratic-therapeutic method**.

**Socratic effect** the finding that mere expression of beliefs tends to produce greater logical consistency among belief structures. [originally documented by William J. MCGUIRE]

**sodium channel** see ION CHANNEL.

**sodium oxybate** see GHB.

**sodium pump** a membrane protein that uses energy to actively transport sodium ions out of a cell against their concentration gradient. The main sodium pump responsible for maintaining the RESTING POTENTIAL of animal cells, and hence the excitability of neurons and muscle cells, is called an **Na<sup>+</sup>/K<sup>+</sup> ATPase**. In each cycle, this pump moves three sodium ions out of the cell, across the plasma membrane, in exchange for two potassium ions entering the cell, using energy derived from ATP.

**sodium regulation** maintenance of the concentration of sodium ions in blood plasma within normal limits. Sodium ions are the principal CATIONS of plasma and extracellular fluid and play a crucial role in fluid and electrolyte balance. Falling levels of plasma sodium trigger release of ALDOSTERONE from the adrenal cortex. This hormone stimulates reabsorption of sodium ions by the kidney tubules, thereby restoring plasma sodium levels. Severe sodium deficiency can be fatal, whereas excessive plasma sodium levels can result in hypertension.

**sodomy** *n.* **1.** ANAL INTERCOURSE between human beings or sexual intercourse of any kind between a human being and a nonhuman animal (see BESTIALITY). This word is derived from the name of the corrupt town of Sodom described in Genesis 18–19. **2.** in legal contexts, any sexual assault that does not involve penile–vaginal penetration.

**soft data** subjective data that lack the rigor of HARD DATA. Soft data usually result from informal collection methods, such as those lacking RANDOM ASSIGNMENT to conditions, those lacking formal RANDOM SAMPLING, or those based only on anecdote. Soft data may be descriptive or qualitative and are used to help interpret hard data.

**soft determinism** the position that all events, including human actions and choices, have causes, but that free will and responsibility are compatible with such DETERMINISM. Compare HARD DETERMINISM.

**soft drug** see HARD DRUG.

**soft key** in ergonomics, a control key that activates multiple functions depending upon the state of the system. Soft keys are usually mapped to a specific area on the display.

**soft neurological sign** see SOFT SIGN.

**soft palate** the portion of the roof of the mouth that extends rearward from the HARD PALATE and terminates at a fleshy appendage, the UVULA. Consisting of fibromuscular tissue covered by mucous membrane, it separates the oral cavity from the NASOPHARYNX and, when raised, closes off the nasopharynx to produce normal speech sounds. Also called **velum palatinum**.

**soft psychology** a usually pejorative name for those areas of psychology that do not always make rigorous use of scientific methods in developing, evaluating, and applying the principles and techniques of academic psychology. For example, experimental researchers may refer to clinical psychology as soft psychology. Compare HARD PSYCHOLOGY.

**soft sell** see HARD SELL.

**soft sign** a clinical, behavioral, or neurological sign that may reflect the presence of neurological impairment. Soft signs are subtle, nonspecific, and ambiguous (because they are also seen in individuals without neurological impairment). Examples include slight abnormalities of speech, gait, posture, or behavior; sleep disturbances; slow physical maturation; sensory or perceptual deficits; and short attention span. Also called **equivocal sign**; **soft neurological sign**.

**soft spot** see FONTANEL.

**software** *n.* any information-processing program utilized by computers or other electronic equipment. For example, the graphing application that aids a researcher in visualizing and analyzing neuronal structures is software, as is the complex file of data and instructions that comprises a computer's operating system and enables it to function. Compare HARDWARE. See also ASSISTIVE SOFTWARE.

**Sohval–Soffer syndrome** a rare congenital disease characterized by intellectual disability and testicular deficiency, as well as skeletal anomalies and diabetes mellitus. The penis and testes are small, and facial and pubic hair is sparse. [reported in 1953 by Arthur R. **Sohval** (1904–1985) and Louis J. **Soffer** (1904–1995), U.S. physicians]

**SOI** abbreviation for STRUCTURE OF INTELLECT MODEL.

**solicitation behavior** in animal behavior, the actions shown by one individual seeking to mate with another, typically the behavior of females as they seek to interest a mate in copulation. In some primates, such as capuchin and patas monkeys, males rarely initiate sexual interactions without extensive female solicitation behavior. In many other species, attempts by males to copulate are unsuccessful in the absence of female solicitation behavior.

**solipsism** *n.* the philosophical position that one can be sure of the existence of nothing outside the self, as other people and things may be mere figments of one's own consciousness. Although psychologically unacceptable, such a position is notoriously difficult to refute, either logically or empirically. The question posed by solipsism has been put in various ways, but all arise from the fact that one's experience of one's own consciousness and identity is direct and unique, so that one is cut off from the same kind of experience of other minds and the things of the world. See CARTESIAN SELF; EGOCENTRIC PREDICAMENT. —**solipsist** *n.* —**solipsistic** *adj.*

**solitary nucleus** a collection of neural cell bodies in the medulla oblongata of the brainstem that relays information from the intermediate nerve (see GREATER SUPERFICIAL PETROSAL NERVE), glossopharyngeal nerve, and vagus nerve. Gustatory (taste) neurons project to the anterior division of the nucleus, with touch and temperature afferents immediately lateral and visceral afferents medial and caudal. Gustatory neurons project from the solitary nucleus to control reflexes of acceptance or rejection, to anticipate digestive processes, and to activate higher levels of the taste system (see THALAMIC TASTE AREA). Also called **nucleus of the solitary tract (NST)**.

**solitary play** see SOCIAL PLAY.

**Solomon four-group design** an experimental design that assesses the effect of having been pretested on the magnitude of the treatment effect. Participants are randomly divided into four groups and each group experiences a different combination of experimental manipulations: the first group (A) receives the pretest, the treatment, and the posttest; the second group (B) receives only the treatment and posttest; the third group (C) receives the pretest, no treatment, and a posttest; and the fourth group (D) receives only a posttest. The major advantages of the Solomon four-group design over a traditional two-group PRETEST–POSTTEST DESIGN are that it reduces the influence of CONFOUNDS and that it can pinpoint whether changes in the dependent variable are due to some INTERACTION EFFECT between the pretest and the treatment. A major disadvantage, however, is that its analysis and statistics are complex. [Richard L. SOLOMON]

**solute** *n.* the substance that is dissolved in a SOLVENT to form a solution.

**solution-focused brief therapy** BRIEF PSYCHOTHERAPY that focuses on problems in the HERE AND NOW, with specific goals that the client views as important to achieve in a limited time.

**solvent** *n.* the liquid in which a substance (the SOLUTE) is dissolved in forming a solution.

**soma** *n.* **1.** the physical body (Greek, “body”), as distinguished from the mind or spirit (see SOUL). See MIND–BODY PROBLEM. **2.** in neuroscience, the CELL BODY of a neuron. **3.** a plant regarded as sacred (and personified as the plant god Soma) by ancient Aryan peoples, which some experts have hypothesized to be FLY AGARIC (*Amanita muscaria*).

**Soma** *n.* a trade name for CARISOPRODOL.

**somaesthesia** *n.* see SOMESTHESIA.

**somat-** combining form see SOMATO-.

**somatic** *adj.* **1.** describing, relating to, or arising in the body rather than from the mind. **2.** describing, relating to, or arising in cells of the body other than the sex cells or their precursors (i.e., germ-line cells). Somatic MUTATIONS cannot be transmitted to the offspring of the affected individual.

**somatic anxiety** the level of reaction of the SYMPATHETIC NERVOUS SYSTEM that one experiences in any given situation.

**somatic area** see SOMATOSENSORY AREA.

**somatic cell** see BODY CELL.

**somatic concern** worries about one’s bodily health, including concern over physical symptoms (e.g., chest pain, nausea, diarrhea, headaches, shortness of breath) and distressing beliefs about bodily illness or dysfunction. See HYPOCHONDRIASIS.

**somatic delusion** a false belief related to one or more bodily organs, such as believing that they are functioning improperly or are diseased, injured, or otherwise altered. Although standard tests do not confirm the belief, the individual nonetheless continues to maintain this conviction. Also called **somatopsychic delusion**.

**somatic depression** a MAJOR DEPRESSIVE EPISODE in which physical symptoms, such as fatigue or appetite changes, are prominent.

**somatic disorder** an organic physical disorder, as distinguished from a FUNCTIONAL DISORDER or a PSYCHOGENIC DISORDER.

**somatic function** any function of sensation and muscular contraction that involves the SOMATIC NERVOUS SYSTEM.

**somatic hallucination** the false perception of a physical occurrence within the body, such as feeling electric currents.

**somatic nervous system** the part of the nervous system comprising the sensory and motor neurons that innervate the sense organs and the skeletal muscles, as opposed to the AUTONOMIC NERVOUS SYSTEM.

**somatic obsession** preoccupation with one’s body or any part of it. This concern may be associated with compulsive checking of the body part (e.g., in a mirror or by touch), comparing oneself to others, and seeking reassurance about one’s body. Somatic obsession is the central feature of BODY DYSMORPHIC DISORDER but may also be a feature of OBSESSIVE-COMPULSIVE DISORDER if other obsessive-compulsive symptoms are present.

**somatic receptor** any of the sensory organs located in the skin, including the deeper kinesthetic sense organs (see

KINESTHESIS). Types of somatic receptors include free nerve endings, MERKEL’S TACTILE DISKS, MEISSNER’S CORPUSCLES, KRAUSE END BULBS, GOLGI TENDON ORGANS, and BASKET ENDINGS.

**somatic sense** see SOMATOSENSE.

**somatic sensory area** see SOMATOSENSORY AREA.

**somatic sensory system** see SOMATOSENSORY SYSTEM.

**somatic symptom and related disorders** in *DSM–5*, a new diagnostic category that includes disorders predominantly characterized by the presence of bodily symptoms associated with severe distress and impairment. The group includes SOMATIC SYMPTOM DISORDER, ILLNESS ANXIETY DISORDER, CONVERSION DISORDER, psychological factors affecting other medical conditions (e.g., denial of medical symptoms, poor adherence to treatment), and FACTITIOUS DISORDER. The category replaces *DSM–IV–TR*’s SOMATOFORM DISORDERS as a classification scheme and eliminates HYPOCHONDRIASIS, PAIN DISORDER, and SOMATIZATION DISORDER, although some of their symptom characteristics do inform the conceptualization of disorders in the new collection.

**somatic symptom disorder** in *DSM–5*, a disorder characterized by one or more significant bodily symptoms (e.g., pain) that cause distress or impair daily function and by excessive, maladaptive thoughts (preoccupation) or excessive worry about the symptoms, with or without the presence of a medical condition to account for the symptoms. One of two replacement diagnoses for HYPOCHONDRIASIS, somatic symptom disorder is determined based only on this set of criteria and does not also apply to high health anxiety that occurs in the absence of significant somatic symptoms, as in ILLNESS ANXIETY DISORDER. Somatic symptom disorder also replaces such *DSM–IV–TR* diagnoses as SOMATIZATION DISORDER, requiring only one or two symptoms for diagnosis rather than the much higher symptom count (4 pain, 2 gastrointestinal, 1 sexual, 1 psychoneurological) of the older criteria.

**somatic therapy** the treatment of mental disorders by physical methods that directly influence the body, such as the administration of drugs (PHARMACOTHERAPY) or the application of a controlled, low-dose electric current (ELECTROCONVULSIVE THERAPY). Also called **somatotherapy**.

**somatic weakness** the hypothesized vulnerability, due to congenital susceptibility, of an organ or organ system to the effects of psychological stress. The organ is thus predisposed to becoming the focus of a PSYCHOSOMATIC DISORDER.

**somatist** *n.* a person who considers mental disorders to be manifestations of physical (bodily) disease.

**somatization** *n.* the expression of psychological disturbance in physical (bodily) symptoms. The first use of the word has controversially been attributed to Viennese psychoanalyst Wilhelm Stekel (1868–1940) to describe what is now called CONVERSION. Some investigators use the word in reference not only to the physical symptoms that occur in almost every type of anxiety disorder but also to the expression of symptoms in such PSYCHOSOMATIC DISORDERS as psychogenic asthma and peptic ulcers.

**somatization disorder** in *DSM–IV–TR*, a SOMATOFORM DISORDER involving a history of multiple physical symptoms (at least eight, one of which must be a PSEUDONEUROLOGICAL symptom) of several years’ duration, for which medical attention has been sought but which are appar-

ently not due to any physical disorder or to the effects of a substance such as a medication. The complaints are often described in vague yet colorful or exaggerated terms by the patient, who often appears anxious or depressed. Among the common complaints are feelings of sickliness, difficulty in swallowing or walking, blurred vision, abdominal pain, nausea, diarrhea, painful or irregular menstruation, sexual indifference, painful intercourse, pain in the back or joints, shortness of breath, palpitations, and chest pain. Somatization disorder has been eliminated from *DSM-5* and superseded by *SOMATIC SYMPTOM DISORDER*.

**somato-** (**somat-**) *combining form* body.

**somatoform disorder** in *DSM-IV-TR*, any of a group of disorders marked by physical symptoms suggesting a specific medical condition for which there is no demonstrable biological evidence and for which there is positive evidence or a strong probability that they are linked to psychological factors. The symptoms must cause marked distress or significantly impair normal social or occupational functioning. The group includes *SOMATIZATION DISORDER*, *UNDIFFERENTIATED SOMATOFORM DISORDER*, *CONVERSION DISORDER*, *PAIN DISORDER*, *HYPOCHONDRIASIS*, and *BODY DYSMORPHIC DISORDER (BDD)*. Of these, only conversion disorder and BDD have been retained as formal diagnoses in *DSM-5*, either classified with other similar diagnostic entities within a new somatic category, *SOMATIC SYMPTOM AND RELATED DISORDERS*, or in the case of BDD, removed from nominal somatic classification and grouped under a different rubric altogether (see *OBSESSIVE-COMPULSIVE DISORDER*). The other somatoform disorders have been eliminated, although some of their symptomatic features have been retained as specifiers or criteria for new somatic diagnoses (e.g., *SOMATIC SYMPTOM DISORDER*).

**somatoform pain disorder** see *PAIN DISORDER*.

**somatogenesis** *n.* **1.** the process by which germ-cell material develops into body cells. **2.** the development of behavioral or personality traits or disorders as a result of anatomical, physiological, or biochemical changes in the body. Also called **organogenesis**. —**somatogenic** or **somatogenetic** *adj.*

**somatognosia** *n.* awareness of one's own body or body parts. Denial of one's body parts is called *ASOMATOGNOSIA* and is commonly seen in individuals with *NEGLECT*.

**somatography** *n.* a variety of body visualization techniques used in *ENGINEERING ANTHROPOMETRY* and *EQUIPMENT DESIGN*. —**somatographic** *adj.*

**somatomedin** *n.* any of a class of polypeptides, produced by the liver in response to stimulation by *GROWTH HORMONE*, that stimulate protein synthesis and promote growth.

**somatometry** *n.* measurement of the human body, particularly in order to correlate physique and psychological characteristics. —**somatometric** *adj.*

**somatophrenia** *n.* a tendency to imagine or exaggerate bodily ills. See also *HYPOCHONDRIASIS*.

**somatoplasm** *n.* the tissue cells of the body collectively, as distinguished from the germ cells. Compare *GERM PLASM*.

**somatopsychic delusion** see *SOMATIC DELUSION*.

**somatopsychology** *n.* the study of the psychological impact of physiological disease or disability: The term is little used, and the subject matter of somatopsychology is

now largely included under the rubric of *HEALTH PSYCHOLOGY*.

**somatopsychosis** *n.* **1.** a psychosis marked by delusions that involve the person's body or body parts. **2.** a psychosis that is due to a bodily (physical) disease. [defined by U.S. psychiatrist Elmer Ernest Southard (1876–1920)]

**somatosense** *n.* any of the senses related to touch and position, including *KINESTHESIS*, the *VISCERAL SENSE*, the *articular senses* (see *ARTICULAR SENSATION*), and the *CUTANEOUS SENSES*. Also called **somatic sense**; **somesthetic sense**.

**somatosensory area** either of two main areas of the *CEREBRAL CORTEX* that can be mapped with *EVOKED POTENTIALS* to reveal points that respond to stimulation of the various *SOMATOSENSES*. The somatosensory areas vary somewhat among different species; in humans, the *PRIMARY SOMATOSENSORY AREA* is located in the *POSTCENTRAL GYRUS* of the anterior parietal lobe, and the *SECONDARY SOMATOSENSORY AREA* is on the lateral surface of the parietal lobe just dorsal to the *LATERAL SULCUS*. Also called **somatic sensory area**; **somatic area**; **somatosensory cortex**.

**somatosensory disorder** any disorder of sensory information received from the skin and deep tissue of the body that is associated with impaired or abnormal somatic sensation. Such disorders may affect *PROPRIOCEPTION* and the perception of pain, touch, or temperature. Examples of somatosensory impairments include *hypesthesia* (decreased sensitivity of a sense), *hyperesthesia* (increased sensitivity of a sense), and *hypoalgesia* (diminished sensitivity to pain).

**somatosensory evoked potential (SEP)** an electrical response in the brain to stimuli such as pain, touch, heat, vibration, or position change.

**somatosensory system** the parts of the nervous system that serve perception of touch, vibration, pain, temperature, and position (see *SOMATOSENSE*). Nerve fibers from receptors for these senses enter the dorsal roots of the spinal cord and ascend mainly through tracts in the *DORSAL COLUMNS* to the *VENTROPOSTERIOR NUCLEI* of the thalamus, from which they are relayed (directly or indirectly) to the *SOMATOSENSORY AREAS* of the parietal cortex. Also called **somatic sensory system**.

**somatostatin** *n.* a hormone secreted by the hypothalamus that inhibits the release of *GROWTH HORMONE* (somatotropin) by the anterior pituitary gland. It is also secreted by cells in the *ISLETS OF LANGERHANS* in the pancreas, where it inhibits the secretion of insulin and glucagon. Analogues of somatostatin are used therapeutically in the control of *ACROMEGALY*. Also called **somatotropin-release inhibiting factor (SRIF)**.

**somatotherapy** *n.* **1.** treatment of physical disorders. **2.** see *SOMATIC THERAPY*.

**somatotonia** *n.* the personality type that, according to *SHELDON'S CONSTITUTIONAL THEORY OF PERSONALITY*, is associated with a mesomorphic physique (see *MESOMORPH*). Somatotonia is characterized by a tendency toward energetic activity, physical courage, and love of power. —**somatotonic** *adj.*

**somatotopagnosia** *n.* a form of agnosia in which the individual is unable to localize and orient different parts of the body. Unlike *AUTOTOPAGNOSIA*, which refers only to one's own body parts, somatotopagnosia includes the ina-

S

bility to orient and recognize the body parts of others or representations of the body.

**somatotopic organization** the topographic distribution of areas of the MOTOR CORTEX relating to specific activities of skeletal muscles, as mapped by electrically stimulating a point in the cortex and observing associated movement of a skeletal muscle in the face, the trunk, or a limb. See also MOTOR HOMUNCULUS.

**somatotropin** *n.* see GROWTH HORMONE.

**somatotropin-release inhibiting factor (SRIF)** see SOMATOSTATIN.

**somatotype** *n.* the body build or physique of a person, particularly as it relates to his or her temperament or behavioral characteristics (see CONSTITUTIONAL TYPE). Numerous categories of somatotypes have been proposed by various investigators since ancient times. The classification of individuals in this way is called **somatotypology**.

**somber—bright dimension** in psychological aesthetics, the degree to which a work of art is characterized by dark versus bright colors. Experimental evidence shows that intense brightness, high saturation, and hues that correspond to long wavelengths of light tend to excite a viewer.

**somesthesia (somaesthesia)** *n.* sensitivity to cutaneous, kinesthetic, and visceral stimulation. Also called **somesthesia**. —**somesthetic** *adj.*

**somesthetic disorder** any dysfunction involving the SOMATOSENSES, such as difficulty in maintaining postural or positional awareness or a lack of sensitivity to pain, touch, or temperature. Somesthetic disorders are usually related to PARIETAL LOBE damage.

**somesthetic sense** see SOMATOSENSE.

**somesthetic stimulation** stimulation of kinesthetic, cutaneous, or visceral receptors.

**somnambulism** *n.* see SLEEPWALKING DISORDER.

**somniloquy** *n.* see SLEEP TALKING.

**somnolence** *n.* excessive sleepiness or drowsiness, which is sometimes pathological. The condition may be due, for example, to medication, a sleep disorder, or a medical condition (e.g., HYPOTHYROIDISM). —**somnolent** *adj.*

**somnolentia** *n.* 1. unnatural drowsiness. 2. see CONFUSIONAL AROUSAL.

**somnology** *n.* the study of sleep and sleep disorders. —**somnologist** *n.*

**somnophilia** *n.* an obsolete term for sexual interest and arousal derived from intruding on a sleeping person. It may involve fondling the person or masturbating while watching the person sleep.

**sonant** 1. *n.* a vowel or VOICED consonant that is capable of forming a syllable or the nucleus of a syllable. 2. *n.* a NASAL or LIQUID consonant that functions as a vowel in a particular syllable. Also called **sonorant**. Compare SEMI-VOWEL. 3. *adj.* related to, having, or producing speech sounds.

**Sonata** *n.* a trade name for ZALEPLON.

**sone** *n.* see LOUDNESS.

**song** *n.* in animal behavior, a complex, relatively long sequence of vocalizations that is often stereotyped in its overall structure or sequence of calls. It is used to defend

territories against members of the same sex and species as well as to attract mates. Song is thought to occur primarily in birds, but the term also has been used to describe long acoustic sequences produced by crickets and certain primates (e.g., gibbons). In the northern temperate zone, song is usually seasonal and under the control of gonadal steroids, but in the tropics, there is little evidence of hormonal control.

**sonic boom** a high-pressure acoustic shock wave, often caused by an aircraft or projectile traveling at supersonic speeds.

**Sonic Pathfinder** a trademark for a mobility assistance device, worn on the head, that emits ultrasound and provides feedback through earphones for individuals with visual impairment. Feedback consists of the notes of a musical scale, which make a familiar tonal progression as the user approaches an object. The signal received is restricted to the nearest object to the user or, in certain cases, to the object directly ahead of the user.

**sonography** *n.* see ULTRASOUND.

**sonorant** *n.* see SONANT.

**soothability** *n.* the ability of infants and children to calm down and recover from distress.

**sophistry** *n.* a style of argumentation designed not to arrive at truth but to persuade others that one's position is correct. This is generally accomplished by careful strategic use of language and the skillful use of fallacious arguments (see FALLACY). For example, one common type of sophistry is to represent the other's point of view as more extreme and less plausible than it really is and then attack the extreme version of the position and show that it is wrong. A particular instance of sophistry is called a **sophism**. The term comes from the Sophists, a group of itinerant teachers in Greece in the 5th century BCE who taught and practiced rhetoric.

**sophrosyne** *n.* an ideal of character that was recommended by Greek philosopher PLATO. The word has no direct English equivalent, but it is often translated as "temperance" or "moderation" and carries the sense of being well balanced, prudent, self-disciplined, and sound in judgment.

**sopite syndrome** a form of MOTION SICKNESS that may develop after prolonged exposure to relatively gentle motion or rocking, as experienced in a moving bus or a rocking boat. Symptoms include dizziness, nausea, chronic fatigue, lack of initiative, drowsiness, lethargy, apathy, and irritability. These can persist for prolonged periods even after exposure ceases. [from Latin *sopire*, "to put to sleep"]

**soporific** *n.* an agent capable of producing sleep, particularly a deep sleep. Also called **sopoforic**.

**SOPS** abbreviation for SCALE OF PRODROMAL SYMPTOMS.

**SORC** *n.* an acronym for the four variables employed in behavioral analysis: stimuli (see SITUATIONAL DETERMINANT), ORGANISMIC VARIABLES, responses, and consequences (reinforcement contingencies). A functional analysis of behavior may seek to determine how the presentation of certain stimuli leads to specific responses (perhaps influenced by individual, or organismic, variables), which are followed by consequences that may then reinforce the elicited responses.

**sorcery drug** any of a group of plant alkaloids that includes belladonna, the opium alkaloids, mandrake, aco-

nite, and hemlock. The substances have been chewed, smoked, or brewed into potions since ancient times for purposes of healing or intoxication. Medicinal herbs were usually grown and administered by shamans or native healers; some, such as the opiates and anticholinergics, are used in modern medical pharmacology.

**Sorge** *n.* care (German). The term has gained currency in psychology and philosophy chiefly through its use by German philosopher Martin Heidegger (1889–1976) to denote the uniquely human activity of caring or worrying about things.

**S–O–R psychology** stimulus–organism–response psychology: an extension of the S–R PSYCHOLOGY of behaviorists incorporating the notion of Robert S. WOODWORTH that factors within the organism help determine what stimuli the organism is sensitive to and which responses may occur. The O factors could be biological or psychological. S–O–R psychology has been extended beyond CLASSICAL CONDITIONING and INSTRUMENTAL CONDITIONING to encompass areas such as marketing and consumer behavior. For example, an individual's emotional state when shopping may influence how many products he or she purchases and the particular types or brands.

**sorting test** a format for assessing the ability to conceptualize, often used in adult neuropsychological assessments or in determining a child's level of cognitive development. The participant is asked to arrange an assortment of common objects by category. A common example is the WISCONSIN CARD SORTING TEST.

**sort-recall task** a task used in memory research in which participants, usually children, have the opportunity to sort items into groups before having to recall the items at a later time.

**Sotos syndrome** an autosomal dominant inherited disorder characterized by MACROCEPHALY, distinctive facial features (including wide-set eyes), and learning disabilities or delayed development. Affected infants and children tend to grow quickly and are significantly taller than their siblings and peers, although adult height is usually in the normal range. Also called **cerebral gigantism**; **Nevo syndrome**. [reported in 1964 by Juan Fernandez Sotos (1927– ), U.S. pediatrician]

**soul** *n.* the nonphysical aspect of a human being, considered responsible for the functions of mind and individual personality and often thought to live on after the death of the physical body. The English word corresponds to the Greek *psyche*, often also translated as “mind,” and the Latin *anima*, usually translated as “spirit.” The concept of the soul was present in early Greek thinking and has been an important feature of many philosophical systems and most religions. Some traditional areas of debate have included whether the soul is material or immaterial, whether non-human animals, plants, or seemingly inert natural objects have souls (see PANPSYCHISM), and whether the soul is individual, allowing the personality to persist after death, or whether it is a reflection of a universal “cosmic” soul. Because the existence of the soul has resisted empirical verification, science has generally ignored the concept, and those who adhere to MATERIALISM, POSITIVISM, or REDUCTIONISM reject it absolutely. Despite this, the term survives in the general language to mean the deepest center of a person's identity and the seat of his or her most important moral, emotional, and aesthetic experiences.

**soul image** in the ANALYTIC PSYCHOLOGY of Carl JUNG,

the deeply unconscious portion of the psyche that is composed of the ANIMUS (or male archetype) and ANIMA (or female archetype).

**soul kiss** see FRENCH KISS.

**sound** *n.* variations in pressure that occur over time in an elastic medium, such as air or water. Sound does not necessarily elicit an auditory sensation—infrasound and ultrasound are respectively below and above the audible range of humans—but in psychology sound usually denotes a stimulus capable of being heard by an organism. See AUDIBILITY RANGE.

**sound-attenuating chamber** an enclosure designed to reduce the transmission of sounds produced outside the chamber. Also called **audiometric chamber**. See also ANECHOIC CHAMBER.

**sound cage** a device for measuring sound localization. See AUDITORY LOCALIZATION.

**sound change** in linguistics, a change over the course of time in the phonological patterns of a language. Modern languages have developed from their ancestor languages and become differentiated from other languages in the same family through a series of such changes occurring naturally over many centuries. See GENETIC LINGUISTICS; PROTOLANGUAGE.

**sounding out** see PHONICS.

**sound intensity** the rate of flow of sound energy through a given area, measured in watts per square meter. In practice, sound intensity is seldom directly measured; it is indirectly determined using pressure measurements and often is expressed in DECIBELS. Sound intensity is proportional to the square of sound pressure.

**sound-level meter** a device used to measure sound pressure. The sound pressure is transduced by a microphone, processed, and typically expressed in decibels sound-pressure level (dB SPL; see DECIBEL). Some sound-level meters have frequency-weighting scales to approximate the characteristics of human hearing. The dBC scale gives approximately equal weight across most of the AUDIBILITY RANGE. The dBA scale is thought to better approximate the loudness or noisiness of environmental sounds.

**sound localization** see AUDITORY LOCALIZATION.

**sound pressure** the force per unit area exerted by a sound wave. The pressure is expressed as changes in the ambient or static pressure (e.g., atmospheric pressure), usually as root-mean-square (rms) pressure changes. The unit of measurement of sound pressure is the **pascal** (Pa). Also called **acoustic pressure**. See also DECIBEL.

**sound-pressure level (SPL)** see DECIBEL.

**sound shadow** an area in which sound is blocked by a nontransmitting object, such as the head.

**sound spectrography** the procedure of analyzing a sound source (typically human speech) in terms of its variations in frequency and intensity over time. The visual record so produced is a **sound spectrogram** (often shortened to **spectrogram**), a quasi-three-dimensional representation of sound. The SOUND SPECTRUM, measured over a relatively brief interval, is plotted by the sound spectrograph as a function of time on the *x*-axis while frequency is plotted on the *y*-axis and intensity is depicted by shading or color. A spectrogram provides an imperfect representation of the perceptually relevant aspects of sound.

**sound spectrum** the representation of sound in terms of its frequency composition. Any physically realizable sound and, more generally, any waveform can be represented as a function of time or of frequency. These representations are uniquely related by the Fourier transform or Fourier series (see **FOURIER ANALYSIS**). The spectrum is the frequency-domain representation and consists of the **amplitude spectrum** (or **power spectrum**) and the **phase spectrum**. Both are necessary to describe the sound completely. For example, a sound played backward has the same amplitude spectrum but an altered phase spectrum, and usually the sounds are perceptually very different. Periodic sounds have a **line spectrum** with a nonzero amplitude only at discrete frequencies. Other sounds have a **continuous spectrum**; the spectrum is then described in terms of **spectral density**, which involves units of amplitude or power per hertz. Sound spectra are useful partly because the mammalian auditory system performs an imperfect Fourier analysis. Also called **acoustic spectrum**; **tonal spectrum**. See **TONOTOPIC ORGANIZATION**.

**sound symbolism** see **PHONETIC SYMBOLISM**.

**sour** *adj.* denoting the **TASTE** elicited by acids. Increasing sourness generally occurs with declining pH. Acids are involved in many physiological processes and also characterize unripe or spoiled foods; thus, their detection is essential for an organism's ion **HOMEOSTASIS** and food selection. —**sourness** *n.*

**source amnesia** impaired memory for how, when, or where information was learned despite good memory for the information itself. Source amnesia is often linked to frontal lobe pathology.

**source attractiveness** among **SOURCE FACTORS**, a characteristic denoting the extent to which the source of a persuasive message is seen as physically attractive.

**source confusion** misattribution of the origins of a memory. This may distort eyewitness accounts of the events surrounding a crime. For example, an eyewitness hearing from a police officer that the perpetrator carried a gun may later believe that he or she saw the gun at the crime scene. See also **UNCONSCIOUS TRANSFER**.

**source credibility** among **SOURCE FACTORS**, a characteristic denoting the extent to which the source of a persuasive message is seen as likely to provide accurate information, which is determined by **SOURCE EXPERTISE** and **SOURCE TRUSTWORTHINESS**.

**source expertise** among **SOURCE FACTORS**, a characteristic denoting the extent to which the source of a persuasive message is seen as knowledgeable about the topic of the message. See also **SOURCE CREDIBILITY**.

**source factors** characteristics of the source of a persuasive message that are likely to influence the effectiveness of the message. **SOURCE ATTRACTIVENESS**, **SOURCE CREDIBILITY**, **SOURCE EXPERTISE**, **SOURCE MAJORITY OR MINORITY STATUS**, and **SOURCE TRUSTWORTHINESS** are all source factors.

**source language** **1.** the language (usually a person's native tongue) used as a starting point when attempting to learn or use another language. **2.** the language from which a translation has been or is being made. Compare **TARGET LANGUAGE**.

**source majority or minority status** among **SOURCE FACTORS**, a characteristic indicating (a) that the source of a message holds a position that is shared by a numerical ma-

jority or minority of the population or (b) that the source of a message is a member of a social group that is a numerical majority or minority.

**source memory** memory for the origin of a memory or of knowledge; that is, memory for where or how one came to know what one now remembers. This construct has been expanded to encompass any aspects of context associated with an event, including spatial-temporal, perceptual, or affective attributes. Although the **PREFRONTAL CORTEX** is known to be involved in source memory, its exact contribution remains uncertain. Compare **FACT MEMORY**.

**source monitoring** the process of determining the origins of one's memories, knowledge, or beliefs, such as whether an event was personally experienced, witnessed on television, or overheard. See also **REALITY MONITORING**.

**source trait** in **CATTELL'S PERSONALITY TRAIT THEORY**, any of 16 personality traits, determined by **FACTOR ANALYSIS**, that underlie and determine **SURFACE TRAITS**. Examples are social boldness, dominance, and openness to change. See also **ABILITY TRAIT**; **DYNAMIC TRAIT**; **TEMPERAMENT TRAIT**.

**source trustworthiness** among **SOURCE FACTORS**, a characteristic denoting the extent to which the source of a persuasive message is seen as honest. See also **SOURCE CREDIBILITY**.

**Southern blot** a method of detecting a particular DNA sequence in a mixture of DNA molecules. It involves separating the DNAs with **GEL ELECTROPHORESIS**, blotting the separated DNAs onto nitrocellulose, then using a labeled DNA or RNA probe to hybridize with and highlight the DNA sequence of interest. Compare **NORTHERN BLOT**; **WESTERN BLOT**. [developed in the 1970s by Edwin **Southern** (1938– ), British biochemist]

**SOV** abbreviation for **ALLPORT–VERNON–LINDZEY STUDY OF VALUES**.

**space adaptation syndrome** a type of **MOTION SICKNESS** probably caused by an astronaut's inability to distinguish up from down while in orbit. This confusion results in dizziness and nausea.

**space-based attention** a mode of visual attention operating primarily on a representation of visual space; that is, attention is directed toward spatial locations rather than objects. Compare **OBJECT-BASED ATTENTION**.

**spaced practice** see **DISTRIBUTED PRACTICE**.

**spaced repetition** see **REPETITION EFFECT**.

**space factor** a hypothesized ability, proposed by Louis L. **THURSTONE** in 1938, that accounts for some individual differences in the capacity to perceive and reason about spatial relations. This factor may be related to individual differences in mathematical abilities.

**space motion sickness** a form of **MOTION SICKNESS** experienced during space travel.

**space orientation** see **SPATIAL ORIENTATION**.

**space perception** an awareness, derived from sensory input, of the spatial properties of objects in the environment, including their shape, dimension, and distance.

**space psychology** the application of psychological procedures to the problems of humans functioning in outer space.

**spacing effect** a cognitive phenomenon in which dis-

tributing to-be-learned information across time in short, interrupted study sessions leads to better long-term retention than continuous, massed sessions. In other words, **DISTRIBUTED PRACTICE** is more beneficial than **MASSED PRACTICE**. For example, a student preparing for a Spanish vocabulary exam on Thursday would remember more by studying the Spanish–English word pairs during brief sessions (e.g., 1 hour each) on consecutive prior days (e.g., Monday, Tuesday, and Wednesday) than by cramming study into a single session in one day. The spacing effect has been demonstrated with a wide range of learning paradigms, materials, and participants, but the precise mechanisms underlying it remain unclear. Various explanations have been offered, such as the **consolidation theory**, which proposes that people notice repetitions of items and create a second representation of each item when they encounter it again; the **deficient processing theory**, which suggests that people pay more attention to spaced repetitions of an item because the item is thus not as active in memory; the **encoding variability theory**, which suggests that the contextual information stored with an item varies over time, so that a greater variety of information is stored with spaced presentations, resulting in multiple (or stronger) retrieval routes; and the **study-phase retrieval theory**, which states that people notice repetitions of items and retrieve the earlier presentation of an item when they encounter it again. Also called **distributed-practice effect**. See also **LAG EFFECT**; **PRIMACY EFFECT**; **RECENCY EFFECT**. [first described in 1885 by Hermann **EBBINGHAUS**]

**spandrel** *n.* see **EXAPTATION**.

**span of apprehension** see **APPREHENSION SPAN**.

**spasm** *n.* a sudden, involuntary muscle contraction. It may be continuous or sustained (**TONIC**) or it may alternate between contraction and relaxation (**CLONIC**). A spasm may be restricted to a particular body part; for example, a vaso-spasm involves a blood vessel, and a bronchial spasm involves the bronchi. —**spasmodic** *adj.*

**spasmodic dysphonia** a rare **VOICE DISORDER** with symptoms including momentary periods of uncontrolled vocal spasms, stuttering, tightness in the throat, and recurrent hoarseness. The cause is unknown, but the condition may be attributed to a neurological or physiological disturbance or to psychological factors. Spasmodic dysphonia (formerly known as **spastic dysphonia**) particularly affects public speakers.

**spasmodic fixation** a condition in which an individual is unable to change gaze until the target of fixation is removed. Also called **spasm of fixation**.

**spastic** *adj.* **1.** relating to **SPASM**. **2.** relating to increased muscle tension (see **SPASTICITY**).

**spastic colitis** see **IRRITABLE BOWEL SYNDROME**.

**spastic dysarthria** see **DYSARTHRIA**.

**spastic dysphonia** see **SPASMODIC DYSPHONIA**.

**spastic hemiparesis** partial paralysis on one side of the body complicated by spasticity of the limbs on the affected side, which may be quite painful.

**spasticity** *n.* a state of increased tension of resting muscles resulting in resistance to passive stretching. It is caused by damage to upper **MOTOR NEURONS** and is marked by muscular stiffness or inflexibility and exaggerated **TENDON REFLEXES**.

**spastic paralysis** a condition resulting from damage to

upper **MOTOR NEURONS** and marked by tonic muscle **SPASMS** and increased **TENDON REFLEXES**. Compare **FLACCID PARALYSIS**.

**spastic paraplegia** a form of **PARAPLEGIA** characterized by spasticity of the leg muscles. Also called **tetanoid paraplegia**.

**spatial ability** the skill required to orient or perceive one's body in space or to detect or reason about relationships within or between objects in space. For example, spatial ability is required in map reading and assembling jigsaw puzzles.

**spatial attention** the manner in which an individual distributes attention over a visual scene. Spatial attention is usually directed at the part of the scene on which a person fixates (see **VISUAL FIXATION**). Also called **distributed attention**.

**spatial autocorrelation** a measurement of a variable's association with itself throughout space. Although statistical approaches often assume that measured outcomes are independent of each other, this may not be true for observations made at different locations. For example, measurements made at nearby locations may be closer in value than measurements made at locations farther apart. Spatial autocorrelation thus provides an index of the similarity of objects within an area, the level of interdependence between the variables, and the nature and strength of that interdependence. See also **AUTOCORRELATION**.

**spatial cognition** the collection, organization, use, and revision of information about one's environment. Spatial cognition enables people to manage a multitude of everyday tasks, such as getting to the breakfast table, taking the subway to work, or using a joystick to move a character in a virtual game. It is a complex phenomenon that often extends beyond immediate perception. Indeed, psychologists have found that people build extensive **COGNITIVE MAPS** that they use to think spatially; these maps have a hierarchical structure, such that individuals "see" the major points and then fill in the details. See also **SPATIAL MEMORY**.

**spatial coherence** see **COHERENCE**.

**spatial contrast sensitivity** see **CONTRAST SENSITIVITY**.

**spatial data** any observations or measurements with a direct or indirect reference to a specific location or geographical area.

**spatial density** density that can be changed by altering the amount of space while keeping the number of individuals constant. There is some evidence that the effect of spatial density on **CROWDING** is less than that of **SOCIAL DENSITY**.

**spatial discrimination** the ability to detect differences in the location of stimuli within multidimensional space.

**spatial disorder** a disorder of space perception, usually associated with a lesion of the **PARIETAL LOBE** of the brain. It involves impaired memory for locations, **CONSTRUCTIONAL APRAXIA**, route-finding difficulties, and poor judgment of the localization of stimuli. Individuals may underestimate the distance of far objects, overestimate the distance of near objects, or be unable to align objects according to instructions.

**spatial frequency** the number of repeating elements in a pattern per unit distance. In a simple pattern of alternating black and white vertical bars (an example of a square-



wave grating), the spatial frequency is the number of pairs of black and white bars per degree of visual angle, usually expressed as cycles per degree (cpd). See also CONTRAST SENSITIVITY.

**spatial intelligence** the ability to mentally manipulate objects in space and to imagine them in different locations and positions. It is one of the distinct intelligences in Gardner's MULTIPLE-INTELLIGENCES THEORY and also a primary mental ability (S) in Thurstone's theory of PRIMARY ABILITIES.

**spatial learning** the acquisition of knowledge about the locations of environmental objects and their relative relationships to one another. For example, many nonhuman animals are able to orient within their home range, as demonstrated by their ability when foraging to venture forth and return home in a nonrandom and efficient manner, and they can remember visual or other cues associated with landmarks in order to locate important resources. Spatial learning has been studied for decades in numerous species through the use of MORRIS WATER MAZES, RADIAL MAZES, T MAZES, and other labyrinthine tasks. Although the hippocampus is essential to spatial learning, the cortex of the PARIETAL LOBE, the PRECUNEUS, and other brain structures are selectively involved in the process as well.

**spatial memory** the capacity to remember the position and location of objects or places, which may include orientation, direction, and distance. Spatial memory is essential for ROUTE LEARNING and navigation.

**spatial neglect** see UNILATERAL NEGLECT.

**spatial orientation** the ability to perceive and adjust one's location in space in relation to objects in the external environment. See SPATIAL ABILITY.

**spatial relationships** the three-dimensional relationships of objects in space, such as their distance apart and their position relative to each other. Also called **spatial relations**. See also DEPTH PERCEPTION; SPATIAL ABILITY; SPATIAL INTELLIGENCE.

**spatial summation** a neural mechanism in which an impulse is propagated by two or more POSTSYNAPTIC POTENTIALS occurring simultaneously at different synapses on the same neuron, when the discharge of a single synapse would not be sufficient to activate the neuron. Compare TEMPORAL SUMMATION.

**spatial-temporal reasoning** the ability to conceptualize the three-dimensional relationships of objects in space and to mentally manipulate them as a succession of transformations over a period of time. Spatial-temporal reasoning is a cognitive ability that plays an important role in fields such as architecture, engineering, and mathematics, among others, and in basic tasks such as everyday movement of the body through space.

**spatial threshold** see TWO-POINT THRESHOLD.

**spatial updating** the ability of a moving person to mentally update the locations of objects initially seen, heard, or touched from a different observation point. This cognitive process is crucial for maintaining perceptual stability despite gross and frequent displacements of space following saccadic eye movements (see SACCADE) and other activities. It is an extraordinarily complex phenomenon involving several neural structures, including the HIPPOCAMPUS, the PARIETO-OCCIPITAL SULCUS, the PRECUNEUS, and posterior areas of the PARIETAL CORTEX. See also SPATIAL COGNITION.

**spatial vision** the ability of the eye and brain to encode and represent spatial patterns of light. The mechanisms of spatial vision are critical for all behavior that involves the processing of visual information.

**spaying** *n.* the surgical removal of the ovaries of a female mammal as a sterilization procedure.

**SPC** abbreviation for STATISTICAL PROCESS CONTROL.

**speaking in tongues** see GLOSSOLALIA.

**Spearman–Brown prophecy formula** the mathematical formulation of a basic tenet of CLASSICAL TEST THEORY concerning the length (number of items) of a test and its influence on reliability, whereby increasing the number of items with similar content results in increased reliability for the test, and decreasing the number of items leads to decreased reliability. The formula allows a researcher to estimate the gains or losses in reliability that would occur with changes in test size. Also called **Spearman–Brown prediction formula**. [Charles SPEARMAN; W. Brown, 20th-century British psychologist]

**Spearman correlation coefficient** (symbol:  $\rho$ ;  $r_s$ ) a nonparametric measure of statistical dependence between two variables that were measured on an ORDINAL SCALE; that is, the individual observations (cases) can be ranked into two ordered series. The Spearman correlation coefficient assesses how well the relationship between the variables can be described using a MONOTONIC function. It ranges in value from +1 to -1. Also called **Spearman's rank correlation coefficient**; **Spearman's rho**. [Charles SPEARMAN]

**Spearman's G** in the TWO-FACTOR THEORY of intelligence, GENERAL ABILITY, represented by the factor *g*. [proposed in 1904 by Charles SPEARMAN]

**Spearman's S** in the TWO-FACTOR THEORY of intelligence, a SPECIFIC ABILITY, represented by the factor *s*. [proposed in 1904 by Charles SPEARMAN]

**special-ability test** a focused examination given to determine whether a student possesses any extraordinary or unusual skills, talents, or abilities.

**special aptitude** see SPECIFIC ABILITY.

**special care unit (SCU)** a unit in a health care institution designed to provide specialized care for people with severe problems, such as dementia, head injuries, or spinal cord injuries.

**special child** see CHILD WITH SPECIAL NEEDS.

**special education** specially designed programs, services, and instruction provided to children with learning, behavioral, or physical disabilities (e.g., visual impairment, hearing loss, neurological disorders) to assist them in becoming independent, productive, and valued members of their communities.

**special factor** see SPECIFIC FACTOR.

**special needs** the requirements of individuals with physical, mental, or emotional disabilities or with financial, community-related, or resource disadvantages. Special needs may warrant SPECIAL EDUCATION, training, or therapy.

**special needs child** see CHILD WITH SPECIAL NEEDS.

**special psychiatric rapid intervention team (SPRINT)** a multidisciplinary U.S. Navy team, consisting of psychologists, psychiatrists, social workers, and chap-

lains, that provides short-term mental health and emotional support immediately after a crisis. The team may also provide educational and consultative services to local supporting agencies.

**special school** a facility that provides focused and individualized education for children with disabilities or other disadvantages who are not prepared to cope with the intellectual and social demands in regular school settings.

**speciation** *n.* the formation of new species. The process involves one population splitting into two or more populations that are reproductively isolated from each other. Over time, the accrued genetic differences between these populations become so great as to prevent successful interbreeding.

**species** *n.* in BIOLOGICAL TAXONOMY, the basic unit of classification, consisting of a group of organisms that can interbreed to produce fertile offspring. It is the main subdivision of a GENUS.

**speciesism** *n.* discriminatory, prejudicial, or exploitative practices against nonhuman animals, often on the basis of an assumption of human superiority. See also ANIMAL RIGHTS. —**speciesist** *n., adj.*

**species recognition** the ability to determine whether another individual is from the same or a different species. Species recognition is important in MATE SELECTION to avoid breeding with another species. Cues used for species recognition include species-specific coloration, vocalizations, odors, and behavior.

**species-specific behavior** behavior that is common to nearly all members of a particular species and expressed in essentially the same way. Human language is a prominent example.

**species-specific defense reaction (SSDR)** the characteristic responses of members of a species to aversive stimuli in the absence of previous experience with the stimuli. This bias determines the rate of learning an organism may demonstrate for ESCAPE BEHAVIOR in response to aversive stimuli.

**species specificity of language** the theory that language is an innate characteristic unique to the species *Homo sapiens*. See LANGUAGE-ORIGIN THEORY; TASK SPECIFICITY OF LANGUAGE.

**specific ability** an ability used only for a particular intellectual task or a single test in a battery of tests. It does not correlate with other abilities, as opposed to GENERAL ABILITY, which correlates at least moderately with other abilities. Also called **special aptitude**. See also SPECIFIC FACTOR.

**specific aptitude** see APTITUDE.

**specific-attitudes theory** the viewpoint that certain psychosomatic disorders are associated with particular attitudes. An example is an association between the feeling of being mistreated and the occurrence of hives. See also SPECIFIC-REACTION THEORY.

**specific developmental disorders** disorders in which some distinctive and circumscribed ability or area of functioning fails to develop properly from an early age but the difficulties are not attributable to intellectual disability, autism, or any other condition.

**specific-energy doctrine** the concept that the quality of a sensory experience is determined by the type of sen-

sory receptor and its nerve channels; thus, the sense of pain originates with stimulation of pain receptors, hearing with receptors in the inner ear, and so on. Originally it was supposed that the different sensory channels had different forms of neural energy, but it was later realized that the specificity lies in the connections from sensory receptors to sensory areas in the cerebral cortex. Also called **law of specific nerve energies**. [elaborated in 1838 by Johannes MÜLLER]

**specific exploration** see INSPECTIVE EXPLORATION.

**specific factor (s factor)** **1.** (symbol: *s*) a specialized ability that is postulated to come into play in particular kinds of cognitive tasks. Specific factors, such as mathematical ability, are contrasted with the GENERAL FACTOR (*g*), which underlies every cognitive performance. Also called **special factor**. [proposed in 1904 by Charles SPEARMAN] **2.** in FACTOR ANALYSIS, a LATENT VARIABLE that is significant only to a single MANIFEST VARIABLE. In contrast, a **common factor** pertains to multiple manifest variables.

**specific hunger** hunger for foods that satisfy a biological need for a specific nutrient found in those foods. For instance, a protein-deprived animal will seek protein-rich foods even when more palatable but protein-deficient foods are available.

**specificity** *n.* **1.** the quality of being unique, of a particular kind, or limited to a single phenomenon. For example, a stimulus that elicits a particular response is said to have specificity. **2.** the probability that a test yields a negative diagnosis given that the individual does not have the condition for which he or she is being tested. Compare SENSITIVITY.

**specificity of behavior** **1.** the fact that certain behavior is elicited only by particular stimuli and therefore does not generalize beyond specific situations. **2.** a fixed pattern of expected behavior in a situation.

**specificity theory** a theory holding that the mechanism of pain is—like vision and hearing—a specific modality with its own central and peripheral apparatus. According to this theory, pain is produced by nerve impulses that are generated by an injury and are transmitted directly to a pain center in the brain. Compare GATE-CONTROL THEORY; PATTERN THEORY.

**specific language disability** see LANGUAGE DISABILITY.

**specific language impairment (SLI)** a condition characterized by impaired acquisition and use of oral linguistic abilities in the absence of any neurological damage, sensory deficits, intellectual disability, alterations in physiological mechanisms of speech, severe personality disorders, or environmental factors to account for the disturbance. In other words, children with SLI have difficulty understanding and using words in sentences, particularly complex sentences, for no identifiable reason. Such individuals acquire spoken language skills significantly later than is typical and have varying degrees of difficulty with phonology (word sounds), semantics (word meaning), syntax (word arrangement), and pragmatics (word function). For example, they tend to have limited vocabularies; to omit tense markers, such as the past tense *-ed* or the third person present *-s*; to make case errors on pronouns (e.g., *him go there* instead of *he goes there*); and to omit the verb *to be* when functioning as auxiliary or copula (e.g., *He running* rather than *he is running* or *John big* rather than *John is big*). Additionally, children with SLI often have difficulties on tasks

assessing short-term AUDITORY MEMORY, such as nonword repetition and sentence repetition, and frequently have literacy problems as well, exhibiting impairments in areas such as reading accuracy, reading comprehension, and spelling. The causes of SLI are unknown, but GENE LINKAGE mapping, twin studies, and family studies suggest strong heritability of the disorder, and several BRAIN IMAGING studies have found a reduction or reversal of the normal leftward asymmetry in language-related brain centers (notably the PLANUM TEMPORALE and BROCA'S AREA) of individuals with SLI. Affecting around 7% of children, SLI is equivalent to the *DSM-IV-TR* diagnostic categories of EXPRESSIVE LANGUAGE DISORDER and MIXED RECEPTIVE-EXPRESSIVE LANGUAGE DISORDER. Throughout the years, the condition has been known by a variety of other names as well, including DEVELOPMENTAL DYSPLASIA, DEVELOPMENTAL LANGUAGE DISORDER, **language delay**, and **language learning disability (LLD)**.

**specific learning disability (SLD)** a substantial deficit in scholastic or academic skills that does not pervade all areas of learning but rather is limited to a particular aspect, such as reading or arithmetic difficulty. In U.S. federal legislation, this term is used interchangeably with LEARNING DISABILITY.

**specific learning disorder** see LEARNING DISORDER. See also DISORDER OF WRITTEN EXPRESSION; MATHEMATICS DISORDER; READING DISORDER.

**specific nerve energies** see SPECIFIC-ENERGY DOCTRINE.

**specific phobia** an ANXIETY DISORDER, formerly called **simple phobia**, characterized by a marked and persistent fear of a specific object, activity, or situation (e.g., dogs, blood, flying, heights). The fear is traditionally defined as excessive or unreasonable and is invariably triggered by the presence or anticipation of the feared object or situation, which is either avoided or endured with marked anxiety or distress. In *DSM-IV-TR*, specific phobias are classified into five subtypes: (a) **animal type**, which includes fears of animals or insects (e.g., cats, dogs, birds, mice, ants, snakes); (b) **natural environment type**, which includes fears of entities in the natural surroundings (e.g., heights, storms, water, lightning); (c) **blood-injection-injury type**, which includes fears of seeing blood or an injury and of receiving an injection or other invasive medical procedure; (d) **situational type**, which includes fear of public transportation, elevators, bridges, driving, flying, enclosed places (see CLAUSTROPHOBIA), and so forth; and (e) **other type**, which includes fears that cannot be classified under any of the other subtypes (e.g., fears of choking, vomiting, or contracting an illness; children's fears of clowns or loud noises). *DSM-5* retains these subtypes, but it omits the traditional characterization that each fear type must be excessive or unreasonable to meet diagnostic criteria, stipulating instead that the fear must arise out of proportion to the actual danger posed by the feared object or situation or to its context. A fear of loud noises, for example, would be considered understandable if experienced in the context of a war zone and thus would not qualify as a specific phobia.

**specific-reaction theory** a concept that an innate tendency of the autonomic nervous system to react in a particular way to a stressful situation accounts for psychosomatic symptoms. See also SPECIFIC-ATTITUDES THEORY.

**specific-status characteristic** in EXPECTATION-STATES THEORY, any of various behavioral and personal

characteristics relevant to the setting that people intentionally and unintentionally take into account when making judgments of their own and others' competence, ability, and social value. Compare DIFFUSE-STATUS CHARACTERISTIC.

**specific thalamic projection system** the direct sensory pathways via the THALAMUS for visual, auditory, and somesthetic impulses; that is, neurons that project to the thalamus from specific receptors and then from the thalamus to each of the specific sensory cortices.

**specific transfer** transfer of skills and knowledge acquired in one task to a similar task in which they are directly relevant. Compare GENERAL TRANSFER.

**specific variance** in FACTOR ANALYSIS, the systematic variability that is specific to a particular variable and not shared with other variables. Specific variance contrasts with COMMUNALITY, the variability that a single variable shares with one or more of the other variables in the analysis, and RANDOM ERROR, the unsystematic variability specific to a particular variable.

**specious present** the lived present, experienced as a distinct "moment" characterized by certain sense impressions and mental events. This sense of inhabiting a particular moment known as the present is psychologically strong but actually specious, because (a) time is continuous and ongoing and (b) the present instant is so infinitely short that it cannot be experienced. See also CONSCIOUS MOMENT; PSYCHOLOGICAL MOMENT; TIMELESS MOMENT. [introduced in 1882 by E. R. Clay (pseudonym for Irish-born U.S. philosopher E. Robert Kelly) and further developed by William JAMES]

**SPECT** acronym for SINGLE PHOTON EMISSION COMPUTED TOMOGRAPHY.

**spectator effect** the effect on performance when a task is carried out in the presence of others. When an individual is confident of being able to perform the task (i.e., has high task confidence), spectators improve performance; when task confidence is low, they worsen it.

**spectator role** a behavior pattern in which one's natural sexual responses are blocked by performance anxiety. It involves observing oneself closely and worrying about how well or poorly one is performing sexually, rather than participating fully in the sexual activity; this prevents sexual arousal from occurring. [first described by U.S. sex researchers William H. Masters (1915–2001) and Virginia E. Johnson (1925–2013)]

**spectator therapy** the beneficial effect on group-therapy members of observing the therapy of fellow members with similar or related problems.

**spectral absorption** the ability of chemicals to absorb light of specific wavelengths. This is determined by passing lights of nearly pure wavelengths through solutions of the chemicals and measuring the amount of light absorbed. In visual spectral absorption, the principle is applied by measuring the degree to which different wavelengths of light alter retinal photopigment molecules.

**spectral color** any one of the colors of the visible spectrum, produced when white light is refracted by a prism. The visible spectrum can be divided into some 130 distinguishable spectral colors by human observers. Also called **spectral hue**. Compare EXTRASPECTRAL HUE.

**spectral density** see SOUND SPECTRUM.

**spectral envelope** see ENVELOPE.

**spectrally opponent cell** a type of neuron in the visual system that is excited by light in certain regions of the visible SPECTRUM and inhibited by light in other regions.

**spectral scale** a scale that depicts the colors of the spectrum for light of different wavelengths or frequencies by just noticeable differences (see DIFFERENCE THRESHOLD).

**spectral sensitivity** the relative degree to which light of different wavelengths is absorbed by the photopigments of the retina. Each type of photoreceptor (i.e., rod or cone) has its own characteristic spectral sensitivity.

**spectrogram** *n.* see SOUND SPECTROGRAPHY.

**spectroscopy** *n.* the study of the SPECTRUM of electromagnetic radiation, especially the visible spectrum, as it interacts with matter. The interpretation of the spectra so produced is used in chemical analysis, in examining molecular structure, and for many other purposes. Spectroscopy is performed using **spectroscopes**, **spectrometers**, or **spectrophotometers**.

**spectrum** *n.* (*pl.* **spectra**) **1.** a distribution of electromagnetic energy displayed by decreasing wavelength. In the case of the **visible spectrum**, it is the series of visible colors (with wavelengths in the range 400–700 nm) produced when white light is refracted through a prism. **2.** a wide range of associated elements, qualities, actions, or occurrences. —**spectral** *adj.*

**spectrum level** the power per hertz of a sound, usually expressed in DECIBELS sound-pressure level (dB SPL). For a waveform with a continuous spectrum, the **power spectral density** is the power contained in the sound's bandwidth at a specific frequency *f* as the change in *f* approaches zero.

**spectrum of consciousness** **1.** in TRANSPERSONAL PSYCHOLOGY, the full range of human psychological and spiritual experiences concomitant with states of mind. **2.** in neurology and neuroscience, the full range of awareness or arousal. See CONSCIOUSNESS.

**speculation** *n.* **1.** conjectural thinking that is not necessarily supported by scientifically determined evidence. **2.** a loosely supported theory or explanation. —**speculative** *adj.*

**speculative psychology** a view of a psychological subject or issue that is based on conjecture or unsupported theory rather than experimental or research evidence. See ARMCHAIR PSYCHOLOGY; RATIONAL PSYCHOLOGY.

**speech** *n.* the product of oral–motor movement resulting in articulation of language: the utterance of sounds and words.

**speech act** an instance of the use of speech considered as an action, especially with regard to the speaker's intentions and the effect on a listener. A single utterance usually involves several simultaneous speech acts (see ILLOCUTIONARY ACT). The study of speech acts is part of the general field of PRAGMATICS.

**speech-activated control** the use of voice commands to initiate functions of or input information to a device. An example is dialing a phone by speaking the number. Also called **voice-activated control**.

**speech amplification system** a system consisting of a microphone attached to a headset and a small amplifier designed to increase the volume of the voice of an individ-

ual who is unable to speak loudly because of a voice disorder or respiratory problem.

**speech and language disorder** any disorder that affects oral or written communication. A **speech disorder** is one that affects the production of speech, potentially including such problems as poor audibility or intelligibility; unpleasant tonal quality; unusual, distorted, or abnormally effortful sound production; lack of conventional rhythm and stress; and inappropriateness in terms of age or physical or mental development. A **language disorder** is one that affects the expression or reception (comprehension) of ideas and feelings, potentially including such problems as reduced vocabulary, omissions of articles and modifiers, understanding of nouns but not verbs, difficulties following oral instructions, and syntactical errors. Although speech disorders and language disorders are two distinct entities, they often occur together and thus generally are referred to together.

**speech and language pathology** **1.** inadequate or maladaptive communication behavior and disorders of speech, language, and hearing. **2.** the clinical field focused on the study, evaluation, and treatment of speech, voice, and language disorders.

**speech and language therapy** see SPEECH THERAPY.

**speech anxiety** see PUBLIC-SPEAKING ANXIETY.

**speech aphasia** a less common name for expressive APHASIA.

**speech apraxia** see APRAXIA.

**speech area** any of the areas of the cerebral cortex that are associated with language perception and production, either oral or written. The speech production (output) areas tend to be located in the left hemisphere in BROCA'S AREA. Speech perception and comprehension tend to be more bilateral, involving WERNICKE'S AREA in the temporal lobe. Activation maps for speech show widely regional distribution with some overlap in the classical language regions of the cortex.

**speech audiometry** the measurement of hearing in terms of the reception of spoken words presented at controlled levels of intensity.

**speech community** a group of people who speak a particular language or variety of a language (e.g., a dialect).

**speech derailment** see DERAILMENT.

**speech development** see LANGUAGE DEVELOPMENT.

**speech discrimination test** a phonetically balanced word list used to measure an individual's ability to understand speech.

**speech error** see SLIP OF THE TONGUE.

**speech functions** the various purposes for which spoken language is used, primarily the communication of ideas or information, the maintenance of social relationships, and the expression of feelings or emotions.

**speech impairment** any problem that affects the production of speech. The term is occasionally used as a synonym for **speech disorder** (see SPEECH AND LANGUAGE DISORDER).

**speech impediment** popularly, any speech impairment or disorder. The term is no longer used in formal research or therapeutic practice.

**speech intelligibility** the degree to which speech

sounds (whether conversational or communication-system output) can be correctly identified and understood by listeners in a particular environment. Background or other system noise is one of the most important factors influencing speech intelligibility. See also ARTICULATION INDEX.

**speech, language, and hearing center** a professionally staffed clinic or facility offering diagnostic and treatment services to people with communication impairments. The staff typically consists of experts in audiology, speech and language pathology, and speech and hearing sciences. Also called **community speech and hearing center**.

**speech lateralization** hemispheric asymmetry in the control of speech production. For most individuals, speech production is located in the left cerebral hemisphere. See also LANGUAGE LOCALIZATION; SPEECH AREA; WADA TEST.

**speech origin** see LANGUAGE-ORIGIN THEORY.

**speech perception** the process in which a listener decodes, combines, and converts an incoming stream of otherwise meaningless sound created by the SPEECH PRODUCTION process into a meaningful sequence and phonological representation.

**speech processor** a device that converts microphone or other input into patterns of electrical stimulation. For example, the processor in a COCHLEAR IMPLANT converts sounds into electrical impulses to stimulate the auditory nerve, thus enabling comprehension of sound and speech.

**speech production** the psychophysical and neurophysiological processes by which a person uses his or her neural, articulatory, and respiratory capacities to generate spoken language.

**speechreading** *n.* see LIPREADING.

**speech-reception threshold (SRT)** the sound intensity in DECIBELS sound-pressure level (dB SPL) at which speech is just intelligible.

**speech recognition system** a computer software program capable of recognizing and responding to human speech. Such programs enable users to control computers and create and manipulate documents by dictation, which is especially important for individuals with disabilities who are unable to provide commands and data input with devices such as a keyboard, touch pad, or mouse.

**speech rehabilitation** training to restore a lost or impaired speech function. Also called **speech reeducation**.

**speech sound disorder** in DSM-5, the term for PHONOLOGICAL DISORDER.

**Speech Sounds Perception Test** a test in the HALSTEAD-REITAN NEUROPSYCHOLOGICAL BATTERY used to measure a person's ability to match a spoken nonsense word containing a double *e* (such as *teeg*) with its written counterpart.

**speech synthesizer** a computer or other system capable of producing artificial speech. Synthesizers may produce speech in response to input (e.g., from a keyboard or touch pad), or they may convert written text into speech. See also AUDIOTACTILE DEVICE.

**speech therapy** the application of remedies, treatment, and counseling for the improvement of speech and language. Also called **speech and language therapy**.

**speech-tolerance level** the DECIBELS sound-pressure

level (dB SPL) at which continuous speech is judged to be uncomfortably loud.

**speech-to-noise ratio** see SIGNAL-TO-NOISE RATIO.

**speed** *n.* slang for an amphetamine, especially METHAMPHETAMINE.

**speed-accuracy tradeoff** the tendency, when performing a task, for either speed or accuracy to be sacrificed in order to prioritize the other. In experiments, a researcher may vary the speed-accuracy criterion through instructions, payoffs, and deadlines, such that participants can respond quickly with many errors, slowly with few errors, or anywhere in between. In the area of motor control, FITTS'S LAW is a specific example of a speed-accuracy tradeoff.

**speedball** *n.* a colloquial name for a mixture of heroin and a powerful stimulant (e.g., cocaine or an amphetamine).

**speed dating** an approach to dating developed in the 1990s in which potential daters engage in a series of brief one-on-one encounters with other potential daters, after which each person indicates in a confidential manner whether he or she is interested in future dates with each of the people met. Only when both answer in the affirmative is contact information exchanged. Typical speed-dating events allow participants to interact with approximately 6 to 10 potential dates for 3 to 8 minutes each. The primary rationale underlying speed dating is that certain important determinants of attraction can be evaluated only in face-to-face interactions and that very brief interactions (sometimes called THIN SLICES OF BEHAVIOR) are sufficient for conveying information about these determinants to potential daters.

**speed test** a type of test used to calculate the number of problems or tasks the participant can solve or perform in a predesignated block of time. The participant is often, but not always, made aware of the time limit. Compare POWER TEST.

**spell** *n.* **1.** a hypnotic influence or any influence of one person over another considered similarly powerful and hard to explain. **2.** a magical incantation or a curse. **3.** a lay term for an episode of a physical or mental disorder.

**spelling dyslexia** a type of VISUAL WORD-FORM DYSLEXIA manifested by letter-by-letter reading. For example, an affected individual reading the word *dog* would say, "D-O-G spells *dog*." Such individuals may have normal spelling and writing ability but cannot read back what they have written down. In most cases, they have lesions located near the junctions of the occipital, temporal, and parietal lobes (the left ANGULAR GYRUS) of the brain. Modern imaging studies also implicate these regions in word recognition.

**sperm** *n.* see SPERMATOZOON.

**sperm analysis** the evaluation of male fertility according to sperm count per milliliter of ejaculate and sperm morphology (i.e., form and structure) and motility. Also called **seminal analysis**.

**spermarche** *n.* a male's first ejaculation of semen. Also called **semenarche**.

**spermatic duct** see VAS DEFERENS.

**spermatocyte** *n.* a cell that emerges during an intermediate stage of SPERMATOGENESIS in the male testis.

**spermatogenesis** *n.* the production of spermatozoa in the seminiferous tubules of the TESTIS. Male germ cells

(**spermatogonia**; *sing.* **spermatogonium**) lining the seminiferous tubules mature into **primary spermatocytes**, which undergo MEIOSIS to eventually result in mature spermatozoa (four per spermatocyte). In the first meiotic division, each primary spermatocyte gives rise to two HAPLOID **secondary spermatocytes**, each of which then undergoes a further division to form two **spermatids**. The latter, attached to SERTOLI CELLS, mature into spermatozoa. The process is controlled by pituitary GONADOTROPINS, which promote the release of testosterone from the interstitial cells of the testis, which in turn stimulates sperm production. Spermatogenesis is continuous in human males after the onset of puberty and seasonal in some other animal species. —**spermatogenetic** *adj.*

**spermatorrhea** *n.* the involuntary discharge of semen in the absence of orgasm.

**spermatozoon** *n.* (*pl.* **spermatozoa**) a single male GAMETE that develops from a secondary spermatocyte following its development from spermatogonia of the seminiferous tubules. A spermatozoon fuses with a female gamete (see OVUM) in the process of fertilization. Also called **sperm**. See also SPERMATOGENESIS.

**sperm competition** competition between the sperm of different males to fertilize the eggs of females that mate with multiple males. Among nonhuman animals, males have several strategies for dealing with sperm competition, including MATE GUARDING, leaving an ejaculatory plug in the female genitalia to prevent other males from mating, or removing sperm from previous males prior to mating. Females have tactics to counter these strategies (see CRYPTIC FEMALE CHOICE). In the marmoset monkey of Brazil, for example, males produce sperm plugs that block the vagina, but both females and other males can remove these plugs.

**spherical aberration** the failure of light rays to converge at the same focal point because of the curvature of a lens. See also ASTIGMATISM.

**spherical lens** a lens in which either or both of the surfaces are portions of a sphere.

**sphericity** *n.* an assumption, encountered in a WITHIN-SUBJECTS ANALYSIS OF VARIANCE of data obtained from the same individuals on multiple occasions, requiring the variations among each individual's set of scores to be equal or the correlations among all time points to be constant. Results from analyses of variance that violate sphericity require adjustments to compensate for an increased propensity of the researcher to draw invalid conclusions by making a TYPE II ERROR.

**sphincter** *n.* a ring-shaped muscle that partly or wholly closes a body orifice, such as the anal sphincters or the IRIS of the eye.

**sphincter control** the ability to control the muscles that open and close the openings of the body, particularly the anal and urinary sphincters. Acquiring this ability is an important stage in physical development. See DEFECATION REFLEX; TOILET TRAINING.

**sphincter morality** in psychoanalytic theory, personality characteristics and behaviors, such as obstinacy, extreme orderliness, and parsimony, that are associated with an anal-retentive personality. See ANAL PERSONALITY.

**sphingomyelin** *n.* a phospholipid that occurs abundantly in animal cell membranes. It makes up about one tenth of the lipids of the brain.

**sphingomyelin lipidosis** see NIEMANN–PICK DISEASE.

**sphygmograph** *n.* an instrument for measuring the strength, rapidity, and other characteristics of the pulse.

**sphygmomanometer** *n.* see BLOOD PRESSURE.

**spice** *n.* a CANNABIS-like drug that consists of dried leaves sprayed with synthetic chemicals and that is sold as incense. Also called **K2**.

**spicy** *adj.* **1.** denoting the taste of highly flavored foods. Spiciness is conveyed mainly through activity of the trigeminal nerve (see TRIGEMINAL CHEMORECEPTION) rather than the GUSTATORY SYSTEM. **2.** denoting one of the primary odor qualities in HENNING'S ODOR PRISM. —**spiciness** *n.*

**spider phobia** a persistent and irrational fear of spiders. Situations in which spiders may be encountered are often avoided or else endured with intense anxiety or distress. In DSM–IV–TR and DSM–5, spider phobia is classified as a SPECIFIC PHOBIA, animal type. Also called **arachneophobia**; **arachnophobia**. See also ANIMAL PHOBIA.

**spike** *n.* **1.** in BEHAVIORAL NEUROSCIENCE, a train of electrical signals recorded from an individual neuron in the brain. Spikes are the ACTION POTENTIALS or signals generated by neurons to communicate with one another. **2.** in a TIME-SERIES ANALYSIS, a point in time at which there is a sharp increase followed by a rapid decrease in measurements on the DEPENDENT VARIABLE.

**spike-and-wave discharges** a pattern of BRAIN WAVES on an electroencephalogram (see ELECTROENCEPHALOGRAPHY) that is characteristic of ABSENCE SEIZURES. It consists of a sharp spike followed by a low-amplitude DELTA WAVE and occurs at a frequency of three per second.

**spike potential** see ACTION POTENTIAL.

**spike-wave activity** the pattern produced by an ACTION POTENTIAL of a neuron when amplified and projected onto the screen of an OSCILLOSCOPE or a computer monitor. The waveform appears as a sharp, high peak, followed by a short dip below the baseline (the AFTERPOTENTIAL), then a return to the predischarge level. The amplitude of the wave spike indicates the intensity of the discharge.

**spina bifida** any developmental anomaly in which the vertebral canal fails to close normally around the spinal cord; it is a NEURAL TUBE defect. Individuals with spina bifida have difficulty with sensation, ambulation, and bowel and bladder control; experience weakness or paralysis of the muscles of the legs or feet; and are susceptible to infection. MENINGOMYELOCELE is the most common form of spina bifida.

**spinal animal** a nonhuman animal whose spinal cord has been surgically severed and therefore separated from communication with its brain, so that peripheral processes of the body are controlled only by the spinal cord and nerves.

**spinal canal** the passage that runs through the SPINAL COLUMN and contains the spinal cord.

**spinal column** the backbone, consisting of a series of bones (vertebrae) connected by disks of cartilage (intervertebral disks) and held together by muscles and tendons. It extends from the cranium to the coccyx, encloses the spinal cord, and forms the main axis of the body. Also called **spine**; **vertebral column**.

**spinal cord** the part of the central nervous system that extends from the lower end of the MEDULLA OBLONGATA, at

the base of the brain, through a canal in the center of the spine as far as the lumbar region. In transverse section, the cord consists of an H-shaped core of gray matter (see PERIAQUEDUCTAL GRAY; ANTERIOR HORN; DORSAL HORN) surrounded by white matter consisting of tracts of long ascending and descending nerve fibers on either side of the cord that are linked by the WHITE COMMISSURE. The spinal cord is enveloped by the MENINGES and is the origin of the 31 pairs of SPINAL NERVES. See also SPINAL ROOT.

**spinal cord disease** any pathological condition caused by infection, injury, or a congenital defect of the spinal cord. Examples include Brown-Séquard's syndrome, Horner's syndrome, spinal meningitis, amyotrophic lateral sclerosis, multiple sclerosis, and syringomyelia.

**spinal cord injury** any damage to the spinal cord caused by sudden or progressive external forces. Spinal cord injuries include contusion (bruising), hemorrhage, laceration, transection, and compression. See also INCOMPLETE SPINAL CORD INJURY; RADICULOPATHY; SLIPPED DISK.

**spinal ganglion** a collection of cell bodies of sensory neurons found in the DORSAL ROOT of each SPINAL NERVE.

**spinal gate** in GATE-CONTROL THEORY, a neural pathway in the spinal cord that regulates pain perception by opening and closing, thereby allowing or not allowing pain signals to excite DORSAL HORN transmission neurons. According to the theory, the gate can be influenced by physical, emotional, and behavioral factors. See also GATING MECHANISM.

**spinal muscular atrophy (SMA)** a hereditary (autosomal) MOTOR NEURON DISEASE characterized by wasting (atrophy) of skeletal muscles associated with degeneration of nerve cells in the ANTERIOR HORN of the spinal cord. There are three common types, based on age of onset and symptom severity. Type I (also called **Werdnig-Hoffmann disease**) is evident at birth or within the first few months of life and is the most severe, resulting in death usually prior to age 2. Type II has an onset of symptoms between 6 months and 2 years and results in delayed motor development, progressive loss of strength, and variable loss of ambulation. Type III (also called **Kugelberg-Welander disease**) is identified between ages 1 and 15 and is the least severe, associated with slower progression and lower incidence. There is also a Type IV (also called **Aran-Duchenne disease**), with an onset typically after age 30 and symptoms ranging from mild to severe. Also called **progressive muscular atrophy**; **progressive spinal muscular atrophy**.

**spinal nerve** any of the 31 pairs of nerves that originate in the gray matter of the SPINAL CORD and emerge through openings between the vertebrae of the spine to extend into the body's dermatomes (skin areas) and skeletal muscles. The spinal nerves comprise 8 cervical nerves, 12 thoracic nerves, 5 lumbar nerves, 5 sacral nerves, and 1 coccygeal nerve. Each attaches to the spinal cord via two short branches, a DORSAL ROOT and a VENTRAL ROOT. See also SPINAL ROOT.

**spinal reflex** an automatic response controlled solely by neural circuits in the spinal cord, often relating to posture or locomotion. They are sometimes classed as **segmental reflexes**, if the circuit involves only one segment of the spinal cord, or as **intersegmental reflexes**, if the impulses must travel through more than one spinal segment. Reflexes that require brain activity are **suprasegmental reflexes**.

**spinal root** the junction of a SPINAL NERVE and the SPINAL CORD. Near the cord, each spinal nerve divides into a DORSAL ROOT carrying sensory fibers and a VENTRAL ROOT carrying motor fibers, as stated by the BELL-MAGENDIE LAW.

**spinal shock** a temporary loss of reflex functions below the site of an injury to the spinal cord.

**spinal stenosis** see STENOSIS.

**spinal tap** see LUMBAR PUNCTURE.

**spindle cell** a type of small neuron whose CELL BODY is spindle shaped, being wider in the middle and tapering at the two ends. It should not be confused with a MUSCLE SPINDLE.

**spindle waves** electroencephalogram patterns associated with light sleep. See SLEEP SPINDLES.

**spine** *n.* see SPINAL COLUMN.

**spinocerebellar tract** a major bundle of nerve fibers that carries impulses from the muscles and other PROPRIOCEPTORS through the spinal cord to the CEREBELLUM.

**spinocerebellum** see PALEOCEREBELLUM.

**spinomesencephalic tract** see ANTEROLATERAL SYSTEM.

**spinoreticular tract** see ANTEROLATERAL SYSTEM.

**spinothalamic tract** either of two ascending pathways for somatosensory impulses that travel through the spinal cord to the thalamus. They are part of the ANTEROLATERAL SYSTEM. The **anterior spinothalamic tract** serves touch and pressure sensations; the **lateral spinothalamic tract** carries principally pain and temperature information.

**spiral ganglion** the mass of cell bodies on the inner wall of the COCHLEA, near the organ of Corti, whose axons form the AUDITORY NERVE.

**spiral test** a type of intelligence assessment in which the focused themes being evaluated are distributed throughout the test, instead of being grouped together, and become increasingly difficult as the test progresses. Each subsequent spiral of difficulty covers a different domain of intelligence.

**spirit** *n.* **1.** the nonphysical part of a person: the mental, moral, and emotional characteristics that make up the core of someone's identity. **2.** a vital force seen as animating the bodies of living creatures, sometimes identified with the SOUL and seen as surviving death. **3.** an immaterial being, such as a ghost or a deity. **4.** in idealist philosophies, a universal mind or idea seen as a fundamental reality and a moving force of events in the world. See ABSOLUTE IDEALISM. **5.** the mood, temper, or disposition that temporarily or permanently characterizes a person. **6.** courage or morale.

**spiritism** *n.* see SPIRITUALISM.

**spirit photography** the attempt, popular in the late 19th century, to render visible the spirits of deceased individuals by photography. In particular, it was claimed that spirits often left faint imprints on photographs of their loved ones. The first alleged spirit photograph was produced in 1862 by the U.S. engraver William H. Mumler, who was subsequently tried (inconclusively) for fraud. Most of the supposed spirit images produced at this time seem to have been created using a simple process of double exposure or specially prepared plates.

**spiritual factor** any moral, religious, or mystical belief

that plays a role in influencing behavior, emotions, or thoughts.

**spiritual healing** see FAITH HEALING.

**spiritualism** *n.* **1.** in metaphysics, the position that the fundamental reality of the universe is nonmaterial. **2.** the belief that the spirits of the dead survive in another world or dimension and that it is possible for the living to receive communications from them through MEDIUMS. With MAGIC and the OCCULT arts, spiritualism may be considered the philosophical and religious counterpart to PARAPSYCHOLOGY. Also called **spiritism**. **3.** the belief that all human and nonhuman animals, plants, and natural objects possess souls and are part of a larger, universal spirit. See PANPSYCHISM. —**spiritualist** *adj., n.* —**spiritualistic** *adj.*

**spirituality** *n.* **1.** a concern for or sensitivity to things of the SPIRIT or SOUL, especially as opposed to materialistic concerns. **2.** more specifically, a concern for God and a sensitivity to religious experience, which may include the practice of a particular RELIGION but may also exist without such practice. **3.** the fact or state of being incorporeal.

**spiritual self** see EMPIRICAL SELF.

**spiograph** *n.* an instrument for measuring and recording breath rate and volume.

**spirometer** *n.* an instrument used for measuring the air capacity in the lungs. In speech therapy, it may be used to record breathing functions associated with speech production.

**SPL** abbreviation for sound-pressure level. See DECIBEL.

**splanchnic** *adj.* denoting the abdominal organs or VISCERA. In combination with a qualifying prefix, this word is used in the names of various body types to indicate the abdomen (e.g., MACROSPLANCHNIC TYPE, MICROSPLANCHNIC TYPE).

**splanchnic nerve** any of certain nerves that serve the abdominal VISCERA. They originate in the ganglia of the SYMPATHETIC CHAIN.

**spleen** *n.* **1.** an organ that produces lymphocytes, filters and stores blood, and destroys old red blood cells. Although it is not necessary to maintain life, the absence of a spleen may predispose an individual to certain infections. **2.** bad temper or ill will. **3.** an old term for melancholy or depression.

**splenium** *n.* (*pl.* **splenia**) a blunt enlargement at the posterior end of the CORPUS CALLOSUM.

**spline function** a smoothed mathematical representation of a disjointed or disaggregated relationship between an INDEPENDENT VARIABLE (*x*) and a DEPENDENT VARIABLE (*y*), in which values of *y* vary sharply for different intervals of *x*. Each range of *x* thus has a different SLOPE, and spline functions are formed by joining piecewise polynomials at fixed points called *knots*. Spline functions (or **splines** for short) are useful for fitting data that have random components, and they are widely used for interpolation and approximation of data sampled at a discrete set of points (e.g., for TIME-SERIES interpolation).

**split-ballot technique** a procedure in which a sample is randomly divided into halves and each half receives a slightly different version of a questionnaire or survey designed to measure the same construct. The technique can be used to determine whether different versions of the survey have different outcomes (e.g., whether positioning of

items on the questionnaire makes a difference in the outcomes). Also called **split-half method**.

**split brain** a brain in which the two cerebral hemispheres have been separated by partial or complete destruction of the corpus callosum (see COMMISSUROTOMY), thereby blocking direct communication between them. Split-brain surgery is used to treat otherwise intractable epilepsy, because it prevents cortical seizure activity from spreading between the hemispheres. Given the extensive communication between the two hemispheres in the intact brain, disruption of this activity in split-brain conditions is of considerable scientific interest. Also called **divided brain**.

**split-brain technique** see COMMISSUROTOMY.

**split-half reliability** a measure of the internal consistency of surveys, psychological tests, questionnaires, and other instruments or techniques that assess participant responses on particular constructs. Split-half reliability is determined by dividing the total set of items (e.g., questions) relating to a construct of interest into halves (e.g., odd-numbered and even-numbered questions) and comparing the results obtained from the two subsets of items thus created. The closer the correlation between results from the two versions, the greater the INTERNAL CONSISTENCY of the survey or instrument. The RELIABILITY of the total survey can be determined by applying the SPEARMAN-BROWN PROPHECY FORMULA.

**split-litter design** in animal research, the assignment of litter mates to different groups in an experiment (e.g., the experimental group and the control group) to minimize genetic differences in the study. Also called **split-litter technique**.

**split personality** a lay term for an individual with DISOCIATIVE IDENTITY DISORDER. It is sometimes confused with SCHIZOPHRENIA, which literally means “splitting of the mind” but does not involve the formation of a second personality.

**split-plot design** a variation of a full FACTORIAL DESIGN in which one of the INDEPENDENT VARIABLES is held constant while all other combinations of conditions are examined, often using different sample sizes or different randomization schemes. For example, consider a researcher examining the influence on crop yield of four different types of corn seed, three different types of fertilizer, and two different types of planting technique. He or she could have half of the participating farmers plant all of the seed types using one technique and the other half plant all of the seed types using the second technique. Split-plot designs are particularly common in agricultural and industrial contexts, in which certain conditions may be difficult to manipulate or change for experimental purposes. Data from such designs may be examined with a **split-plot analysis of variance**.

**split recovery** a statute in which the plaintiff in a civil lawsuit is obligated to share his or her PUNITIVE DAMAGES with the state, which puts the money toward some cause intended to benefit society as a whole (e.g., a government medical assistance fund). The concept of split recovery is intended to address the common criticism that punitive damages tend to be excessive and provide a windfall for plaintiffs, which is contrary to their primary purpose of punishing defendants to deter future misconduct. Many argue that if punitive awards are intended to protect the public by discouraging socially impermissible conduct,



then these awards should be split between the plaintiff and society at large. Currently, eight states have split recovery, although how much money each receives and how it is distributed varies widely. For example, in Alaska 50% of the plaintiff's punitive award is given to the state and placed in its general treasury fund, whereas in Illinois the specific arrangements are determined on a case-by-case basis entirely at the discretion of the trial judge. Also called **alternative distribution**; **restricted recovery**; **split award**. See also CURATIVE DAMAGES.

**split run** a method of testing the effectiveness of advertising and other promotions by showing an advertisement to one part of a product's potential customer base and showing no advertisement (or a different advertisement) to the other part. Sales figures can be assessed from data supplied by stores in which the consumer provides identifying information (e.g., an identification card or membership card). See also COUPON-RETURN TECHNIQUE.

**split-span test** a test in which brief auditory messages in the form of two different lists of digits or words are presented rapidly and simultaneously, one list to each ear. Participants are required to report as many digits or words as possible in any order. Typically, participants report first the stimuli presented to one ear, then those presented to the other.

**splitting** *n.* **1.** in KLEINIAN analysis and FAIRBAIRNIAN THEORY, a primitive DEFENSE MECHANISM used to protect oneself from conflict, in which OBJECTS provoking anxiety and ambivalence are dichotomized into extreme representations (PART-OBJECTS) with either positive or negative qualities, resulting in polarized viewpoints that fluctuate in extremes of seeing the self or others as either all good or all bad. This mechanism is used not only by infants and young children, who are not yet capable of integrating these polarized viewpoints, but also by adults with dysfunctional patterns of dealing with ambivalence; it is often associated with BORDERLINE PERSONALITY DISORDER. Also called **splitting of the object**. **2.** in COTHERAPY, divisiveness that a client provokes between therapists to polarize them on treatment decisions and to undermine the therapeutic process. Also called **splitting situation**.

**split treatment** see COLLABORATIVE CARE.

**SPMSQ** abbreviation for SHORT PORTABLE MENTAL STATUS QUESTIONNAIRE.

**spongiform encephalopathy** see PRION DISEASE.

**spongioblast** *n.* a type of ectodermal cell (see ECTODERM) that can develop into cells of the GLIA.

**spontaneity test** a type of SOCIOMETRIC TEST in which an individual in a therapy group is encouraged to improvise freely in reenactments of typical life situations with other members of the group who have been judged to be emotionally related, positively or negatively, to that individual. The goal is to gain insight into interpersonal relationships that are not revealed by the standard sociometric test, which deals only with attraction and rejection among members in a group. [devised by Jacob L. MORENO]

**spontaneity training** a personality-training program in which a client learns to act naturally and spontaneously in real-life situations by practicing such behavior in graduated sessions. Also called **spontaneity therapy**. [introduced by Jacob L. MORENO]

**spontaneous abortion** see ABORTION.

**spontaneous alternation** the instinctive, successive alternation among the options available in a situation involving discrete choices or exploration. For example, in a learning and memory experiment, a rat in a T MAZE tends to choose the left arm on one trial, the right arm on the next, then the left arm again, and so on.

**spontaneous discharge** the firing of nerve impulses without direct influence from an external stimulus.

**spontaneous imagery** unintended or unbidden mental images, as observed in drowsy or hypnagogic states.

**spontaneous memorialization** voluntary public response to unexpected and violent death. Examples include the placement of messages, flowers, and other objects at sites associated with terrorist attacks or personal tragedies (e.g., when a shopkeeper has been murdered or a child struck by a hit-and-run driver). The hallmark of spontaneous memorialization is an immediate emotional response on the part of individuals and small groups of people, as distinguished from institutionalized patterns of response.

**spontaneous movement** movement that results from impulse, occurring without premeditation or planning. Spontaneous movement decreases in some disorders, such as Parkinson's disease.

**spontaneous neural activity** the apparently automatic firing of neurons, particularly in the absence of observable stimuli. See SPONTANEOUS DISCHARGE.

**spontaneous recovery** the reappearance of a conditioned response, following either operant or classical conditioning, after it has been experimentally extinguished (see EXTINCTION).

**spontaneous regression** a phenomenon in which a person suddenly relives an event that occurred at an earlier age (e.g., from childhood) and may exhibit appropriate behavior for that age.

**spontaneous remission** a reduction or disappearance of symptoms without any therapeutic intervention, which may be temporary or permanent. It most commonly refers to medical, rather than psychological, conditions. See also WAITING-LIST PHENOMENON.

**spontaneous speech** speech that is not in response to a specific question or direction.

**spontaneous trait inference** a judgment about an individual's personality traits that is made automatically (i.e., without awareness or intention), usually on the basis of observed behavior. More specifically, **spontaneous trait association** is the phenomenon by which people who hear an individual describe negative or positive behaviors in others attribute the qualities implied by those behaviors to the speaker.

**spoonerism** *n.* a SLIP OF THE TONGUE in which two sound elements (usually initial consonants) are unintentionally transposed, resulting in an utterance with a different and often amusing sense. For example, a person might say *sons of toil* instead of *tons of soil*. [W. A. Spooner (1844–1930), British academic noted for slips of this kind]

**sport** *n.* **1.** a physical contest between individuals or teams that is conducted under codified rules, is controlled by nonparticipants, and can have only one winner. **2.** in genetics, an organism that has undergone mutation and is distinctly different from its parents.

**sport and exercise psychology** a discipline focused

on the development and application of psychological theory for the understanding and modification or enhancement of human behavior in the sport and physical exercise environment. This discipline evolved from an exclusive focus on sport performance and historically has been called SPORT PSYCHOLOGY. However, health and well-being through regular participation in vigorous physical activity programs have become of increasing interest to researchers and practitioners to such an extent that the field is progressively becoming two separate disciplines as EXERCISE PSYCHOLOGY merges with HEALTH PSYCHOLOGY.

**Sport Imagery Questionnaire (SIQ) 1.** an instrument used to measure the degree to which an athlete uses each of five different functions of IMAGERY: (a) motivational general-arousal (images related to physiological and emotional arousal); (b) motivational general-mastery (images of being a master of self-control); (c) motivational specific (images of winning, achieving a goal, etc.); (d) cognitive general (images of strategies to be used in a game); and (e) cognitive specific (images of proper execution or improvement of a skill). The SIQ consists of 30 statements to which participants respond using a 7-point LIKERT SCALE, ranging from *rarely* to *often*. [developed in 1998 by Craig R. Hall, Diane E. Mack, cognitive psychologist Allan U. Paivio (1925– ), and health psychologist Heather A. Hausenblas (1970– )] **2.** an instrument used to measure the imaging abilities of athletes. A participant is asked to imagine four different situations in his or her sport (practicing alone, practicing in front of others, watching a teammate, competing) and then to rate five different characteristics of the resulting imagery on a 5-point LIKERT SCALE, ranging from *no image present* to *extremely clear and realistic image*. [originally developed in 1982 by sport psychologist Rainer Martens (1942– )]

**sport psychology** the application and development of psychological theory for the understanding and enhancement of human behavior in sport. **Sport psychologists** may work in such specific areas as CLINICAL SPORT PSYCHOLOGY, EDUCATIONAL SPORT PSYCHOLOGY, or RESEARCH SPORT PSYCHOLOGY, depending on their education, training, and focus in the field.

**sport-related life skills** psychological skills learned for sport-related purposes that can be applied to behavior in other environments and situations. A notable example is group cooperation to achieve a desired outcome.

**sport science** the application of biophysical and social scientific methods to study sport behavior and improve performance. Sport science includes biological, mechanical, psychological, sociological, and managerial disciplines.

**sport self-talk log** see TRAINING LOG.

**sports hypnosis** hypnosis used to assist participants in sport to eliminate mind-sets that interfere with athletic performance or to develop those that enhance it.

**sports imagery** visualization used by participants in sport for learning and perfecting new skills, for MENTAL REHEARSAL, and for controlling emotions. See KINESTHETIC IMAGERY; MENTAL PRACTICE; SPORT IMAGERY QUESTIONNAIRE.

**sportsmanship** *n.* a situation-specific set of behaviors involving concern and respect for rules, opponents, and officials and a positive approach to participation in sporting events. The nature of sportsmanship depends on factors such as the type of sport, the level of play, and the age of the participant.

**sport socialization** the process of using sport as a medium for teaching and learning the skills and characteristics necessary to function effectively in a society. It includes learning respect for authority (e.g., a referee), fulfilling commitments (e.g., going to practice, not quitting the team), and so on.

**sport sociology** the application and development of sociological theory related to sport. Its primary focus is the role sport plays in societies, the organizations of sport, and the influence of culture on sport and of sport on culture.

**spotlight model of attention** a model of VISUAL ATTENTION that likens the focus of attention to a spotlight. Information outside of the spotlight is presumed not to receive processing that requires attention. Compare ZOOM-LENS MODEL OF ATTENTION.

**Spranger's typology** a system of classification that sorts humans by six basic cultural values: theoretical, economic, aesthetic, social, political, and religious. [proposed by Eduard Spranger (1882–1963), German philosopher and psychologist]

**spread** *n.* see DISPERSION.

**spreading activation 1.** in neuroscience, a hypothetical process in which the activation of one neuron is presumed to spread to connected neurons, making it more likely that they will fire. **2.** in cognitive psychology, an analogous model for the association of ideas, memories, and the like, based on the notion that activation of one item stored in memory travels through associated links to activate another item. As each item is activated, further activation may spread through the network, making it more likely that associated items will be recalled. Spreading activation is a feature of some NETWORK-MEMORY MODELS of SEMANTIC MEMORY.

**spreading depression** a propagating wave of silence in neuronal activity accompanied by a relatively large negative electric potential. Spreading depression occurs in regions of gray matter, including the cerebral cortex and hippocampus. It may occur spontaneously or be evoked by intense local electrical, chemical, or mechanical stimuli. Cortical spreading depression is related to migraine headaches.

**spread of effect** see STIMULUS GENERALIZATION.

**spree murder** the act of killing people at two or more locations within a short period of time. See also MASS MURDER.

**SPRINT** acronym for SPECIAL PSYCHIATRIC RAPID INTERVENTION TEAM.

**spurious correlation** a situation in which variables are associated through their common relationship with one or more other variables but do not have a causal relationship with one another. For example, assume that data show that the total amount of damage in a fire increases as the number of firefighters at the scene increases. One cannot infer from this that calling fewer firefighters would decrease damage: There is a third variable—the initial size of the fire—that influences both the amount of damage and the number of firefighters present. See THIRD-VARIABLE PROBLEM.

**SQAW** acronym for SLEEP QUESTIONNAIRE AND ASSESSMENT OF WAKEFULNESS.

**SQ3R** *n.* one of a variety of study methods developed on the basis of research in cognitive psychology. The formula

represents a method for enhanced learning of reading material. It consists of five steps: survey, question, read, recite, and review.

**squared correlation coefficient** see COEFFICIENT OF DETERMINATION.

**squared multiple correlation coefficient** see COEFFICIENT OF MULTIPLE DETERMINATION.

**square matrix** a data array that has the same number of rows as columns. The number of rows and columns determines the order of the matrix (e.g., 3 rows by 3 columns is an order of 3), and any two square matrices of the same order can be added and multiplied. Square matrices are used in REGRESSION ANALYSIS, FACTOR ANALYSIS, and other multivariate analytical techniques.

**square-root transformation** a procedure for converting a set of data in which each value,  $x_i$ , is replaced by its **square root**, another number that when multiplied by itself yields  $x_i$ . Square-root transformations often result in HOMOGENEITY OF VARIANCE for the different levels of the INDEPENDENT VARIABLE ( $x$ ) under consideration. As with transformations generally, the goal is to obtain data that more closely meet the assumptions of a statistical procedure that is to be applied.

**squeeze technique** a technique for overcoming PREMATURE EJACULATION. The penis is stimulated until the man is well aroused, then the partner briefly squeezes the head of the penis where it joins the shaft. When the squeeze is released, a pause in stimulation is taken for 30 seconds to 1 minute. The squeeze and pause lowers arousal, and stimulation is then resumed. After several stimulate-squeeze-pause-stimulate cycles, the man is stimulated to ejaculation. This procedure conditions the man to maintain an erection longer before ejaculation. [devised by U.S. sex researchers William H. Masters (1915–2001) and Virginia E. Johnson (1925–2013)]

**SQUID** acronym for SUPERCONDUCTING QUANTUM INTERFERENCE DEVICE.

**squint** *n.* see CROSS-EYE; STRABISMUS.

**S–R** abbreviation for stimulus–response.

**SRA** abbreviation for Satanic ritual abuse. See SATANISM.

**SRCD** abbreviation for SOCIETY FOR RESEARCH IN CHILD DEVELOPMENT.

**SRI** abbreviation for serotonin reuptake inhibitor. See SSRI.

**SRIF** abbreviation for somatotropin-release inhibiting factor. See SOMATOSTATIN.

**S–R learning model** the hypothesis that learning leads to the formation of stimulus–response connections. In CLASSICAL CONDITIONING, this connection is between the conditioned stimulus and the unconditioned response (e.g., between the tone and salivation in Ivan PAVLOV's procedure); in INSTRUMENTAL CONDITIONING, the connection is between the discriminative stimulus and the response (e.g., between a tone and bar pressing).

**S–R–O learning model** stimulus–response–outcome learning model: in INSTRUMENTAL CONDITIONING, the hypothesis that associations are acquired between a discriminative stimulus, the instrumental response, and the outcome of reinforcement or punishment.

**S–(R–O) model** stimulus–(response–outcome) model: in INSTRUMENTAL CONDITIONING, the hypothesis that a stimu-

lus activates an association between the response to and the outcome of reinforcement or punishment.

**S–R psychology** an approach to psychology in which behavior is conceptualized in terms of stimulus and response. The fundamental goal of adherents is therefore describing functional relationships between stimulus and response—that is, manipulating a stimulus and observing the response. S–R psychology developed from Edward L. THORNDIKE's connectionism and John B. WATSON's behaviorism, and S–R theories thus tend to be behavioral rather than cognitive. Examples include Clark L. HULL's reinforcement theory (see HULL'S MATHEMATICO-DEDUCTIVE THEORY OF LEARNING) and Edwin R. GUTHRIE's CONTIGUITY LEARNING THEORY. S–R theories are sometimes contrasted with cognitive theories of learning (see S–S LEARNING MODEL), such as PURPOSIVE BEHAVIORISM or Gestalt psychology. See also S–O–R PSYCHOLOGY.

**SRT 1.** abbreviation for SIMPLE REACTION TIME. **2.** abbreviation for SPEECH-RECEPTION THRESHOLD.

**SRY** abbreviation for sex reversal on Y. See SEX DIFFERENTIATION.

**SS** symbol for SUM OF SQUARES.

**SSA** abbreviation for SMALLEST SPACE ANALYSIS.

**SSDR** abbreviation for SPECIES-SPECIFIC DEFENSE REACTION.

**SSE 1.** abbreviation for subacute spongiform encephalopathy. See CREUTZFELDT–JAKOB DISEASE. **2.** symbol for sum of squared errors. See ERROR SUM OF SQUARES.

**S-shaped curve** see OGIVE.

**SS interval** abbreviation for SHOCK–SHOCK INTERVAL.

**S–S learning model** stimulus–stimulus learning model: any learning theory that is cognitive in nature and emphasizes the formation of associations between stimuli, in contrast to theories based on stimulus–response connections (see S–R PSYCHOLOGY). Examples include PURPOSIVE BEHAVIORISM and Gestalt learning theory. In CLASSICAL CONDITIONING, the S–S learning model postulates associations between conditioned and unconditioned stimuli; in INSTRUMENTAL CONDITIONING, the association is between the discriminative stimulus and the reinforcing stimulus or outcome (i.e., the **S–O association**).

**SS<sub>regression</sub>** symbol for REGRESSION SUM OF SQUARES.

**SSRI** selective serotonin reuptake inhibitor: any of a class of antidepressants that are thought to act by blocking the reuptake of serotonin into serotonin-containing presynaptic neurons in the central nervous system (see also SEROTONIN AGONIST). The SSRIs have demonstrated efficacy in the treatment of not only depression but also panic disorder and obsessive-compulsive disorder as well as eating disorders and premenstrual dysphoric disorder. However, the relationship of the reuptake mechanism to the therapeutic qualities of these agents has not been clearly elucidated. SSRIs also block the activity of certain subtypes of serotonin AUTORECEPTORS, and this may also be associated with their therapeutic effects. SSRIs have fewer adverse effects than the TRICYCLIC ANTIDEPRESSANTS and the MONOAMINE OXIDASE INHIBITORS, but common side effects include nausea, headache, anxiety, and tremor, and some patients may experience sexual dysfunction. SSRIs include FLUOXETINE, PAROXETINE, SERTRALINE, CITALOPRAM, and FLUVOXAMINE. Also called **SRI (serotonin reuptake inhibitor)**.

**SSS** abbreviation for SENSATION-SEEKING SCALE.

**SST 1.** abbreviation for SELF-STATEMENT TRAINING. **2.** abbreviation for SINGLE-SESSION THERAPY. **3.** abbreviation for SOCIAL SKILLS TRAINING. **4.** abbreviation for STIMULUS SAMPLING THEORY.

**s-structure** abbreviation for SUREFACE STRUCTURE.

**SSW** abbreviation for STAGGERED SPONDAIC WORD TEST.

**stability** *n.* **1.** the absence of variation or motion, as applied, for example, to genetics (invariance in characteristics), personality (few emotional or mood changes), or body position (absence of body sway). **2.** in developmental psychology, the degree to which a person maintains the same rank order with respect to a particular characteristic (e.g., intelligence test performance) over time in comparison with peers. **3.** the property of a system, either open or closed, that regulates its internal environment and tends to maintain a constant condition. **4.** see STATISTICAL STABILITY.

**stability coefficient** an index of RELIABILITY determined via a test–retest method, in which the same test is administered to the same respondents at two different points in time. For example, the stability coefficient of a psychological test may be estimated by determining the degree of similarity between participants' scores across time: The more the two scores for each participant are alike, the higher the correlation between the two administrations and the greater the stability coefficient of the test. Also called **coefficient of stability**.

**stabilized image** an image on the retina that does not move when the eye is moved. A stabilized image will fade rapidly since neurons in the visual system are sensitive to change rather than to sustained stimulation. Even during VISUAL FIXATION images are normally not truly stabilized, because very small eye movements (MICROSACCADES) continually refresh the stimulation of the retina by moving the eyes relative to a target.

**stabilizing selection** the tendency of NATURAL SELECTION to function so as to maintain the existing mean of a population characteristic (e.g., mean height, mean neck length) over successive generations.

**Stablon** *n.* a trade name for TIANEPTINE.

**Stadol** *n.* a trade name for BUTORPHANOL.

**staffing theory** in ECOLOGICAL PSYCHOLOGY, a conceptual model examining the psychological and interpersonal consequences of interacting in situations that are overstaffed or understaffed. It was formerly known as **manning theory**.

**staff turnover** see TURNOVER.

**stage** *n.* a relatively discrete period of time in which functioning is qualitatively different from functioning during other periods.

**Stage 1 sleep** the initial stage of NREM SLEEP, which is characterized by low-amplitude BRAIN WAVES (4–6 Hz) of irregular frequency, a slow heart rate, and reduced muscle tension. See SLEEP STAGES.

**Stage 2 sleep** a stage of NREM SLEEP that is defined by regular bursts of waves of about 15 Hz (called SLEEP SPINDLES) that progressively increase and then decrease in amplitude. See SLEEP STAGES.

**Stage 3 sleep** a stage of NREM SLEEP that is defined by the SLEEP SPINDLES seen in Stage 2 sleep interspersed with

larger amplitude DELTA WAVES (slow waves of 1–4 Hz). See SLEEP STAGES.

**Stage 4 sleep** a stage of NREM SLEEP that is defined by the presence of high-amplitude DELTA WAVES (slow waves of 1–4 Hz). See SLEEP STAGES.

**stage fright** an anxiety reaction associated with speaking or performing in public. The individual becomes tense and apprehensive and may stutter, forget lines, or try to escape the situation. The apprehension may develop into panic symptoms or even a PANIC ATTACK. See also PERFORMANCE ANXIETY.

**stage sampling** see MULTISTAGE SAMPLING.

**stages of change** the five steps involved in changing health behavior according to the TRANSTHEORETICAL MODEL: (a) precontemplation (not thinking about changing behavior), (b) contemplation (considering changing behavior), (c) preparation (occasionally changing behavior), (d) action (practicing the healthful behavior on a regular basis, resulting in major benefits), and (e) maintenance (continuing the behavior after 6 months of regular practice). [developed by U.S. clinical psychologist James O. Prochaska (1942– )]

**stages of grief** a hypothetical model, originally described in 1969 by Elisabeth KÜBLER-ROSS, depicting psychological states, moods, or coping strategies that occur during the DYING PROCESS or during periods of bereavement, great loss, or trauma. These begin with the DENIAL STAGE, followed by the ANGER STAGE, BARGAINING STAGE, DEPRESSION STAGE, and ACCEPTANCE STAGE. The model is nonlinear in that the stages do not necessarily occur in the given sequence or for a set period of time; moreover, they can recur and overlap before some degree of psychological and emotional resolution occurs. Also called **grief cycle model**.

**stage theory** any hypothetical construct used to describe phases or steps in a process that occurs over time, such as a theory that development involves discontinuous phases marked by changes in functioning. Examples include Sigmund Freud's stages of PSYCHOSEXUAL DEVELOPMENT and Jean Piaget's stages of cognitive development (see PIAGETIAN THEORY). See also STAGES OF CHANGE; STAGES OF GRIEF.

**stage theory of strategy development** see ADAPTIVE STRATEGY CHOICE MODEL.

**staggered entry design** in SURVIVAL ANALYSIS, a research design that allows for the entry or exit of participants at any time throughout the course of the study. In a typical survival analysis design, all samples have a common origin—they start at the same time—and there is a single, terminal event (typically, death). By contrast, in a staggered entry design each participant begins the study at a particular time zero and has an ending point corresponding to the length of time that he or she was part of the study (i.e., until he or she experienced the event of interest or otherwise ceased participation). For example, consider a study of a new treatment method implemented at a specific hospital: There will be patients who survived over the entire study period, others who survived but entered the hospital after the study had already begun, and still others who moved away and lost contact with the researcher before the study was concluded.

**Staggered Spondaic Word Test (SSW)** a test of auditory-processing abilities using equally stressed, two-syllable words in which the first syllable of one word is presented to

one ear and the second syllable of another word is presented to the other ear simultaneously. [originally published in 1962 by U.S. audiologist Jack Katz]

**stagnation** *n.* see GENERATIVITY VERSUS STAGNATION.

**STAI** abbreviation for STATE–TRAIT ANXIETY INVENTORY.

**stain** *n.* a chemical dye that is applied to tissue sections to render them more easily visible during microscopic examination. The choice of stain is determined by the type of tissue and the study objective.

**staircase illusion** a three-dimensional IMPOSSIBLE FIGURE in which a set of stairs appears to continue rising or descending endlessly. It is frequently confused with the SCHRÖDER STAIRCASE. Also called **Penrose staircase**. [devised by British geneticist and mathematician Lionel S. Penrose (1898–1972) and British physicist Roger Penrose (1931– )]

**staircase method** a variation of the METHOD OF LIMITS in which stimuli are presented in ascending and descending order. When the observer's response changes, the direction of the stimulus sequence is reversed. This method is efficient because it does not present stimuli that are well above or below threshold.

**staircase phenomenon 1.** any of various phenomena that display graduated or stepwise changes in the response of physical or physiological systems to a series of stimuli. **2.** in cardiac muscle, the increase in the force of cardiac contractions as heart rate is increased. **3.** in skeletal muscle, the graduated sequence of increasingly stronger muscle contractions that occur when a sequence of identical stimuli is applied to a rested muscle. Also called **treppe**.

**stakeholder** *n.* in evaluation research, any of a program's sponsors, funders, decision makers, personnel, or service recipients who either have an investment in the functioning of the program or are potentially affected by information resulting from the evaluation of its processes and outcomes. Conflict can occur between groups of stakeholders with different interests, especially in the specification or weighting of the EVALUATION OBJECTIVES.

**Stalevo** *n.* a U.S. trade name for a drug combination of LEVODOPA, carbidopa, and entacapone (a catechol-O-methyltransferase inhibitor); it is used in the treatment of Parkinson's disease, the symptoms of which are due to lack of striatal dopamine. As occurs with the Parkinson's drug SINEMET, carbidopa in this combination enables levodopa to be administered in lower doses to achieve an effective concentration in the brain, where it is converted into dopamine. Stalevo's additional ingredient, entacapone, increases and prolongs levodopa plasma levels, allowing increased dopaminergic stimulation.

**stalking** *n.* **1.** a pattern of following or observing a person in an obsessional, intrusive, or harassing manner. The pursued individual is typically a partner from a failed intimate relationship but may be a mental health care provider, a public figure (see EROTIC DELUSION), or other person of interest to the stalker. Stalking may involve direct threats, the intent to cause distress or bodily harm, and interpersonal violence. In the United States, laws against stalking vary from state to state. See also DOMESTIC VIOLENCE; INTIMATE PARTNER VIOLENCE. **2.** in animal behavior, see PREDATION. —**stalk** *vb.* —**stalker** *n.*

**stammering** *n.* see STUTTERING. —**stammer** *vb., n.*

**stance reflex 1.** the automatic activity of skeletal mus-

cle in maintaining the stability of the standing posture. **2.** any automatic response that maintains a special standing posture, such as the stance reflexes of a sow in estrus that maintain the animal with its back arched and its body rigid.

**standard application blank (SAB)** in PERSONNEL SELECTION, a standardized form used to obtain basic BIOGRAPHICAL DATA on a candidate for employment, such as age, sex, education, qualifications, employment history, leisure interests, and the like. Compare WEIGHTED APPLICATION BLANK.

**standard Cox regression model** see COX REGRESSION ANALYSIS.

**standard deviation** (symbol: *SD*) a measure of the variability of a set of scores or values within a group, indicating how narrowly or broadly they deviate from the MEAN. A small standard deviation indicates data points that cluster around the mean, whereas a large standard deviation indicates data points that are dispersed across many different values. The standard deviation is expressed in the same units as the original values in the sample or population studied, so that the standard deviation of a series of measurements of weight would be in pounds, for example.

The standard deviation is equal to the square root of the VARIANCE. If a population of *n* values has a mean  $\mu$ , then the standard deviation is

$$\sqrt{[\Sigma(X_i - \mu)^2/n]}.$$

For a subset of the population, with a mean value  $\bar{X}$ , the **sample standard deviation** is

$$\sqrt{[\Sigma(X_i - \bar{X})^2/(n - 1)]};$$

that is, the divisor is (*n* – 1) rather than *n*. See also ROOT MEAN SQUARE.

**standard error** (symbol: *SE*) a quantification of the inherent inaccuracy of a calculated POPULATION value that is attributable to random fluctuations within the SAMPLE data upon which it is based. It is expressed as the STANDARD DEVIATION of the SAMPLING DISTRIBUTION. For example, the SAMPLE MEAN is the usual estimator of a POPULATION MEAN, yet different samples drawn from that same population will yield different values for the mean. Thus, to determine how much sample variability exists, the STANDARD ERROR OF THE MEAN may be obtained by taking the standard deviation of all of the means over all of the samples taken. Standard error is expressed in units given in the same scale of measurement that was used for the sample data (e.g., for a set of means that are given in weight, the standard error unit is also a weight).

**standard error of estimate** (symbol: *SEE*) for a relationship between two variables (*x* and *y*) given by a REGRESSION EQUATION, an index of how closely the predicted value of *y* for a specific value of *x* matches its actual value. If *y'* is an estimated value from a regression line and *y* is the actual value, then the standard error of estimate is

$$\sqrt{[\Sigma(y - y')^2/n]},$$

where *n* is the number of points. The smaller the standard error of estimate, the more confident one can be in the accuracy of the estimated (predicted) *y* value.

**standard error of measurement** (symbol: *SEM*) an index of the RELIABILITY of an assessment instrument, representing the variation of an individual's scores across

multiple administrations of the same test. The larger the standard error of measurement, the greater the score variation across administrations. In essence, the standard error of measurement provides an indication of how confident one may be that an individual's obtained score on any given measurement opportunity represents his or her TRUE SCORE.

**standard error of the mean** (symbol: *SEM*;  $\sigma_m$ ) a statistic that indicates how much the average value (MEAN) for a particular SAMPLE is likely to differ from the average value for the larger POPULATION from which it is drawn. It is equal to  $\sigma/\sqrt{n}$ , where  $\sigma$  is the standard deviation of the original distribution and  $n$  is the sample size.

**standard gamma distribution** see GAMMA DISTRIBUTION.

**standardization** *n.* **1.** the process of establishing NORMS for a test. **2.** the use of uniform procedures in test administration to ensure that all participants take the same test under the same conditions and are scored by the same criteria, which in turn ensures that results can be compared to each other. **3.** the transformation of data into a distribution of STANDARDIZED SCORES, often one having a mean of 0 and a STANDARD DEVIATION of 1, which produces derived measures of relative standing and allows for comparison of raw scores from different distributions. The Z-SCORE TRANSFORMATION is an example of a standardization.

**standardization group** a sample used to establish reliable norms for the population that it represents. This is done by analyzing the results of the test administered to the sample and ascertaining the average performance level and the relative frequency of each deviation from the mean. The NORMAL DISTRIBUTION thus created is then used for comparison with any specific future test score. For example, the standardization group for a new test of computer literacy in older adults might comprise a large set of test takers above age 60 whose characteristics (e.g., sex, ethnicity, race) reproduce those of the larger population for whom the test is intended. The arrangement of scores obtained by such a standardization group subsequently provides a point of comparison for the scores of other older adults who take the test. Also called **norm group**; **standardization sample**.

**standardized coefficient** any index derived from an analysis of two or more variables that have been transformed via STANDARDIZATION, which ensures their value RANGES and VARIANCES are equivalent and thus appropriate for comparison. The term is most commonly used to denote the standardized regression coefficient or BETA COEFFICIENT.

**standardized distribution** a NORMAL DISTRIBUTION whose values have undergone transformation so as to have a mean of 0 and a STANDARD DEVIATION of 1. Also called **standard normal distribution**; **unit normal distribution**.

**standardized interview** see STRUCTURED INTERVIEW.

**standardized score** a value derived from a raw score by subtracting the mean value of all scores in the set and dividing by the STANDARD DEVIATION of the set. The advantage of standardized scores is that they are not reflective of the units of the measuring device from which they were obtained and thus can be compared to one another regardless of the device's scale values. Several types of standardized score exist, including STANINES, T SCORES, and Z

SCORES. Also called **normal score**; **standard score**. See also STANDARDIZATION.

**standardized test** **1.** an assessment instrument whose VALIDITY and RELIABILITY have been established by thorough empirical investigation and analysis. It has clearly defined norms, such that a person's score is an indication of how well he or she did in comparison to a large group of individuals representative of the population for which the test is intended. **2.** an assessment instrument administered in a predetermined manner, such that the questions, conditions of administration, scoring, and interpretation of responses are consistent from one occasion to another.

**standard language** the generally accepted version of a language that is associated with formal and official contexts and with high-status users. Typically, it will be the version used in mainstream media and taught to schoolchildren and second-language learners. Most languages have a number of nonstandard varieties that differ from the standard language in pronunciation, vocabulary, and grammar.

**standard normal distribution** see STANDARDIZED DISTRIBUTION.

**standard normal variable** any random variable whose probable value follows a NORMAL DISTRIBUTION with a mean of 0 and a STANDARD DEVIATION of 1. Also called **unit normal variable**.

**standard observer** in color vision research, a hypothetical typical human visual system that is described in terms of mathematical functions and equations relating its quantitative visual responses to measurable physical characteristics of light stimuli. The descriptions are therefore PSYCHOPHYSICAL and used to achieve a shared technical description of the perceptual effects of light stimuli on human observers. The equations that define the standard observer are based on averages of laboratory measurements of the visual responses of human participants to particular light stimuli under particular viewing conditions. See also IDEAL OBSERVER.

**standards of practice** a set of guidelines that delineate the expected techniques and procedures, and the order in which to use them, for interventions with individuals experiencing a range of psychological, medical, or educational conditions. Standards of practice have been developed by the American Psychological Association and other professional associations to ensure that practitioners use the most well researched and validated treatment plans available in their fields.

**standard stimulus** an item used as the basis of comparison in the quantitative investigation of physical stimuli and the sensations and perceptions they produce. For example, in the METHOD OF ADJUSTMENT, a participant may be presented with a sound of a particular intensity (the standard stimulus) and then asked to change the intensity of another sound to match.

**standard treatment control** in a CLINICAL TRIAL, a type of CONTROL CONDITION in which participants receive the treatment typically administered to a group of participants with a given medical problem. Another group of participants receives the experimental treatment. After the trial, the outcomes of the two groups are compared to see if the experimental treatment is better than, as good as, or worse than the standard treatment.

**standpoint theory** a theory in POSTMODERNISM that

proposes that the way an individual views the world is influenced by his or her perspective, which in turn is influenced by the individual's social group memberships, experiences, location, SITUATED KNOWLEDGE, and other characteristics. When a person actively focuses on, recognizes, and acknowledges these influences, he or she has obtained a standpoint (i.e., a perspective is passive, but a standpoint is an active choice). [originated in 1807 by German philosopher Georg Wilhelm Friedrich Hegel (1770–1831) in his studies of slavery]

**Stanford Achievement Test** an assessment tool utilizing multiple-choice and open-ended questions designed to measure progress in reading, mathematics, language, spelling, listening, science, and social science. There is also an emphasis on higher level thinking and writing skills. Currently in its 10th edition (2003), the test reflects contemporary education practice with each new edition. [originally developed by Lewis M. TERMAN]

**Stanford–Binet Intelligence Scale (SB)** a standardized assessment of intelligence and cognitive abilities for individuals ages 2 to 89 years. It currently includes five verbal subtests and five nonverbal subtests that yield Verbal, Nonverbal, and Full Scale IQs (with a mean of 100 and a standard deviation of 15) as well as Fluid Reasoning, Knowledge, Quantitative Reasoning, Visual-Spatial Processing, and Working Memory index scores. The Stanford–Binet test was so named because it was brought to the United States in 1916 by Lewis M. TERMAN, a professor at Stanford University, as a revision and extension of the original **Binet–Simon Scale** (the first modern intelligence test) developed in 1905 by Alfred BINET and French physician Théodore Simon (1873–1961) to assess the intellectual ability of French children. The present Stanford–Binet Intelligence Scale (**SB5**), developed by U.S. psychologist Gale H. Roid (1943– ) and published in 2003, is the fourth revision of the test; the first and second revisions were made by Terman and U.S. psychologist Maud Merrill (1888–1978) and published in 1937 and 1960, respectively; and the third revision, by U.S. psychologists Robert L. Thorndike (1910–1990), Elizabeth P. Hagen (1915–2008), and Jerome M. Sattler (1931– ), was published in 1986.

**Stanford Hypnotic Susceptibility Scale** a standardized 12-item scale used to measure HYPNOTIC SUSCEPTIBILITY by means of the participant's responses to various suggested actions, such as to fall forward, close the eyes, or lower an outstretched arm. [developed at **Stanford University** by Ernest R. HILGARD]

**Stanford prison study** a controversial 1971 study of the psychological effects of coercive situations, conducted by a research team under the direction of U.S. psychologist Philip G. Zimbardo (1933– ). The male participants were randomly assigned to the roles of either prisoner or guard in a simulated prison at Stanford University. A variety of methods and situations were used to depersonalize participants, diminish their sense of identity, and increase a sense of power on the one hand (guards) and powerlessness on the other (prisoners). The experiment was terminated after only 6 days of the originally scheduled 14, when several participants showed physical manifestations of stress and psychological trauma. The study was criticized on both ethical and methodological grounds but is often cited as an example of the POWER OF THE SITUATION, because it illustrated the manner in which social contexts can influence

and transform human behavior, often in very negative ways. See also LUCIFER EFFECT.

**Stanford v. Kentucky** a case resulting in a 1989 U.S. Supreme Court ruling that it is permissible to sentence people as young as 16 years of age to death.

**stanine** *n.* a method of scaling scores on a point scale that ranges from a low of 1 to a high of 9, with a mean of 5 and a STANDARD DEVIATION of 2. A stanine is a **standard ninth**, referring to the interval used in dividing the results into nine approximately equal parts. A stanine score of 1, 2, or 3 is below average; 4, 5, or 6 is average; and 7, 8, or 9 is above average. A stanine is a type of STANDARDIZED SCORE and is mainly used with school achievement tests.

**stanolone** *n.* a semisynthetic analog of DIHYDROTESTOSTERONE used in the treatment of some breast cancers because of its tumor-suppressing capabilities.

**stapedius muscle** a middle ear muscle that controls the movement of the stapes, one of the ear OSSICLES. Its activation (the **stapedius reflex**) is part of the ACOUSTIC REFLEX.

**stapes** *n.* (*pl.* **stapedes**) see OSSICLES.

**star** *n.* in SOCIOMETRY, an individual who is frequently chosen when group members select the other members whom they like the most, prefer to work or associate with, admire, and so on. Such individuals are the most popular, best-liked group members. Among children, this status is that of the *popular child*. See SOCIOMETRIC STATUS.

**star compass** see SUN COMPASS.

**startle response** an unlearned, rapid, reflexlike response to sudden, unexpected, and intense stimuli (e.g., loud noises, flashing lights). This response includes behaviors that serve a protective function, such as closing the eyes, frowning by drawing the eyebrows together, compressing the lips, lowering the head, hunching the shoulders, and bending the trunk and knee. The reaction can be neutralized by context, inhibition, and habituation. Also called **startle reaction**.

**starvation** *n.* **1.** chronic and severe undernourishment. Common physical effects of starvation include general weakness or asthenia, hunger pangs, sluggishness, and susceptibility to disease. Psychological effects include slowed thought processes, difficulty concentrating, apathy, irritability, reduced sexual desire, and loss of concern for appearance. Psychotic reactions seldom occur except when starvation is accompanied by infection or extreme stress. **2.** severe deficiency of any vital resource, as in the oxygen starvation that may occur from exposure to low atmospheric pressure (see AIR-PRESSURE EFFECTS).

**stasis** *n.* a condition of stability, equilibrium, or inactivity, as opposed to a state of flux or change. —**static** *adj.*

**STAT** abbreviation for STERNBERG TRIARCHIC ABILITIES TEST.

**state** *n.* the condition or status of an entity or system at a particular time that is characterized by relative stability of its basic components or elements. Although the components or elements are essentially qualitatively stable, it is possible for them also to be dynamic, as in a hyperactive state or a state of flux.

**state anxiety** anxiety in response to a specific situation that is perceived as threatening or dangerous. State anxiety varies in intensity and fluctuates over time. Compare TRAIT

**ANXIETY.** [defined in 1972 and 1983 by Charles D. SPIELBERGER]

**state-dependent behavior** actions that are affected by one's emotional state, such as saying something hurtful to another while angry.

**state-dependent learning** learning that occurs in a particular biological or psychological state and is better recalled when the individual is subsequently in the same state. Recall may be diminished when the individual is in a different state. For example, a rat trained to run a maze while under the influence of a psychoactive drug (e.g., pentobarbital) may not run it as successfully without the drug. Also called **dissociated learning**. See also **CONTEXT-SPECIFIC LEARNING**.

**state-dependent memory** a condition in which memory for a past event is improved when the person is in the same biological or psychological state as when the memory was initially formed. For example, alcohol may improve one's recall of events experienced when one was previously under the influence of alcohol (although this level of recall is lower than recall under conditions in which both **ENCODING** and **RETRIEVAL** occur in sober states). A distinctive state may arise from a drug, a mood, or a particular place. See **CONTEXT-SPECIFIC LEARNING**; **MOOD-DEPENDENT MEMORY**; **STATE-DEPENDENT LEARNING**.

**statement validity analysis** a collection of techniques used to assess the truth of statements given during investigations, such as the truth of allegations made by children during interviews concerning sexual abuse. The focus is on the words themselves, independent of case facts. Such analysis is based on the assumption that the flow and quality of truthful statements is different from fabricated ones and it involves examining the use of nouns, pronouns, and verbs; the inclusion of extraneous information; the use of such phrases as "I think," which indicate lack of connection; and the balance between descriptions of activities before, during, and after the event in question. These provide various criteria that ostensibly enable interviewers to distinguish plausible from implausible accounts. Such methods are still being refined and their accuracy studied and debated. See also **CRITERION-BASED CONTENT ANALYSIS**.

**state orientation** a style of responding to dilemmas or conflicts that is characterized by prolonged analysis and assessment of alternatives rather than by swift, decisive action. The hesitation of state orientation thus leads to the perseverance of current mental and behavioral states. Compare **ACTION ORIENTATION**.

**state self-focus** see **SELF-FOCUS**.

**state space 1.** a graphical representation used to characterize game playing and other search-based problem solving. A state space has four components: (a) a set of nodes or states, (b) a set of arcs linking subsets of the nodes, (c) a nonempty set of nodes indicated as the start nodes of the space, and (d) a nonempty set of goal nodes of the space. The goal nodes are identified by either a property of the state itself (e.g., a checkmate) or a property of the path leading to the goal state (e.g., the shortest path). An architecture such as a **PRODUCTION SYSTEM** or **CLASSIFIER SYSTEM** can generate a state-space search. Computational state-space analysis and computer simulations of problem solving often are used as well in the study of how people pursue goal-directed behavior. See also **GRAPH**; **SEARCH**; **TREE**. **2.** multidimensional space, particularly as related to the depiction of the results of classification methods used

to group objects with similar characteristics and patterns of behavior.

**state-specific science** the concept of science as dependent on a particular state of consciousness, so that a change in consciousness might yield a different kind or content of science. [proposed by U.S. psychologist Charles T. Tart (1937– )]

**states versus transformations** in **PIAGETIAN THEORY**, the extent to which a child's attention is focused on states (e.g., the appearance of an object) rather than on transformations (i.e., what is done to the object), and vice versa, at different stages of cognitive development. At the **PREOPERATIONAL STAGE**, children center their attention on specific states and ignore the transformations between states, whereas the reverse is true for children at the **CONCRETE OPERATIONAL STAGE**.

**state theories of hypnosis** theories positing that hypnosis evokes a distinctive, altered state of consciousness in the hypnotized person. Compare **NONSTATE THEORIES OF HYPNOSIS**.

**State-Trait Anxiety Inventory (STAI)** a self-report that includes separate measures of **STATE ANXIETY** and **TRAIT ANXIETY**. The state anxiety items are designed to measure the intensity of anxiety experienced by participants in specific situations; the trait anxiety items are designed to assess the frequency with which respondents experience anxiety in the face of perceived threats in the environment. [devised in 1970 by Charles D. SPIELBERGER and colleagues]

**State v. Mack** a case resulting in an influential 1980 Minnesota Supreme Court ruling that testimony based on memories uncovered during hypnosis, or after an eyewitness has undergone a hypnotic induction, is not admissible in court because hypnosis is an unreliable method of retrieving memories. This has been referred to as the **per se exclusion rule**. However, this rule banning hypnotically retrieved evidence does not apply to defendants. See **ROCK V. ARKANSAS**.

**static ataxia** loss of the ability to maintain a fixed position, resulting in excessive swaying and tottering when standing still with the eyes closed or an inability to balance the body on one leg or to extend the arm steadily.

**static marriage** see **CLOSED MARRIAGE**.

**static response** a **POSTURAL REFLEX** that orients the body against a force, such as gravity. Also called **static reflex**.

**static sense** see **SENSE OF EQUILIBRIUM**.

**stationarity** *n.* in **TIME-SERIES ANALYSIS**, the property of being unchanging or "flat," such that the data are without trends or periodic fluctuations and the **MEAN**, **VARIANCE**, and **AUTOCORRELATION** structure remain constant over time. Most statistical forecasting methods are based on the assumption that the time series of interest can be mathematically transformed into approximate stationarity (i.e., can be "stationarized").

**statistic** *n.* **1.** a number that represents a measurement of some characteristic, construct, variable, or other item of interest. **2.** any function of the observations in a **SAMPLE** that may be used to estimate the unknown but corresponding value in the **POPULATION**. Examples include measures of **CENTRAL TENDENCY** (e.g., the **MEAN**, **MEDIAN**, **MODE**), measures of dispersion (e.g., **STANDARD DEVIATION**, **VARI-**



ANCE), and distributional attributes (e.g., SKEWNESS, KURTOSIS). Statistics often are assigned Roman letters (e.g., *M*, *s*), whereas the equivalent values in the population (called PARAMETERS) are assigned Greek letters (e.g.,  $\mu$ ,  $\sigma$ ). —**statistical** *adj.*

**statistical analysis** any of a wide range of techniques used to describe, explore, understand, explain, predict, and test hypotheses about data. It involves the examination of data collected from SAMPLES within POPULATIONS as well as the use of probabilistic models to make inferences and draw conclusions.

**statistical conclusion validity** the degree to which the conclusions drawn from statistical analyses of data are accurate and appropriate. In other words, statistical conclusion validity addresses whether inferences about relationships (i.e., whether the INDEPENDENT VARIABLE and DEPENDENT VARIABLE covary and, if so, how strongly) are reasonable, given the observed data. It is related to but distinct from INTERNAL VALIDITY, which is concerned with the causality of the relationship.

**statistical control** the use of statistical procedures to remove the influence of a particular factor that could not be eliminated or controlled by the experimental design in order to better analyze the relationship between two variables. For example, the relationship between age (*x*) and income earned (*y*) could be influenced by a third variable, years of education (*z*). Thus, if a researcher did not first remove the effects of education, he or she might derive erroneous conclusions about the influence of age on income from his or her analysis. One type of statistical control is PARTIAL CORRELATION. A second type is ANALYSIS OF COVARIANCE.

**statistical decision theory** a branch of statistical science concerned with the use of data to arrive at decisions. It focuses upon identifying the values, uncertainties, and other issues relevant to a given decision. Specific equations are used to calculate the degree of loss associated with each course of action and determine the most advantageous choice.

**statistical dependence** the situation in which the probability of one event occurring given the occurrence of another event is greater than the probability of occurrence of that first event in isolation. In other words, knowing information about one variable provides information about another. Compare STATISTICAL INDEPENDENCE. See also DEPENDENT EVENTS.

**statistical determinism** the position that the laws of probability can be used to predict the likely number of events of a given kind that will occur in a given population under certain defined conditions (e.g., the number of coin tosses per 1,000 that will be heads; the number of male Americans age 70 who will die in a 12-month period).

**statistical error** see ERROR.

**statistical hypothesis** a research question posed in a statistically testable form. For example, if a researcher is interested in whether one treatment leads to a more positive outcome than another treatment, he or she could reframe the question in terms of mean differences, such that the NULL HYPOTHESIS is 0 (no difference between treatments) and the ALTERNATIVE HYPOTHESIS is not 0 (the difference between treatments is greater or lesser than zero). See also HYPOTHESIS TESTING.

**statistical independence** the condition in which the

occurrence of one event makes it neither more nor less probable that another event will occur. In other words, knowing information about one variable provides no information about the other variable. Compare STATISTICAL DEPENDENCE. See also INDEPENDENT EVENTS.

**statistical learning theory** a theoretical approach in which mathematical models are used to describe processes of learning. The term often is applied specifically to STIMULUS SAMPLING THEORY but can be applied more generally to other theories as well.

**statistical model** a formal description of the relationships between two or more variables in the form of a mathematical equation. It is statistical in that the variables are related in a STOCHASTIC rather than a deterministic manner, with each set of possible observations on a variable linked to a set of probability distributions. Many STATISTICAL TESTS involve comparing a particular model with the observed data.

**statistical prediction** the process of using correlations between variables to hypothesize about future events and outcomes. For example, a university administrator may use a REGRESSION EQUATION to predict a student's college grade-point average with reasonable accuracy from measures of performance in high school, such as scores on tests and final grades in classes.

**statistical process control (SPC)** in organizational contexts, a method of monitoring, evaluating, and continuously improving the performance of products, systems, or employees through the statistical analysis of performance data.

**statistical psychology** the application of statistical methods and models to organize, summarize, and interpret data so as to derive descriptions and explanations of cognitive, behavioral, social, and other psychological phenomena.

**statistical significance** the degree to which a research outcome cannot reasonably be attributed to the operation of chance or random factors. It is determined during SIGNIFICANCE TESTING and given by a critical *p* value, which is the probability of obtaining the observed data if the NULL HYPOTHESIS (i.e., of no significant relationship between variables) were true. Significance generally is a function of sample size—the larger the sample, the less likely it is that one's findings will have occurred by chance. See also CLINICAL SIGNIFICANCE; PRACTICAL SIGNIFICANCE; SIGNIFICANCE LEVEL.

**statistical stability** consistency of results across samples, study designs, and analyses. A META-ANALYSIS may be used to examine the stability of means, correlations, and other PARAMETER estimates obtained from different studies of the same population. See also STABILITY COEFFICIENT.

**statistical test** any mathematical technique or procedure used to evaluate the correctness of an empirical hypothesis by determining the likelihood of the sample results occurring by chance. Statistical testing will reveal the probability of committing a TYPE I ERROR if the NULL HYPOTHESIS is rejected. See HYPOTHESIS TESTING; STATISTICAL SIGNIFICANCE.

**statistics** *n.* the branch of mathematics in which data are used descriptively or inferentially to find or support answers for scientific and other quantifiable questions. It encompasses various techniques and procedures for recording, organizing, analyzing, and reporting quantitative

information. See also DESCRIPTIVE STATISTICS; INFERENCE STATISTICS; SUMMARY STATISTICS. —**statistical** *adj.* —**statistician** *n.*

**statoconium** *n.* (*pl.* **statoconia**) see OTOLITH.

**statokinetic dissociation** see RIDDOCH'S PHENOMENON.

**status** *n.* **1.** the reputation or position of an individual or group relative to others, such as an individual's standing in a social group. See SOCIAL STATUS. **2.** a persistent condition, as in STATUS EPILEPTICUS.

**status differentiation** the gradual rise to positions of greater authority by some individuals within a group, accompanied by decreases in the authority exercised by other members.

**status epilepticus** a continuous series of seizures. It is a life-threatening condition that requires immediate medical treatment, usually by intravenous medication.

**status generalization** the tendency for individuals who are known to have achieved or been ascribed authority, respect, and prestige in one context to enjoy relatively higher status in other unrelated contexts. Well-known athletes or wealthy individuals, for example, may rise rapidly to positions of authority in groups even when these DIFFUSE-STATUS CHARACTERISTICS (athleticism, wealth) are not relevant in the current group context. See also EXPECTATION-STATES THEORY.

**status incongruence** **1.** a mismatch between related status dimensions, such as between a person's socioeconomic level and educational background. **2.** a perceived mismatch between a person's characteristics and his or her role in a particular context. For example, a very young supervisor creates status incongruence in the supervisor-worker dyad by reversing the traditional assumption that managers are older and more experienced than employees. **3.** unjust inconsistency in the allocation of status in a group, organization, or society, resulting from biased appraisals of the accomplishments of members of stigmatized groups.

**status offense** a nondelinquent, noncriminal act considered to be illegal because the perpetrator belongs to a certain group or class of people, most often children. For example, status offenses of minors include truancy, curfew violations, and underage drinking, whereas owning a gun would be a status offense for a felon.

**status planning** see LANGUAGE PLANNING.

**status-quo bias** see BEHAVIORAL ECONOMICS.

**status relations** patterns of relative prestige and respect that determine deference and authority within a group or organization—that is, the “chain of command,” DOMINANCE HIERARCHY, or PECKING ORDER. Also called **authority relations**.

**status symbol** any indicator of a person's prestige or high status in a group or society, such as expensive or rare possessions, an extravagant lifestyle, or membership in prestigious clubs. The term applies particularly to those indicators that individuals deliberately choose to communicate, often to give a falsely high impression of their status level to others.

**statutory rape** the criminal offense of having sexual intercourse with an individual who is not qualified to give lawful consent because she or he is under the statutory age

of consent. In the United States, the age of consent ranges from 14 to 18 years old, depending on each state's law.

**STD** abbreviation for SEXUALLY TRANSMITTED DISEASE.

**steady state** a condition of stability or equilibrium. For example, in behavioral studies, it is a state in which behavior is practically the same over repeated observations in a particular context. In pharmacology, it refers to a consistent, effective plasma (or other fluid) concentration of a medication in the body as a result of regular, often daily, doses to replace the amount of the drug that is excreted.

**stealing thunder** a courtroom strategy in which admissions of facts to the jury are made by one attorney before these same facts are brought up by the opposing attorney. It is intended to reduce the impact this information may have on the jury.

**stealth juror** a juror who conceals his or her biases from the judge or attorneys during VOIR DIRE, usually in the hope of influencing the outcome of the trial or gaining money or publicity (e.g., via interviews or book deals) from the case.

**steatopygia** *n.* the presence of large quantities of fat in the buttocks. In some cultures, steatopygia is considered an element of female beauty.

**Steele–Richardson–Olszewski syndrome** see PROGRESSIVE SUPRANUCLEAR PALSY. [John C. **Steele** and John Clifford **Richardson**, 20th-century Canadian neurologists; Jerzy **Olszewski** (1913–1964), Polish-born Canadian neuropathologist]

**Steinert's disease** see MYOTONIC MUSCULAR DYSTROPHY. [Hans Gustav Wilhelm **Steinert** (1875–1911), German physician]

**Steinzor effect** in discussion groups, the tendency for individuals to speak immediately after those sitting opposite them speak. The effect is strongest in leaderless groups. See also HEAD-OF-THE-TABLE EFFECT. [Bernard **Steinzor** (1920–2010), U.S. clinical psychologist]

**Stelazine** *n.* a trade name for TRIFLUOPERAZINE.

**stellate cell** any of a number of types of small nerve cells that have many branches, resembling a star; hence *stellate*. See also CORTICAL LAYERS.

**stem-and-leaf plot** a graphical method of presenting data that have been measured on an INTERVAL SCALE. A basic stem-and-leaf plot comprises two columns separated by a vertical line; the right column lists the last digit of each data point (the “leaves”) and the left column lists all of the other digits from each data point (the “stems”). Each stem is listed only once and no numbers are skipped, even if that means some stems have no leaves. The leaves are listed in increasing order of magnitude in a row to the right of each stem. For example, consider the following hypothetical values for participants measured on a particular variable:

55 57 58 59 74 75 77 79 79 83 83 86 87 92 95  
99 107

The stem-and-leaf plot for these values is

5 | 5 7 8 9

6 |

7 | 4 5 7 9 9

8 | 3 3 6 7

Also called **stemplot**.

**stem cell** a cell that is itself undifferentiated but can divide to produce one or more types of specialized tissue cells (e.g., blood cells, nerve cells). Because of this ability, stem cells act as a kind of continual repair system for the living organism by replenishing specialized cells. Stem cells found in embryos (**embryonic stem cells**) are produced in humans during the BLASTOCYST stage of development and are capable of forming any type of tissue cell; stem cells that occur in adults (**adult stem cells**) are more limited in the range of cell types they can produce. Because of this difference, many researchers believe that human embryonic stem cells hold greater potential for the development of therapeutic treatments than do adult stem cells. Nonetheless, the use of adult stem cells to treat some diseases has been common since the 1960s (e.g., the use of bone marrow stem cells in the treatment of leukemia and lymphoma), and research continues on the potential use of both types of stem cells as renewable sources of replacement cells and tissues to treat a range of conditions, such as cardiovascular disease, Alzheimer's disease, Parkinson's disease, spinal cord injury, diabetes, and arthritis. There are ethical concerns about human embryonic stem cell research, mainly because harvesting such cells involves destroying the embryo and thus, for some, raises questions about the rights of the unborn.

**stem-completion task** see WORD-STEM COMPLETION.

**steno-** combining form narrow or contracted.

**stenosis** *n.* the abnormal narrowing of a body conduit or passage. **Carotid stenosis** is narrowing of a CAROTID ARTERY, such as by atherosclerosis, which limits blood flow to the brain; **aortic stenosis** is narrowing of the aortic valve leading from the left ventricle, thereby restricting blood flow from the heart to the general circulation; **pyloric stenosis** restricts the flow of stomach contents into the small intestine; and **spinal stenosis** is a narrowing of the opening in the spinal column, thereby restricting the spinal cord and resulting in numbness and pain in the lower back and legs. —**stenotic** *adj.*

**stenosis of aqueduct of Sylvius** a hereditary or familial disorder, transmitted as an X-linked recessive gene, marked by massive head enlargement at birth and hydrocephalus due to narrowing of the CEREBRAL AQUEDUCT (aqueduct of Sylvius). In some cases, the disorder develops insidiously after adulthood rather than as a congenital condition.

**stepdown selection** see BACKWARD ELIMINATION.

**stepdown test** a memory test used in studies of shock-avoidance learning in rats and mice. When the animal first steps down from an elevated platform in the test chamber, it receives a brief foot shock. On subsequent test trials, the animal is usually much slower to step down, indicating its memory for the shock experience; a lack of hesitation in stepping down on postshock trials is considered a sign of cognitive impairment. Also called **stepdown avoidance**.

**stepfamily** *n.* a family unit formed by the union of parents one or both of whom bring a child or children from a previous union (or unions) into the new household. Also called **blended family**; **reconstituted family**.

**stepping reflex** a reflex movement elicited during the

first few weeks of human life by holding an infant upright with his or her feet touching a flat surface and moving the infant gently forward.

**setup selection** see FORWARD SELECTION.

**stepwise regression** a group of REGRESSION ANALYSIS techniques that enter predictor (independent) variables into (or delete them from) the REGRESSION EQUATION one variable (or block of variables) at a time according to some predefined criterion. It is contrasted with SIMULTANEOUS REGRESSION, which enters all variables at the same time. Also called **stepwise multiple regression**.

**stereoacuity** *n.* see STEREOSCOPIC ACUITY.

**stereoblindness** *n.* the inability to see depth using the cue of BINOCULAR DISPARITY, causing impaired depth perception. Stereoblindness is thought to affect 5% to 10% of the general population. It is associated with STRABISMUS during early childhood but may also be caused by occipitotemporal brain injury.

**stereochemical smell theory** the concept that certain odors are perceived because they are produced by ODORANTS whose stereochemical properties have certain shapes. Seven classes of odorants are postulated: camphoraceous, ethereal, floral, minty, musty, pungent, and putrid. The odorant molecules are thought to fit receptors in a lock-and-key manner that causes the neural membrane to become depolarized or hyperpolarized, which in turn is the cue that produces an odor experience. Since many odorants that share a similar molecular structure produce different odor experiences, it has been hypothesized that the lock-and-key principle may be modified by the orientation of the molecules at the receptor surfaces. Also called **lock-and-key theory**; **steric theory of odor**.

**stereocilia** *pl. n.* see HAIR CELL.

**stereognosis** *n.* the ability to identify the shape of an object by touch.

**stereogram** *n.* a picture perceived to have depth because it is produced by the binocular summation of two separate images of the same scene, each image slightly offset from the other in the horizontal plane. Although a STEREOSCOPE is commonly used to view the images, some observers can fuse the two images by simply crossing or uncrossing their eyes.

**stereoisomers** *n.* see ISOMERS.

**stereopsis** *n.* DEPTH PERCEPTION provided by means of the BINOCULAR DISPARITY of the images in the two eyes. Also called **stereoscopic depth perception**; **stereoscopic vision**. See also ANAGLYPH.

**stereoscope** *n.* a device that presents two slightly disparate pictures of the same scene, one to each eye. The separate retinal images fuse to produce a binocular, three-dimensional image (see STEREOGRAM).

**stereoscopic acuity** visual acuity for the perception of depth. Also called **stereoacuity**.

**stereoscopic depth perception** see STEREOPSIS.

**stereoscopic motion picture** a motion picture in which the dimension of depth is provided by recording the scene through two cameras, each with the perspective of one eye. When each sequence of images is presented to the correct eye at the same time, three-dimensional stereoscopic depth is perceived (see DEPTH PERCEPTION; STEREOPSIS).

**stereoscopic vision** see STEREOPSIS.

**stereotaxis** *n.* active movement of an organism in response to touch or direct contact with a solid object or surface. See TAXIS. —**stereotactic** *adj.*

**stereotaxy** *n.* determination of the exact location of a specific area within the body (e.g., the exact location of a nerve center in the brain) by means of three-dimensional measurements. Stereotaxy is used for positioning MICROELECTRODES, CANNULAS, or other devices in the brain for experimental, diagnostic, or therapeutic purposes and for locating an area of the brain prior to surgery. It involves the coordinated use of a **stereotactic atlas**, a map of the brain featuring a coordinate system and consisting of images and schematic representations of nerve fibers and other structures and serial sections of the brain, and a **stereotactic instrument**, a device that prohibits damage to neighboring tissues by holding the individual's head absolutely still in the appropriate position. Also called **stereotactic localization**; **stereotactic technique**. —**stereotactic** or **stereotaxic** *adj.*

**stereotropism** *n.* an orienting response of an organism to touch or to contact with a solid object or surface. —**stereotropic** *adj.*

**stereotype** *n.* a set of cognitive generalizations (e.g., beliefs, expectations) about the qualities and characteristics of the members of a group or social category. Stereotypes, like SCHEMAS, simplify and expedite perceptions and judgments, but they are often exaggerated, negative rather than positive, and resistant to revision even when perceivers encounter individuals with qualities that are not congruent with the stereotype (see NEGATIVE STEREOTYPE; POSITIVE STEREOTYPE; PREJUDICE). See also EXEMPLAR THEORY; GENDER STEREOTYPE; KERNEL-OF-TRUTH HYPOTHESIS; SEX-ROLE STEREOTYPE. —**stereotypic** *adj.*

**stereotype accuracy** the ability to accurately determine in what way and to what extent a person's traits correspond to a STEREOTYPE associated with his or her age group, ethnic group, professional group, or other relevant group. Compare DIFFERENTIAL ACCURACY.

**stereotyped behavior** inflexible behavior that follows a particular pattern and does not alter with changing conditions.

**stereotyped movement** a repeated movement or gesture, such as a tic, rocking, or head banging.

**stereotype threat** an individual's expectation that NEGATIVE STEREOTYPES about his or her member group will adversely influence others' judgments of his or her performance and that a poor performance will reflect badly on the member group. This expectation may undermine the individual's actual ability to perform well. In an academic setting, for example, it has been shown that African American students' performance in tests of intellectual ability can suffer because of anxiety induced by thinking that they are expected to perform poorly and will be judged according to negative stereotypes about Black intelligence. See also PREJUDICE. [identified in 1995 by U.S. psychologists Claude M. Steele (1946– ) and Joshua Aronson (1961– )]

**stereotypic movement disorder** in *DSM-IV-TR* and *DSM-5*, a disorder characterized by repetitive, nonfunctional, and often self-injurious behaviors, such as head banging, biting or hitting parts of the body, rocking, or hand waving. It may be associated with intellectual disability

and can arise at any age, though typically its onset begins in early childhood. Stereotypic movement disorder is distinguished from other disorders marked by repetitive or persistent movements, such as tic disorders, trichotillomania, and obsessive-compulsive disorder; by stereotyped movements that may occur without self-injury in a neurodevelopmental disorder such as autistic spectrum disorder; or by involuntary movements resulting from the effects of a medication or other substance (as in TARDIVE DYSKINESIA) or from another medical condition such as Huntington's disease.

**stereotypy** *n.* persistent repetition of the same words, movements, or other behavior, particularly as a symptom of disorder (e.g., autism, obsessive-compulsive disorder, schizophrenia). Stereotypy is also seen in nonhuman animals under conditions of social isolation, early social deprivation, or neglect. See STEREOTYPIC MOVEMENT DISORDER.

**steric theory of odor** see STEREOCHEMICAL SMELL THEORY.

**sterility** *n.* 1. the condition of being incapable of producing offspring, because of either INFERTILITY or surgical or medical intervention (see STERILIZATION). 2. the condition of being incapable of supporting microbial life because of treatment with chemicals, radiation, or heat. —**sterile** *adj.*

**sterilization** *n.* the process of rendering an organism incapable of sexual reproduction. This may be accomplished surgically (see VASECTOMY; CASTRATION; HYSTERECTOMY; OVARIECTOMY; SALPINGECTOMY; TUBAL LIGATION), or it may result from injury or from exposure to radiation, heat, or chemicals.

**Sternberg Triarchic Abilities Test (STAT)** a group intelligence test, designed for research purposes, that uses multiple-choice verbal, quantitative, and figural items, as well as essays, to measure analytical, creative, and practical abilities. Revised versions of the test also include other tasks, such as writing stories, telling stories, designing things, and watching movies with practical problems for the examinees to solve. The test yields separate scores for the analytical, creative, and practical components. [developed in the 1980s by Robert J. Sternberg (1949– ), U.S. psychologist]

**steroid** *n.* any organic molecule that is based on four interconnected hydrocarbon rings. The male and female SEX HORMONES are steroids, as are the CORTICOSTEROIDS and other natural substances, such as vitamin D and CHOLESTEROL.

**steroid hormone** any of a class of hormones whose molecular structure is based on the steroid nucleus of four interconnected rings of carbon atoms. Examples include the SEX HORMONES and CORTICOSTEROIDS.

**steroid use** the use of ANABOLIC-ANDROGENIC STEROIDS to improve performance, fitness, or appearance. See also PERFORMANCE ENHANCING DRUG.

**stethograph** *n.* see PNEUMOGRAPH.

**Stevens-Johnson syndrome** a condition marked by eruptions of fluid-filled blisters on the skin, mucous membranes, eyes, and genitals. It has a fatality rate of 1% to 5% and may be associated with an adverse reaction to ANTI-CONVULSANT and antibiotic agents. It is a variant of **toxic epidermal necrosis**. [Albert M. Stevens (1884–1945) and Frank C. Johnson (1894–1934), U.S. pediatricians]

**Stevens law** a psychophysical relationship stating that

the psychological magnitude of a sensation is proportional to a power of the stimulus producing it. This can be expressed as  $\Psi = ks^n$ , where  $\Psi$  is the sensation,  $k$  is a constant of proportionality,  $s$  is the stimulus magnitude, and  $n$  is a function of the particular stimulus. Also called **Stevens power law**. See also FECHNER'S LAW; WEBER'S LAW. [Stanley Smith STEVENS]

**Stewart–Morel syndrome** a disorder characterized by hypertrophy of the frontal bone of the skull, obesity, headache, disturbances affecting the nervous system, and a tendency toward intellectual disability. Also called **Morel's syndrome**. [Douglas Hunt **Stewart** (1860–1943), U.S. surgeon; Ferdinand **Morel** (1888–1957), Swiss psychiatrist]

**sthenic type** a constitutional type characterized by strength and vigor; it is roughly equivalent to the ATHLETIC TYPE in KRETSCHMER TYPOLOGY.

**sthenometer** *n.* an instrument for measuring muscle strength.

**STI** abbreviation for sexually transmitted infection. See SEXUALLY TRANSMITTED DISEASE.

**stick shaker** in ergonomics, a device within a joystick or other stick control that uses vibration to provide feedback to the operator in certain situations (e.g., the stall of an aircraft engine, wind, turbulence).

**stiffness** *n.* **1.** inflexibility of the muscles and joints due to injury, DYSTONIA, or over- or underuse. **2.** a characteristic, due to the springlike properties of muscles, that determines how the force exerted by a muscle varies as a function of its length for a fixed level of activation.

**stigma** *n.* the negative social attitude attached to a characteristic of an individual that may be regarded as a mental, physical, or social deficiency. A stigma implies social disapproval and can lead unfairly to discrimination against and exclusion of the individual.

**Stigma Impact Scale (SIS)** a self-report questionnaire that measures the effect on patients and their families of negative social attitudes toward the patients' health or mental health condition. Respondents answer questions about the impact of stigma on their quality of life, family relations, social contacts, and self-esteem, rating each item on a scale ranging from 0 (*no impact*) to 10 (*highest impact*). The SIS has been used to measure this impact on families with members who have Parkinson's disease, Alzheimer's disease, mental health disorders such as bipolar disorder, and intellectual and developmental disability.

**stigmatophilia** *n.* sexual interest in and arousal by a partner who is tattooed or has scars, or by having oneself tattooed, particularly in the genital area.

**Stiles–Crawford effect** a difference in the perceived brightness or perceived color of a stimulus depending on whether light rays enter the pupil near the edge or through the center. [Walter **Stiles** (1901–1985), British physicist; Brian H. **Crawford** (1906–1991), British physiologist]

**Stilling Color Vision Test** a test consisting of PSEUDO-ISOCHROMATIC CHARTS containing dots of various hues, saturations, and intensities developed for the detection of abnormal color perception. Some of the dots form numbers that are visible to the normal eye but not to the color-blind or color-weak eye. Now obsolete, it is the predecessor to the commonly used ISHIHARA TEST FOR COLOR BLINDNESS. [de-

veloped in 1877 by German ophthalmologist Jakob **Stilling** (1842–1915)]

**stim test** short for *stimulation test*, a technique often used prior to a formal POLYGRAPH test to convince examinees that the examiners are infallible in detecting deception. In one variation of the stim test, an examinee is told to select cards from a deck and then to lie about the identity of each card chosen. The examiner ostensibly uses questions about each card selection and the examinee's own physiological indicators to determine each card's actual identity. In reality, the examiner relies on a marked deck to correctly identify the cards chosen by the examinee.

**stimulant** *n.* any of various agents that excite functional activity in an organism or in a part of an organism. Stimulants are usually classified according to the body system or function excited (e.g., cardiac stimulants, respiratory stimulants). In psychology, the term usually refers to the CNS STIMULANTS (or psychostimulants).

**stimulant intoxication** see AMPHETAMINE INTOXICATION; COCAINE INTOXICATION.

**stimulant use disorder** in DSM–5, a diagnostic category reflecting disordered use of amphetamine-type substances, cocaine, and other stimulants. It combines DSM–IV–TR's separate abuse and dependence diagnoses for these substances, thereby removing AMPHETAMINE ABUSE, AMPHETAMINE DEPENDENCE, COCAINE ABUSE, and COCAINE DEPENDENCE as distinct entities. Mild, moderate, and severe cases of stimulant use disorder are determined according to the number of symptoms that individuals using these substances may present (e.g., craving; drug-seeking behavior; social and other dysfunction caused by stimulant use; stimulant tolerance; etc.); the number ranges from a minimum of two symptoms for mild cases to more than six for severe.

**stimulant withdrawal** see AMPHETAMINE WITHDRAWAL; COCAINE WITHDRAWAL.

**stimulate** *vb.* **1.** to animate, excite, or rouse to activity or heightened action. **2.** to apply a stimulus to a sensory receptor or to an excitable cell (e.g., neuron or muscle cell).

**stimulating occupation** a physical activity or task, such as dancing, that has an arousing and stimulating effect. Compare SEDATIVE OCCUPATION.

**stimulation** *n.* the act or process of increasing the level of activity of an organism, particularly that of evoking heightened activity in (eliciting a response from) a sensory receptor, neuron, or other bodily tissue. See also ELECTRICAL STIMULATION.

**stimulation effects** the physiological changes produced when a stimulus alters the MEMBRANE POTENTIAL of a neuron or muscle cell, resulting in a nerve impulse or muscle contraction. Changes in electric potentials are frequently measured, as are resultant changes in localized blood flow and temperature.

**stimulator** *n.* a device used to apply electric current to excite or stimulate a sensory receptor. An early type of stimulator was an induction coil wired to a vibrator that would convert direct-current electricity into pulsations. Modern stimulators incorporate a device for controlling the rate of change in the electric current, since a steady current flow has little stimulus effect.

**stimulus** *n.* (*pl.* **stimuli**) **1.** any agent, event, or situation—internal or external—that elicits a response from an

organism. See **CONDITIONED STIMULUS**; **UNCONDITIONED STIMULUS**. **2.** any change in physical energy that activates a sensory receptor. See **DISTAL STIMULUS**; **PROXIMAL STIMULUS**.

**stimulus-bound** *adj.* **1.** relating to a perception that is largely dependent on the qualities of the stimulation and thus involves little or no interpretation. **2.** describing behavior that occurs in response to the presence of a specific stimulus (e.g., hungering for and eating a specific food after seeing it). **3.** characterizing an individual whose behavior tends to be inflexible and determined primarily by the nature of the stimulus. **4.** describing a person, usually a child, who has a poor attention span, is distracted by irrelevant stimuli, and therefore performs below his or her intellectual capacity.

**stimulus coding** the form in which a stimulus is remembered, such as a **COGNITIVE MAP**.

**stimulus continuum** a series of stimuli related to each other along a specific dimension (e.g., a series of tones in the diatonic scale, an unbroken series of shades of blue).

**stimulus control** the extent to which behavior is influenced by different stimulus conditions. It can refer to different responses occurring in the presence of different stimuli or to differences in the rate, temporal organization, or topography (see **RESPONSE TOPOGRAPHY**) of a single response in the presence of different stimuli.

**stimulus differentiation** **1.** a process whereby an organism learns to discriminate between two or more stimuli by responding differently to them, such as by responding in the presence of one stimulus but not the other. See also **DISCRIMINATION LEARNING**. **2.** in Gestalt psychology, the process of distinguishing different parts or patterns in a visual field.

**stimulus discrimination** the ability to distinguish among different stimuli (e.g., to distinguish a circle from an ellipse) and to respond differently to them.

**stimulus element** any of the individual features of a complex stimulus, such as its shape or color.

**stimulus-element approach** see **CONFIGURAL-CUE APPROACH**.

**stimulus equivalence** the condition in which two or more related stimuli elicit the same response. Stimuli meet the mathematical definition of equivalence if they can be shown to exhibit **reflexivity**, **symmetry**, and **transitivity**. For example, in the context of an **ARBITRARY MATCHING TO SAMPLE** procedure, if a stimulus is chosen when it also appears as the sample, reflexivity has been shown. If Stimulus A is chosen when B is the sample, and B is chosen when A is the sample, symmetry has been shown. If B is chosen when A is the sample, C is chosen when B is the sample, and C is chosen when A is the sample, transitivity has been shown.

**stimulus evaluation checks (SECs)** assessments made on several dimensions when an individual evaluates the impact of an event and hence its emotional intensity and quality. Examples of SECs include checks for novelty, goal relevance, and congruity–incongruity of actions or events with social expectations. See also **APPRAISAL DIMENSION**. [proposed by Swiss psychologist Klaus Scherer (1943– ) in his theory of appraisal]

**stimulus filtering** the specialization of the nervous system so that only critical stimuli reach the brain and irrele-

vant stimuli do not. Female bullfrogs have two auditory organs that respond only to the two dominant frequencies in male courtship calls. Moths have ears with only two neurons: The neurons respond only to sounds in the frequency range of bat ultrasound, and successive filters in the moth's central nervous system ensure that only bat-produced sounds reach the brain.

**stimulus function** **1.** the role of a stimulus in evoking a response. For example, the taste and texture of ice cream in the mouth function to elicit licking and swallowing. **2.** the mathematical relationship between the magnitude of a stimulus and the size of the response.

**stimulus generalization** the spread of effects of conditioning (either operant or classical) to stimuli that differ in certain aspects from the stimulus present during original conditioning. If responding is indistinguishable from that seen in the presence of the original stimulus, **GENERALIZATION** is said to be complete (or no attention is commanded by the stimulus difference). If responding is different enough to be detected, **DISCRIMINATION** is evident as well as generalization. See also **STIMULUS CONTROL**.

**stimulus gradient** the variations in a stimulus along a given dimension (e.g., a change in loudness).

**stimulus-independent and task-unrelated thoughts (SITUTs)** see **MIND WANDERING**.

**stimulus-intensity dynamism** in **HULL'S MATHEMATICO-DEDUCTIVE THEORY OF LEARNING**, the concept that the greater the **STIMULUS STRENGTH**, the greater the organism's response strength.

**stimulus object** see **OBJECT**.

**stimulus onset asynchrony (SOA)** the time between the onset of one stimulus and the onset of the following stimulus. The term is used mainly in experiments with **MASKING**.

**stimulus overload** the condition in which the environment presents too many stimuli to be comfortably processed by an individual, resulting in stress and behavior designed to restore equilibrium. See also **COMMUNICATION OVERLOAD**; **INFORMATION OVERLOAD**; **SENSORY OVERLOAD**.

**stimulus proposition** the content of a situation brought up as a mental image. Stimulus propositions are part of the **BIOINFORMATIONAL THEORY** of how and why imagery works to enhance performance. See also **RESPONSE PROPOSITION**.

**stimulus–response (S–R)** see **S–R PSYCHOLOGY**.

**stimulus–response chain** see **RESPONSE CHAIN**.

**stimulus–response compatibility** the extent to which the relationship between stimulus and response facilitates response. Speed and accuracy are affected by this relationship; for instance, a left keypress in response to a stimulus on the left will be quicker and more accurate than a right keypress for a stimulus on the left. This is an example of an **element-level compatibility effect**, which results from the mapping of individual stimuli to responses within a set. A verbal response to a verbal stimulus is quicker and more accurate than a spatial response to a verbal stimulus. This is an example of a **set-level compatibility effect**.

**stimulus–response theory** see **S–R PSYCHOLOGY**.

**stimulus salience** the importance, intensity, and detectability of a stimulus. Higher salience is usually associated with quicker learning.

**stimulus sampling** a procedure for increasing the generalizability of research results by using multiple stimuli within a category as representative of an experimental condition, as opposed to selecting a single stimulus whose unique characteristics may distort results. For example, a study investigating the effects of gender on monetary generosity would demonstrate stimulus sampling if it employed many males and females to elicit donations from participants instead of using a single male and a single female.

**stimulus sampling theory (SST)** a MATHEMATICAL LEARNING THEORY stating that stimuli are composed of hypothetical elements and that on any given learning trial one learns only a sample of those elements. [developed by William K. ESTES]

**stimulus set** in reaction-time experiments, the expectancy or readiness associated with concentration on the stimulus. See MENTAL SET.

**stimulus situation** all the components of an occurrence or experience that, taken as a whole, comprise a stimulus to which an organism responds. The term is used to highlight the complexity of behavior-arousing events that are unitary patterns comprising many elements (e.g., a concert, an athletic competition). This approach differs from that of traditional behavior analysts, who tend to break down stimuli into smaller, separate elements.

**stimulus–stimulus learning model** see S–S LEARNING MODEL.

**stimulus strength** the actual intensity of a stimulus or its ability to elicit a desired response.

**stimulus substitution** a way of characterizing the outcome of CLASSICAL CONDITIONING when the conditioned stimulus is said to have taken on the functions of the unconditioned stimulus. For example, in Ivan PAVLOV's early experiments, the sound of a tone paired with food eventually came to elicit salivation, just as the food did; that is, the tone substituted for the food. This characterization is no longer widely accepted.

**stimulus value** **1.** the strength of a given stimulus, measured in standard units (e.g., a shock of 40 volts). **2.** a theoretical characteristic of a stimulus said to index its effectiveness as a REINFORCER.

**stirrup** *n.* see OSSICLES.

**St. John's wort** a perennial flowering plant, *Hypericum perforatum*, that has an extensive history of folk use, particularly as a sedative, a treatment for nerve pain and malaria, and a balm for wounds, burns, and insect bites. It is currently a highly popular product used in the treatment of mild to moderate depression, anxiety, and insomnia. There is some research supporting its effectiveness for these purposes, but studies have not demonstrated the superiority of St. John's wort over placebo in the management of major depression. There is also some research suggesting that the herb possesses anti-inflammatory and antioxidant properties. The active agents are presumed to be HYPERICIN and related compounds. Hypericin is known to exert some effects common to other ANTIDEPRESSANTS, such as inhibition of the reuptake of norepinephrine, dopamine, and serotonin. It may also exert some effects by modulating the neurotransmitters gamma-aminobutyric acid (GABA) and glutamate. The agent should be used with caution, as it may interact adversely with or limit the effectiveness of a number of other drugs, particularly those

used to treat HIV/AIDS and cancer and to prevent transplant rejection. It may also lead to SEROTONIN SYNDROME if taken with other serotonergic antidepressants. Taken on its own, its side effects are rare but may include dry mouth, dizziness, diarrhea, nausea, increased sensitivity to sunlight, and fatigue.

**STM** abbreviation for SHORT-TERM MEMORY.

**stochastic** *adj.* **1.** random or undetermined; arising from chance. **2.** describing a system or process that follows a probability pattern, such that events may be analyzed according to their statistical probability but not accurately predicted. See PROBABILISM.

**stochastic independence** the condition in which two systems or processes are statistically unrelated, so that one is in no way contingent upon the other.

**stochastic model** **1.** a model in which one or more of the inputs allow for random variation, thus generating a range of potential outcome values. Stochastic models are used to estimate the probabilities of various outcomes occurring under varying conditions. They are widely used in the social and behavioral sciences and also in the financial world. Compare DETERMINISTIC MODEL. **2.** in artificial intelligence, a model based on co-relational analysis, usually BAYESIAN, used for simulating situations as well as fault diagnosis. Although mathematically well founded, unless simplifying assumptions are made, such models are computationally intractable for complex situations. See GRAPH.

**stochastic process** a random process: a sequence of events with a random probability pattern such that the occurrence of any event in the sequence is independent of past events. For example, the number of people in a doctor's office who have colds during a 1-month period could be said to follow a stochastic process. In contrast to **deterministic processes**, stochastic processes involve some indeterminacy, and their development over time may only be described by probability distributions. A MARKOV CHAIN is a stochastic process.

**stochastic variable** see RANDOM VARIABLE.

**Stockholm syndrome** a mental and emotional response in which a captive (e.g., a hostage) displays seeming loyalty to—even affection for—the captor. The captive may come to see law enforcement or rescuers as the enemy because they endanger the captor. The name derives from the case of a woman who was held hostage in 1973 during a bank robbery in Stockholm, Sweden, and became so emotionally attached to one of the robbers that she broke her engagement to another man and remained faithful to her former captor during his prison term. [term coined by Swedish psychiatrist and criminologist Nils Bejerot (1921–1988)]

**stocking anesthesia** a SENSORY CONVERSION SYMPTOM in which there is a loss of sensitivity in the foot and in part of the calf (i.e., areas that would be covered by a stocking) that cannot be explained by a general medical condition or organic dysfunction. Also called **foot anesthesia**; **shoe anesthesia**. See also GLOVE ANESTHESIA.

**stomach loading** the experimental process of expanding a balloon into a nonhuman animal's stomach or filling the stomach with water or an inert substance.

**-stomy (-ostomy)** *suffix* surgical opening (e.g., tracheostomy; see TRACHEOTOMY).

**stop** *n.* see PLOSIVE.

**stop-signal task** a procedure used in choice-reaction tasks in which a signal instructing the participant to withhold the response is presented on some trials at varying intervals after presentation of the stimulus. This is done to determine at what point in processing a response can no longer be inhibited.

**storage** *n.* the state of an item that is retained in memory, after ENCODING and before RETRIEVAL. See also RETENTION.

**storage-and-transfer model of memory** see MULTISTORE MODEL OF MEMORY.

**storage capacity** the amount of information that can be retained in memory. SENSORY MEMORY and SHORT-TERM MEMORY are believed to have limited capacities; LONG-TERM MEMORY may have an unlimited capacity.

**storm-and-stress period** a period of emotional turmoil. The phrase was used by G. Stanley HALL to characterize adolescence, which he believed to correspond to the turbulent transition from savagery to civilization. It is a translation of the German *Sturm und Drang*, which was the title of a 1776 drama by Friedrich Maximilian von Klinger and was subsequently applied to a German literary movement. Also called **Sturm und Drang period**.

**story model** a theory of juror decision making that proposes that jurors organize trial information into narratives or stories to aid comprehension and retention of evidence. See also NARRATIVE METHOD.

**story-recall test** a neuropsychological assessment of memory that requires an individual to recall details of a story that is told or read to him or her.

**storytelling** *n.* **1.** the recounting by a client of the events, concerns, and problems that led him or her to seek treatment. Therapists can learn much about the motives and origins of conflicts by attending carefully (see ACTIVE LISTENING) to the stories that clients bring to the session. **2.** the use of symbolic talk and allegorical stories by the therapist to aid the client's understanding of issues. Also called **therapeutic storytelling**.

**stotting** *n.* a stiff-legged jumping display, shown by many species of ungulates, in which all four legs are off the ground at the same time. Stotting appears to communicate to predators that the individual has detected them and has enough vigor to make capture difficult. Studies show that predators are more likely to give up a hunt when an animal stots.

**STP** see DOM.

**strabismic amblyopia** see DEVELOPMENTAL AMBLYOPIA.

**strabismometer** *n.* an instrument for measuring extent of strabismus.

**strabismus** *n.* any chronic abnormal alignment of the eyes, making normal binocular fixation and thus binocular vision impossible. Because strabismic eyes look in different directions, they give the brain conflicting messages, which may result in DOUBLE VISION. Alternatively, the brain may simply ignore, or suppress, one eye's view altogether. The most common form of strabismus occurs horizontally: One or both eyes deviate inward (**convergent strabismus**; see CROSS-EYE) or outward (**divergent strabismus**). However, the deviation may be upward (**hypertropia**), downward (**hypotropia**), or in rare cases, twisted clockwise or counterclockwise (**cyclotropia**). Also called **heterotropia**; **squint**. —**strabismic** *adj.*

**straight** **1.** *adj.* a colloquial term for heterosexual. **2.** *n.* slang for a heterosexual person.

**strain** **1.** *n.* the state of a system on which excessive demands are made. Examples include muscular strain (excessive tension in a muscle usually due to an activity overload) and psychological strain, usually due to an emotional overload. **2.** *n.* a specific group within a species whose members possess a common distinguishing characteristic. **3.** *n.* excessive effort or exertion. **4.** *vb.* to distort, alter, or injure as a result of such excess or the application of external force. **5.** *vb.* to filter.

**straitjacket** *n.* an article of clothing that was formerly used to restrain patients in psychiatric hospitals from injuring themselves or others and, in some cases, for punishment. It consisted of a canvas shirt with overlong sleeves that bound the patient's arms to the chest and were wrapped around and then fastened behind the back. Currently, if a means of physical restraint for patients is needed, a system of wrist and ankle holds that limit the patient's range of motion is used. Also called **camisole**.

**strange-hand sign** a TACTILE PERCEPTUAL DISORDER characterized by an inability to recognize one's own hand, usually the left. Individuals may be able to write with the left hand but do not believe the writing is their own or, when clasping the two hands, may be unable to acknowledge the left hand as their own without visual clues. The disorder is caused by a defect of the CORPUS CALLOSUM of the brain. It is similar to, and is often considered a synonym for, ALIEN HAND SYNDROME.

**stranger anxiety** the distress and apprehension experienced by young children when they are around individuals who are unfamiliar to them. Stranger anxiety is a normal part of cognitive development: Babies differentiate caregivers from other people and display a strong preference for familiar faces. Stranger anxiety usually begins around 8 or 9 months of age and typically lasts into the 2nd year. Also called **fear of strangers**. See also SEPARATION ANXIETY; XENOPHOBIA.

**stranger distress** see DISTRESS.

**Strange Situation** an experimental technique used to assess quality of ATTACHMENT in infants and young children (up to the age of 2). The procedure subjects the child to increasing amounts of stress induced by a strange setting, the entrance of an unfamiliar person, and two brief separations from the parent. The reaction of the child to each of these situations is used to evaluate the security or insecurity of his or her attachment to the parent. See INSECURE ATTACHMENT; SECURE ATTACHMENT. [devised in 1978 by Mary D. Salter AINSWORTH]

**strangled affect** in psychoanalytic theory, an inhibition or retention of the normal discharge of emotion, leading to a substitute discharge in the form of physical symptoms. This theory was advanced in Sigmund FREUD's early formulations to explain the dynamics of CONVERSION HYSTERIA; it was later supplanted by the concept of REPRESENTATION.

**strata** *pl. n.* see STRATUM.

**strategic family therapy** a group of approaches to FAMILY THERAPY in which the focus is on identifying and applying novel interventions to produce behavioral change rather than on helping the family gain insight into the sources of their problems. Also called **strategic intervention therapy**.



**strategic human resource management (SHRM)** planned and systematic efforts to help organizations improve their competitive performance and achieve their goals by effectively integrating missions and values with employee development and welfare.

**strategic intervention therapy** see STRATEGIC FAMILY THERAPY.

**strategic therapy** any intervention that is based on the belief that an individual's problems are caused by ineffective solutions and on a PROBLEM-SOLVING APPROACH that focuses on pursuing a therapeutic strategy to promote change in the individual's behavior rather than to understand his or her underlying intrapsychic factors.

**strategy** *n.* a program of action designed to achieve a goal or accomplish a task. The term is used in a variety of contexts. For example, in artificial intelligence, it denotes a specific approach used for designing SEARCHES of a problem or game space. Strategies in this sense are used to determine which state in the search is to be considered next and are often called HEURISTICS. In biology, however, the term refers to an approach for ensuring REPRODUCTIVE SUCCESS, as in a K-STRATEGY or an R-STRATEGY.

**strategy choice model** see ADAPTIVE STRATEGY CHOICE MODEL.

**stratification** *n.* arrangement into a layered configuration, as in SOCIAL STRATIFICATION. —**stratify** *vb.*

**stratified sampling** the process of selecting a sample from a population comprised of various subgroups (strata) in such a way that each subgroup is represented. For example, in a study of college students, a researcher might wish to examine people from different majors (e.g., social sciences, physical sciences, humanities). The selection procedure within each of these strata may be random or systematic. In **stratified random sampling**, a chance process (e.g., a RANDOM NUMBER GENERATOR) is used to select individuals, whereas in **stratified systematic sampling** an objective, orderly procedure is applied to choose individuals (e.g., listing all of the students within each major alphabetically and choosing every 10th case).

**stratum** *n.* (*pl.* **strata**) a layer (typically one of a number of parallel layers) in a structure, such as a level or class within society (see SOCIAL STRATIFICATION) or any of the subpopulations in survey SAMPLING.

**streaming** *n.* **1.** in audition, the perception of a sequence of sounds as a unitary phenomenon. Under certain conditions, several streams may be perceived nearly simultaneously, as in musical counterpoint. See FISSION. **2.** in education, the separation of students into different categories (streams) of academic ability based on, for example, test results or prior achievements, with each stream having a unique curriculum designed for the needs and capabilities of those within it.

**streaming media** audio and video that are seen and heard by the user as they are being delivered by the provider. Typically, the term refers to multimedia computer presentations, but television and radio are also considered to be streaming media.

**stream of consciousness** the notion that the contents of subjective consciousness are a continuous, dynamic flow of ideas, images, feelings, sensations, intuitions, and so forth, rather than a series of discrete, static components. Apart from its context in philosophy of

mind and studies of perception, the idea of consciousness as a stream also found highly influential expression in the MODERNISM of early 20th-century writers, such as James Joyce, Marcel Proust, and Virginia Woolf. Also called **stream of thought**. [introduced in 1890 by William JAMES]

**stream olfactometer** an OLEFACTOMETER that has a constant flow or stream of air into which an odorant can be introduced. See also BLAST OLEFACTOMETER.

**street hustler** see MALE HOMOSEXUAL PROSTITUTION.

**street intelligence** the skills people apply in their everyday lives. The term evolved from research conducted in the 1990s by psychologists Terezinha Nunes, David Carraher, and others, who found that street children in Brazil did very poorly in paper-and-pencil tests of the skills that they showed themselves well able to use in street contexts. The street intelligence of these children can be viewed as situated intelligence (see SITUATED COGNITION) that failed to transfer to a specific testing environment.

**strength of association** in statistics, the degree of relationship between two or more variables, as measured by such indices as a CORRELATION COEFFICIENT, COEFFICIENT OF DETERMINATION, ETA SQUARED, or OMEGA SQUARED.

**strephosymbolia** *n.* **1.** a perceptual disorder characterized by the mirrorlike reversal of objects. **2.** a reading difficulty characterized by a tendency to transpose or reverse letters while reading or writing (e.g., *tap* for *pat* or *p* for *q*). [defined in 1937 by U.S. psychiatrist Samuel Torrey Orton (1879–1948)]

**stress** *n.* **1.** the physiological or psychological response to internal or external stressors. Stress involves changes affecting nearly every system of the body, influencing how people feel and behave. For example, it may be manifested by palpitations, sweating, dry mouth, shortness of breath, fidgeting, accelerated speech, augmentation of negative emotions (if already being experienced), and longer duration of stress fatigue. Severe stress is manifested by the GENERAL ADAPTATION SYNDROME. By causing these mind–body changes, stress contributes directly to psychological and physiological disorder and disease and affects mental and physical health, reducing quality of life. See also CHRONIC STRESS. [first described in the context of psychology around 1940 by Hungarian-born Canadian endocrinologist Hans Selye (1907–1982)] **2.** in linguistics, emphasis placed on a word or syllable in speech, generally by pronouncing it more loudly and deliberately than its neighboring units and slightly prolonging its duration. See also ACCENT.

**stress casualty** a member of the armed forces who is unable to perform his or her duties because of exposure to operational stresses or risk factors. Such stress may result in somatic and behavioral symptoms. The primary cause is an imminent external threat to life, leading to inability to cope with the threat and a consequent overwhelming feeling of helplessness.

**stress-decompensation model** a concept of the development of abnormal behavior as a result of high levels of stress that lead to the gradual but progressive deterioration of normal behavior to a level that is highly disorganized and dysfunctional.

**stress hormone** a chemical that is part of the body's response to threats and other stressors. The primary stress hormone is CORTISOL. Others include EPINEPHRINE, NOREPINEPHRINE, and CORTICOTROPIN. Together they put the body

into a state of alertness (see FIGHT-OR-FLIGHT RESPONSE), accompanied by increased heart rate and respiration, dilated pupils, sweating, diminished sensitivity to pain, and redirection of blood from the gastrointestinal tract to muscles. Long-term exposure to stress hormones, as in ongoing child abuse or living in a war zone, is one of the causes of posttraumatic stress disorder and has been implicated in the etiology of depression and cancer.

**stress immunity** **1.** a highly developed capacity to tolerate emotional strain. **2.** failure to react to stressful situations or events.

**stress immunization** the concept that mild stress experienced early in life makes an individual better able to handle stress later in life.

**stress incontinence** **1.** a type of URINARY INCONTINENCE that occurs during physical exertion or physical experiences, such as laughing or coughing, that apply increased pressure to the abdomen and bladder. **2.** any form of INCONTINENCE whose origin is a high level of stress.

**stress-induced analgesia** a reduced sensitivity to pain that an organism may experience when exposed to extreme physical trauma. For example, soldiers in combat may ignore injuries and instead respond to other threats to their lives, and injured animals fleeing predators may ignore their injuries in order to avoid capture. The precise mechanism is uncertain but may be related to the production of large quantities of ENDORPHINS.

**stress-inoculation training (SIT)** a four-phase training program for stress management often used in COGNITIVE BEHAVIOR THERAPY. Phase 1 entails the identification of one's reactions to stress and their effects on functioning and psychological well-being; Phase 2 involves learning relaxation and self-regulation techniques; Phase 3 consists of learning coping self-statements (see SELF-STATEMENT TRAINING); and Phase 4 involves assisted progression through a series of increasingly stressful situations using imagery, video, role playing, and real-life situations until the individual is eventually able to cope with the original stress-inducing situation or event. SIT is based on the theory that exposure to moderately stressful events serves to build an individual's coping resources and that successful adaptation to these events may promote resilience to future stress. [developed by U.S. psychologist Donald Meichenbaum (1940– )]

**stress interview** an interview in which the person being questioned is deliberately subjected to confrontational, emotionally unsettling, or otherwise stressful conditions, such as a combination of aggressive questioning and environmental influences (e.g., harsh lighting). Such techniques are mainly associated with police or military interrogations; in PERSONNEL SELECTION, they have sometimes been used to assess an individual's ability to manage pressure and handle stress but are generally considered of questionable validity.

**stress management** the use of specific techniques, strategies, or programs—such as relaxation training, anticipation of stress reactions, and breathing techniques—for dealing with stress-inducing situations and the state of being stressed. See also PREVENTIVE STRESS MANAGEMENT.

**stressor** *n.* any event, force, or condition that results in physical or emotional stress. Stressors may be internal or external forces that require adjustment or COPING STRATEGIES on the part of the affected individual.

**stressor aftereffects** the residual effects that follow exposure to environmental stressors. Immediately after exposure to acute or chronic stressors (e.g., noise, crowding, traffic congestion, social conflict), individuals may manifest negative effects, such as reduced motivation to persist with a task or a decrease in altruistic behavior.

**stress reaction** a pronounced or excessive by-product of conditions of pressure or strain. Examples are extreme feelings of tension or panic, disorganized speech patterns, and accidents caused by the effects of alcohol, drugs, or emotional stress.

**stress test** **1.** an examination or evaluation designed to ascertain an individual's capacity to perform a relatively complex task under purposefully stressful conditions. **2.** a medical evaluation designed to assess the effects of stress, typically induced by physical exercise, on cardiac function. The most common of such procedures is a test in which the patient walks or runs on a treadmill while cardiac, respiratory, or other physiological processes are monitored. **3.** in MULTIDIMENSIONAL SCALING, a measure that indicates the RELIABILITY or GOODNESS OF FIT of the solution. Stress tests also are used to determine the number of dimensions to be included in the scaling solution.

**stress tolerance** the capacity to withstand pressures and strains and the consequent ability to function effectively and with minimal anxiety under conditions of stress. See also STRESS IMMUNITY.

**stress training** activities designed to help individuals understand the causes of stress and learn strategies for managing it. Training conducted in both simulated and real-life situations is seen as necessary to prepare individuals in high-risk occupations (e.g., soldiers) to operate in stressful conditions and to recognize and manage the effects of stress they are likely to experience on the job. See also COMBAT AND OPERATIONAL STRESS CONTROL.

**stress-vulnerability model** the theory that a genetic or biological predisposition to certain mental disorders (e.g., schizophrenia, mood disorders) exists and that psychological and social factors can increase the likelihood of symptomatic episodes. See also DIATHESIS-STRESS MODEL.

**stretch marks** see STRIA ATROPHICA.

**stretch receptor** a RECEPTOR cell that responds primarily to stretching of muscles. Stretch receptors include the MUSCLE SPINDLES of skeletal muscle.

**stretch reflex** the contraction of a muscle in response to stretching of that muscle. Stretch reflexes support the body against the pull of gravity. Also called **myotatic reflex**. See also EXTENSOR THRUST.

**stria atrophica** purplish scarlike lesions, later becoming white, on the breast, thighs, abdomen, and buttocks. They are associated with pregnancy, rapid growth during puberty and adolescence, Cushing's syndrome, and topical or prolonged treatment with corticosteroids. Known colloquially as **stretch marks**.

**striate cortex** the first region of the cerebral cortex that receives visual input from the thalamus, particularly from the LATERAL GENICULATE NUCLEUS. The striate cortex is located in the occipital lobe and contains a dense band of myelinated fibers in layer IVb that appears as a white stripe (stripe of Gennari). Neurons in the striate cortex project to visual areas in the PRESTRIATE CORTEX and to subcortical visual nuclei. Also called **Brodmann's area 17**; **primary visual cortex**. See also V1.

S

**striated muscle** see SKELETAL MUSCLE.

**stria terminalis** the smaller of the two efferent pathways from the AMYGDALA in the brain (see also VENTRAL AMYGDALOFUGAL PATHWAY). Its fibers carry impulses from the CORTICOMEDIAL GROUP of amygdaloid nuclei to the septal, hypothalamic, and thalamic areas.

**striatum** *n.* see BASAL GANGLIA.

**stria vascularis** see SCALA MEDIA.

**strict scrutiny** a test used to ascertain whether a law violates a fundamental right granted under the U.S. Constitution. The government must show that although such a law treats some people favorably and others unfavorably, it is nevertheless the least inequitable way of handling an important issue. The test is often invoked in the context of discrimination based on race, gender, or nationality.

**stridor dentium** see BRUXISM.

**stridulation** *n.* see VOCAL COMMUNICATION.

**string** *n.* in linguistics, a linear sequence of words or word elements that can be subjected to formal analysis.

**striving for superiority** in the INDIVIDUAL PSYCHOLOGY of Alfred ADLER, the idea that human beings are motivated by an innate, sovereign drive for realizing their full potential. This drive is defined as the urge for completion and perfection rather than for superiority in the sense of social status or domination over others.

**stroboscope** *n.* a device that allows very rapid presentation or illumination of a sequence of images. When sequential still images are presented by a stroboscope, the perception of movement is created, as in a motion picture.

**stroboscopic illusion** **1.** the apparent motion of a series of separate stimuli occurring in close consecutive order, as in motion pictures. **2.** the apparent motionlessness or reverse motion of a moving object, such as a rotating fan, produced by illuminating it with a series of intermittent light flashes. Also called **stroboscopic effect**. See also WINDMILL ILLUSION.

**stroke** *n.* disruption of blood flow to the brain, which deprives the tissue of oxygen and nutrients, causing tissue damage and loss of normal function and, potentially, tissue death. A stroke may result from a hemorrhage of a blood vessel in the brain (see HEMORRHAGIC STROKE) or an embolism or thrombus blocking an artery in the brain (see EMBOLIC STROKE; THROMBOTIC STROKE). This term is often used interchangeably with CEREBROVASCULAR ACCIDENT. See also CEREBRAL INFARCTION; CEREBROVASCULAR DISEASE; LACUNAR STROKE; TRANSIENT ISCHEMIC ATTACK.

**strong ego** see EGO STRENGTH.

**Strong Interest Inventory (SII)** an INTEREST TEST based on the concept that people who achieve success in one occupation are likely to have common interests and preferences that differentiate them from people who are successful in other occupations. The most recent version of the test, published in 2004, presents an inventory of 291 items, which the participant marks *strongly like*, *like*, *indifferent*, *dislike*, or *strongly dislike*. The items pertain to occupations, subject areas, activities (including leisure activities), contact with various kinds of people, and self-descriptive characteristics. The Strong Interest Inventory was formerly known as the **Strong-Campbell Interest Inventory (SCII)**, which was itself a revision of the **Strong Vocational Interest Blank** (1927). [Edward Kellogg STRONG JR.]

**strong law of effect** see LAW OF EFFECT.

**strong law of large numbers** see LAW OF LARGE NUMBERS.

**strong methods** **1.** problem-solving techniques that are specific to a particular domain or application, such as medical diagnosis. **2.** in artificial intelligence, programs that incorporate knowledge specific to a particular application or domain, such as knowledge of the rules of chess in building a chess-playing program. Compare WEAK METHODS.

**Stroop Color-Word Interference Test** a three-part test in which (a) color names are read as fast as possible; (b) the colors of bars or other shapes are rapidly named; and, most importantly, (c) color hues are named quickly when used to print the names of other colors (such as the word *green* printed in the color red). The degree to which the participants are subject to interference by the printed words is a measure of their cognitive flexibility, selective attention, and response inhibition (or disinhibition). In clinical neuropsychology, this test is commonly used to assess dysfunction of the frontal lobes of the brain. Also called **Stroop test**. See also RESPONSE CONFLICT. [J. Ridley Stroop (1897–1973), U.S. psychologist]

**Stroop effect** the finding that the time it takes a participant to name the color of ink in which a word is printed is longer for words that denote incongruent color names than for neutral words or for words that denote a congruent color. For example, if the word *blue* is written in red ink (incongruent), participants take longer to say “red” than if the word *glue* is written in red ink (neutral) or if the word *red* is written in red ink (congruent). See STROOP COLOR-WORD INTERFERENCE TEST. [J. Ridley Stroop]

**structural analysis** **1.** in psychology, any theory of the organization of mind or personality that attempts to differentiate between component parts and to define the relationship of part to part and part to whole. Such an analysis can be contrasted with one based on function, dynamics, or behavior. See PERSONALITY STRUCTURE; STRUCTURAL MODEL. **2.** in linguistics, an analysis of a word, phrase, sentence, or longer unit in terms of its formal CONSTITUENTS. See PHRASE-STRUCTURE GRAMMAR. **3.** any analysis based on the ideas or methods of STRUCTURALISM.

**structural approach** see STRUCTURAL MODEL.

**structural coefficient** in STRUCTURAL EQUATION MODELING, a measure of the amount of change expected in an outcome or DEPENDENT VARIABLE given a one-unit change in the causal or INDEPENDENT VARIABLE and no change in any other variable.

**structural commitment** in U.S. sociologist Michael P. Johnson’s tripartite model of marital commitment, a form of commitment in which a person feels tied to a relationship because of external factors. For example, it is often engendered by the anticipated financial cost or lost social or family connections that would result from ending a relationship. It often leads people to remain in dissatisfying relationships. Also called **constraint commitment**. Compare MORAL COMMITMENT; PERSONAL COMMITMENT.

**structural constraint theory** see NEONATIVISM.

**structural disorder** a disorder related to a defect in or damage to the structure of an organ or tissue, such as the nervous system.

**structural equation modeling (SEM)** any of a broad range of multivariate analysis methods, including

FACTOR ANALYSIS and PATH ANALYSIS, that examine VARIANCES and COVARIANCES in order to find interrelationships among LATENT VARIABLES. For example, assume a researcher hypothesizes that job satisfaction leads to happiness. Both are latent variables that are not directly observable but are defined in terms of other measurable variables, such as judgments of job performance from supervisors and peers; self-reports about attitudes toward pay, supervision, type of work, and other job characteristics; results from PSYCHOLOGICAL TESTS; and so forth. The researcher could use the measurable data to generate an equation representing the strength and nature of the links among the latent variables.

**structural family therapy** a type of FAMILY THERAPY that assesses the subsystems, boundaries, hierarchies, and coalitions within a family (its structure) and focuses on direct interactions between the family members (**enactment**) as the primary method of inducing positive change. Structural family therapy stresses that when appropriately induced to do so, families with problems will discover their own alternatives to their ineffective patterns of relating to one another. For example, a structural family therapist working with a family whose daughter is anorexic would examine such family issues as the framework of authority, the rules that govern the assumption of roles, the various functions that members perform, and the coalitions created by the bonding of certain family members, and then would encourage all members to use this information to develop more productive patterns of interaction that in turn can mitigate the stresses within the family context surrounding the daughter's condition. Also called **structural therapy**. [developed in the 1970s by Argentinian-born U.S. family therapist Salvador Minuchin (1921– )]

**structural group** a therapeutic group made up of individuals selected for those characteristics that would make them most likely to be successful in achieving the goals sought in the therapy. People of different types, temperaments, personalities, and educational levels are combined in a group, based on the concept that their interaction will maximize each other's benefits in the therapeutic process. Also called **structured group**. [devised by Jacob L. MORENO]

**structural hypothesis** see STRUCTURAL MODEL.

**structural integration** see ROLFING.

**structuralism** *n.* **1.** a movement considered to be the first school of psychology as a science, independent of philosophy. Usually attributed to Wilhelm WUNDT, but probably more strongly and directly influenced by Edward Bradford TITCHENER, structuralism defined psychology as the study of mental experience and sought to investigate the structure of such experience through a systematic program of experiments based on trained INTROSPECTION. Also called **structural psychology**. **2.** a movement in various disciplines that study human behavior and culture that enjoyed particular currency in the 1960s and 1970s. The movement took its impetus from the radically new approach to linguistic analysis pioneered by Swiss linguist Ferdinand de Saussure (1857–1913). Against the prevailing historical and comparative approaches, Saussure maintained that a language is a closed system that must be approached through the detail of its internal structure; linguistic SIGNS (written or spoken words) acquire meaning not through their relationships to external REFERENTS but through their structural relationships to other signs in the same system (see ARBITRARY SYMBOL). The meaning of any

particular use of language is therefore grounded in the total abstract system of that language, which is largely defined by a pattern of functional contrasts between elements (see BINARY FEATURE; MINIMAL PAIR). The structuralist model of language was extended to cover essentially all social and cultural phenomena, including human thought and action, in the work of French anthropologist Claude Lévi-Strauss (1908–2009). For structuralists in anthropology and the other social sciences, there is a connection between the events of the lived world and a deeper structure of abstract relationships and ideas that provides meaning to the events. Structuralist explanations play down individual autonomy and agency, positivistic science, and linear-time causation in favor of explanations in terms of structural and systemic influences operating in the present to produce rule-governed behavior, the true nature of which can be revealed as the underlying structures are revealed. In the 1960s, structuralist ideas exerted a major influence on literary studies; they also provided a basic intellectual framework for the new field of SEMIOTICS, which studies the ways in which verbal and nonverbal signs acquire meaning within particular codes of signification. During subsequent decades, structuralism increasingly gave way to POSTSTRUCTURALISM.

**structuralist** **1.** *n.* a therapist who believes that changing the organizational structure of a group or system, such as a family, will change and improve its patterns of interaction. **2.** *n.* an adherent of structuralism. **3.** *adj.* of or relating to structuralism.

**structural matrix** see STRUCTURED INTERACTIONAL GROUP PSYCHOTHERAPY.

**structural model** **1.** in classical psychoanalytic theory, the view that the personality comprises three divisions or functions: (a) the ID, which represents instinctual drives; (b) the EGO, which controls id drives and mediates between them and external reality; and (c) the SUPEREGO, which comprises moral precepts and ideals. Sigmund FREUD proposed this model in 1923 to replace his earlier TOPOGRAPHIC MODEL, in which the mind was divided into three regions: the UNCONSCIOUS, PRECONSCIOUS, and CONSCIOUS. Also called **structural approach**; **structural hypothesis**; **structural theory**. See also DYNAMIC MODEL; ECONOMIC MODEL. **2.** in statistics, any theoretical representation of the relationships among a DEPENDENT VARIABLE and multiple INDEPENDENT VARIABLES, whether CONTINUOUS or DISCRETE. Techniques to derive such models include LATENT CLASS ANALYSIS, PATH ANALYSIS, and STRUCTURAL EQUATION MODELING.

**structural psychology** see STRUCTURALISM.

**structural therapy** **1.** see STRUCTURAL FAMILY THERAPY. **2.** a system of treatment for children with autism, which provides a structured environment emphasizing physical and verbal stimulation in a gamelike setting. The purpose is to increase the amount and variety of stimuli received by the children, thereby helping them relate to their environment in a more realistic manner.

**structural zero** an entry in a table that is certain to be zero because it corresponds to an impossible outcome, as opposed to an entry that has an empirical value of zero. For example, in studying friendships, one might ask each of 15 people to indicate who among the others is a friend. This would yield a  $15 \times 15$  contingency table or matrix, with 1 representing "is a friend" and 0 representing "is not a friend." Although there would be empirical zeros in some

cells to represent not-a-friend responses, all entries along the diagonal of the matrix are structural zeros since they represent one person's response with regard to himself or herself rather than to another person.

**structure** *n.* **1.** a relatively stable arrangement of elements or components organized to form an integrated whole. Structure is often contrasted with FUNCTION to emphasize how something is organized or patterned rather than what it does. See also BIDIRECTIONALITY OF STRUCTURE AND FUNCTION. **2.** a complex entity consisting of organized components. **3.** according to Jean PIAGET, any of the entities that together comprise the enduring KNOWLEDGE BASE by which children interpret their world. A structure is equivalent to a SCHEME. —**structural** *adj.*

**structure coefficient** **1.** in REGRESSION ANALYSIS, a CORRELATION COEFFICIENT indicating the extent of relationship between scores on a particular MANIFEST VARIABLE and scores on a latent or predicted variable derived from the entire set of variables. It is used to quantify the importance of an observed variable. **2.** in DISCRIMINANT ANALYSIS, a value representing the association between a particular variable being considered as a differentiator of group membership and the DISCRIMINANT FUNCTION scores derived from the full set of predictor variables.

**structured autobiography** see AUTOBIOGRAPHY.

**structured group** see STRUCTURAL GROUP.

**structured interactional group psychotherapy** a form of GROUP THERAPY in which the therapist provides a **structural matrix** for the group's interactions. This is usually achieved by selecting a different member of the group to be the focus of the interaction—the TARGET PATIENT—in each session. [developed by U.S. psychiatrists Harold I. Kaplan (1928–1998) and Benjamin J. Sadock (1933– )]

**structured interview** a method for gathering information, used particularly in surveys and personnel selection, in which questions, their wordings, and their order of administration are determined in advance. The choice of answers tends to be fixed and determined in advance as well. With structured interviews, answers can be aggregated and comparisons can be made across different samples or interview periods; interviewees can be assessed consistently (e.g., using a common rating scale); and ORDER EFFECTS are minimized. Also called **standardized interview**. Compare UNSTRUCTURED INTERVIEW. See also PATTERNED INTERVIEW.

**structured learning** a complex system of psychotherapy based on the idea of psychological skills training, that is, teaching individuals the skills associated with leading healthy and satisfying lives and then helping them gain the ability to consistently and reliably apply these skills outside of the therapeutic setting. This approach involves four essential components: MODELING, ROLE PLAY, performance feedback, and TRANSFER OF TRAINING. The individual is provided with examples of specific behavior to be imitated, is allowed to practice that behavior, is given feedback regarding the performance of the behavior, and completes HOMEWORK assignments that encourage the use of the behavior in real-world situations. [developed in the mid-1970s by U.S. psychologists Arnold P. Goldstein (1933–2002), Robert P. Sprafkin (1940– ), and N. Jane Gershaw (1945– )]

**structured learning group** a type of INTERPERSONAL LEARNING GROUP that helps participants gain self-insight,

develop improved interpersonal skills, and solve interpersonal problems through a series of relatively specific exercises, activities, and assignments.

**structured observation** a systematic method of collecting behavioral data within a controlled environment, often used in research with infants and young children, in which observers measure overt actions and interpersonal processes. In structured observation, researchers (a) select which behaviors are of interest and which are not, (b) clearly define the characteristics of each behavior so that observers all agree on the classification, and (c) note the occurrence and frequency of these targeted behaviors in the situation under analysis. INTERACTION PROCESS ANALYSIS and SYMLOG are examples. Structured observation differs from NATURALISTIC OBSERVATION, which involves observing individuals in their own environments outside of the laboratory.

**structured play** organized play that is governed by rules and controlled or directed by an adult. A teacher-initiated classroom play activity is an example. Compare FREE PLAY.

**structured Q sort** see Q SORT.

**structured stimulus** a well-defined, well-organized stimulus, the perception of which is influenced more by the characteristics of the stimulus than by those of the perceiver. Compare UNSTRUCTURED STIMULUS.

**structure of an attitude** the set of properties related to the content of mental representations associated with an attitude, the number of these representations, and the strength and the pattern of associations among these representations. See also TRIPARTITE MODEL OF ATTITUDES.

**structure of intellect model (SOI)** a model of intelligence that postulates five operations (cognition, memory, divergent production, convergent production, evaluation), six products (units, classes, relations, systems, transformations, implications), and five contents (symbolic, semantic, behavioral, auditory, visual), for a total of 150 separate factors of intelligence (120 in an earlier version of the theory). The evidence for the theory is weak and in large part was refuted by the work of U.S. psychologist John L. Horn (1928–2006). See also GUILFORD DIMENSIONS OF INTELLIGENCE. [initially proposed in the 1950s by Joy Paul GUILFORD]

**structures of the whole** see OPERATION.

**structure word** see FUNCTION WORD.

**structuring** *n.* **1.** the explanation by a counselor or therapist, usually during the first session of a course of treatment, of the specific procedures and conditions of the therapeutic process. This explanation includes the intended results of treatment, time restrictions, fees, and the function and responsibilities of both client and counselor or therapist. See also CONTRACT. **2.** in education, the use of behavioral instructions to a student to decrease disruptions in the classroom.

**struggle for existence** see COMPETITION FOR RESOURCES.

**strychnine** *n.* an alkaloid derived from NUX VOMICA. It is a stimulant of the central nervous system (see CNS STIMULANT)—through its ability to antagonize the inhibitory neurotransmitter glycine—and a powerful convulsant, with death usually resulting from paralysis of muscles of respiration. Strychnine has long been used as a rodenti-

cide, and this use continues to the present; there are, however, no clinical applications for it. No marked tolerance develops for it, and increased susceptibility to poisoning is likely from repeated exposure.

**student counseling** see EDUCATIONAL COUNSELING.

**Studentization** *n.* a procedure to eliminate a NUISANCE PARAMETER in particular calculations. It transforms a statistic whose distribution of probable values relies upon the unknown parameter into one whose distribution relies on quantities that can be derived from the sample data. Such transformed statistics are described as “Studentized.” [**Student**, pseudonym of William S. Gosset (1876–1937), British statistician]

**Studentized range statistic** (symbol: *q*) a statistic used in TUKEY’S HONESTLY SIGNIFICANT DIFFERENCE TEST and other MULTIPLE COMPARISON TESTS to establish CRITICAL VALUES for rejecting the NULL HYPOTHESIS. It is the RANGE of a sample expressed in units of the standard distribution for that sample. [**Student**, pseudonym of William S. Gosset]

**Studentized residual** in REGRESSION ANALYSIS, a standardized statistic describing the variation between obtained and predicted values. It is calculated by obtaining the difference between the empirical value of an observation and the value of that observation predicted by a model, and then dividing that difference (called a RESIDUAL) by an estimated STANDARD DEVIATION. Studentized residuals are used to identify REGRESSION EQUATIONS that are a poor fit for the observed data. [**Student**, pseudonym of William S. Gosset]

**student’s disease** the condition of individuals who believe they have the symptoms of a disease or mental disorder that they have been studying or that they have read or heard about.

**students’ evaluation of teaching (SET)** a practice in which students fill out questionnaires or forms regarding the capabilities and performance of their instructor, commonly toward the end of a learning sequence, and instructors then use the information to modify their format or teaching style. SET often includes informal, individualized evaluations, as well as more formal, standardized forms. Also called **student–teacher evaluation**.

**Students of the International Positive Psychology Association (SIPPA)** see INTERNATIONAL POSITIVE PSYCHOLOGY ASSOCIATION.

**Student’s *t* distribution** see T DISTRIBUTION. [**Student**, pseudonym of William S. Gosset]

**Student’s *t* test** see T TEST. [**Student**, pseudonym of William S. Gosset]

**student–teacher evaluation** see STUDENTS’ EVALUATION OF TEACHING.

**study 1. *n.*** a research investigation conducted for the purpose of understanding, explaining, describing, or predicting some phenomenon of interest. It may be conducted in the laboratory or natural environment, and it may yield quantitative or qualitative data. **2. *n.*** any attempt to acquire and remember information. **3. *vb.*** to engage in study.

**Study of Values** see ALLPORT–VERNON–LINDZEY STUDY OF VALUES.

**study-phase retrieval theory** see SPACING EFFECT.

**study skill** any method used to facilitate the process of

learning material, such as outlining, taking notes, underlining, or silent recitation.

**stupor** *n.* **1.** a state of lethargy and impaired consciousness, in which an individual is disoriented, unresponsive, and immobile. **2.** inability to speak (see MUTISM).

**Sturge–Weber syndrome** a congenital disorder marked by malformation of meningeal blood vessels (hemior leptomeningeal angioma), a facial PORT-WINE STAIN, glaucoma, and focal-motor seizures. Skin pigmentation may occur on one or both sides of the face or extend into the scalp area. Other features include muscle weakness, paralysis, developmental delay, and intellectual disability. Also called **encephalofacial angiomatosis**; **Kalischer syndrome**; **Parkes–Weber syndrome**; **Sturge–Weber–Dimitri syndrome**. [William A. Sturge (1850–1919) and Frederick Parkes Weber (1863–1962), British physicians; Vicente Dimitri (1885–1955), Austrian physician; S. Kalischer, German physician]

**Sturm und Drang period** see STORM-AND-STRESS PERIOD.

**stuttering** *n.* a disturbance in the normal fluency and time sequencing of speech. It is characterized by frequent repetition or prolongation of sounds, syllables, or words, with hesitations and pauses that disrupt speech. The disorder interferes with one’s ability to communicate with others, especially during stressful situations (e.g., public speaking), and it can be exacerbated by one’s awareness of and anxiety over the dysfluency. The struggle to speak may also be accompanied by behaviors such as rapid eye blinking, trembling lips, or fist clenching. By contrast, speaking in unison with another person, reading orally, or singing may temporarily reduce stuttering. The disorder affects about 1% of all children, with onset occurring between 2 and 7 years of age. Mild cases usually recover spontaneously by the age of 16, but more severe cases may persist into adulthood. In formal diagnostic nomenclature, *stuttering* is the term used in *DSM–IV–TR*; it is identified as **childhood-onset fluency disorder** in *DSM–5*. Also called **stammering**. See also PRIMARY STUTTERING; SECONDARY STUTTERING. Compare CLUTTERING. —**stutter** *vb.*, *n.*

**stuttering gait** a gait characterized by hesitancy in taking steps; a walking pattern observed in certain patients with conversion disorder or schizophrenia. In some cases, it is neurological in origin, as with Parkinson’s disease.

**STX** abbreviation for SAXITOXIN.

**stylistic ratings** a system of evaluating works of art in terms of their technical attributes, as opposed to the reactions or preferences of those who view the art. Stylistic ratings may be based on factors such as shapes, lines, composition, surface textures, and reproduction of objects or people portrayed.

**stylus maze** a maze that is “run” by moving a stylus through the various pathways. The task may be performed visually or tactually.

**subacute spongiform encephalopathy (SSE)** see CREUTZFELDT–JAKOB DISEASE.

**subarachnoid hemorrhage** bleeding into the subarachnoid space surrounding the brain. It may be the result of trauma or a ruptured ANEURYSM. Initial symptoms are caused by increasing INTRACRANIAL PRESSURE and can include headache and loss of consciousness as escaping blood distends the spaces beneath the arachnoid (see CIS-

TERNA), causing compression or spasm of the blood vessels of the thalamus and upper brainstem.

**subarachnoid space** a space beneath the delicate ARACHNOID MATER, the middle of the three MENINGES that surround the brain and spinal cord. It is occupied by cerebrospinal fluid, which drains into the SUPERIOR SAGITTAL SINUS through ARACHNOID GRANULATIONS.

**subcallosal gyrus** a portion of the LIMBIC SYSTEM behind the CINGULATE CORTEX. Its functions are reciprocal to those of the cingulate cortex: It inhibits motor neuron activity, whereas the cingulate cortex enhances motor neuron functions.

**subception** *n.* **1.** short for SUBLIMINAL PERCEPTION. **2.** according to Carl ROGERS, a strategy for keeping unconscious a subliminal, emotion-provoking stimulus that threatens or is incongruent with one's self-concept.

**subcommissural organ** a group of secretory EPENDYMAL CELLS on the dorsal wall of the third ventricle of the brain, near the CEREBRAL AQUEDUCT. One of the CIRCUMVENTRICULAR ORGANS, its exact function is unknown.

**subconscious** *n.* a lay term that is widely used to denote the UNCONSCIOUS or PRECONSCIOUS mind as described by Sigmund FREUD or the general idea of SUBLIMINAL CONSCIOUSNESS. It is also popularly associated with AUTOSUGGESTION and HYPNOSIS. Because of its imprecision, the term is now generally avoided by psychologists. See also COCONSCIOUSNESS. —**subconscious** *adj.*

**subcortical** *adj.* relating to structures or processes in the brain that are located or take place beneath the CEREBRAL CORTEX. See also SUBCORTICAL CENTER.

**subcortical aphasia** aphasia resulting from damage to subcortical (deeper) areas of the brain (e.g., the basal ganglia) rather than to cortical areas.

**subcortical arteriosclerotic encephalopathy** see BINSWANGER'S DISEASE.

**subcortical center** any region of the brain at a level below the CEREBRAL CORTEX that has a particular function or functions. Subcortical centers include the THALAMUS, HYPOTHALAMUS, and BASAL GANGLIA. Within each subcortical structure may be several special centers, such as nuclei of the hypothalamus that regulate sleep, water balance, protein metabolism, and sexual activity.

**subcortical dementia** dementia caused by damage to or dysfunction of the subcortical (deeper) structures of the brain that may be due, for example, to Parkinson's disease. It is marked by cognitive slowing, memory impairment (specifically, poor encoding and retrieval but intact storage), visuospatial abnormalities, and mood and affect disturbances. Compare CORTICAL DEMENTIA.

**subcortical learning** **1.** learning that occurs in areas of the brain below the cortex. For example, some simple habits or associations may be learned subcortically (e.g., in the cerebellum). **2.** learning that occurs during cortical spreading depression; that is, during a temporary suppression of cortical activity induced by an injection of potassium chloride into the cortex.

**subcultural delinquency** see SOCIALIZED DELINQUENCY.

**subculture** *n.* a group that maintains a characteristic set of customs, behaviors, interests, or beliefs that serves to

distinguish it from the larger culture in which the members live. See also COUNTERCULTURE. —**subcultural** *adj.*

**subculture of violence** see CULTURE OF HONOR.

**subcutaneous injection** injection of a drug beneath the skin, often in the upper arm or thigh where there is an adequate layer of subcutaneous tissue. Although the subcutaneous route is used mainly to inject fluids, medications may also be administered subcutaneously in the form of slowly absorbed pellets. Also called **hypodermic injection**. See also ADMINISTRATION; SKIN POPPING.

**subcutaneous sensibility** the sensitivity of nerve receptors (e.g., PACINIAN CORPUSCLES) beneath the skin.

**subdelirious state** the precursor of full delirium, marked by restlessness, headache, irritability, hypersensitivity to sound and visual stimuli, and emotional instability. Also called **subdelirium**.

**subdural** *adj.* lying beneath the DURA MATER, the outermost of the coverings (meninges) of the brain and spinal cord.

**subdural hematoma** an accumulation of blood due to bleeding between the DURA MATER membrane and the brain surface. Because the hematoma enlarges and cannot escape through the skull, it causes pressure that distorts brain structures. The bleeding may occur over a period of days or weeks, producing symptoms of confusion, memory loss, or other neurological deficits that may be mistaken as signs of dementia in an older person.

**subdural hemorrhage** bleeding beneath the DURA MATER, the outermost of the meningeal membranes that surround the brain. It typically occurs as a result of head injury, and the specific symptoms may vary according to the brain area affected by the bleeding.

**subfecundity** *n.* see FECUNDITY.

**subfornical organ** a structure in the brain that is responsive to ANGIOTENSIN II and contributes to thirst and drinking behavior. One of the CIRCUMVENTRICULAR ORGANS, it is located below the FORNIX.

**subgoal** *n.* a goal that serves as an intermediary step to attaining an ultimate goal (i.e., the GOAL OBJECT). For example, completing an outline of an essay may be a subgoal of completing the essay itself—the ultimate goal.

**subgranular zone** see DENTATE GYRUS.

**subiculum** *n.* (*pl.* **subicula**) a region of the forebrain adjacent to the HIPPOCAMPUS that has reciprocal connections with the hippocampus and the DENTATE GYRUS. It forms part of the HIPPOCAMPAL FORMATION. Also called **hippocampal gyrus**.

**subitize** *vb.* to perceive how many objects are presented, without counting. See APPREHENSION SPAN. [from Latin *subito*, "at once"]

**subject** *n.* **1.** generally, the individual human or nonhuman animal that takes part in an experiment or research study and whose responses or performance are reported or evaluated; less frequently, the "subject" may also be an institution, group, or other entity. Many now recommend that the term PARTICIPANT be used for humans, considering the word *subject* to be depersonalizing and to imply passivity and submissiveness on the part of the experimentee. **2.** in linguistics, the principal noun phrase in a clause or sentence about which something is stated (compare PREDICATE). The subject is usually (but not always) the AGENT of

the main action and in English can usually be identified as the noun phrase whose number and person govern the form of the main verb. **3.** an area or branch of knowledge or a course of study.

**subject bias** the influence that research participants' knowledge about aspects of the research has on their responses to experimental conditions and manipulations. For example, a participant who knows he or she is in the treatment group as opposed to the control group might behave differently than he or she would otherwise. See DEMAND CHARACTERISTICS.

**subject history** **1.** background information about a participant in a study, such as sociological, occupational, and educational data. **2.** events that a research participant experiences outside of the controlled environment of the study and that may threaten its INTERNAL VALIDITY. See HISTORY EFFECT.

**subjection** *n.* the state of being under the control of another individual or of a government or other organization, especially where this is felt to be oppressive. See also SOCIAL SUBORDINATION.

**subjective** *adj.* **1.** taking place or existing only within the mind. **2.** particular to a specific person and thus intrinsically inaccessible to the experience or observation of others. **3.** based on or influenced by personal feelings, interpretations, or prejudices. Compare OBJECTIVE.

**subjective attribute** a perceptual quality that is uniquely dependent on the individual who experiences it (e.g., a particular taste or color).

**subjective colors** see FECHNER'S COLORS.

**subjective competitive situation** an individual's perception, evaluation, and acceptance of a situation as meeting the criteria of an OBJECTIVE COMPETITIVE SITUATION.

**subjective contour** an edge or border perceived in an image as a result of the inference of the observer. A common form of a KANIZSA FIGURE contains a triangle with sides that consist of subjective contours. Also called **illusory contour**.

**subjective-equality point** see POINT OF SUBJECTIVE EQUALITY.

**subjective expected utility (SEU)** a hypothetical value that people are presumed to compute (nearly always nonconsciously) in making a rational choice between alternatives, especially in economic matters. When choosing from a fixed set of alternatives, each associated with (a) a given utility value and (b) a SUBJECTIVE PROBABILITY estimate of the desired outcome, people act so as to maximize the value of the product (a)  $\times$  (b).

**subjective expected value** in analyses of decision making, the extent to which an outcome is (a) desired or valued and (b) thought to be probable by the decision maker. The choice of one alternative over others is to a considerable extent a function of the personal (or subjective) value placed by an individual on a specific act or outcome as well as the perceived probability (expectation) that the given alternative will lead to that outcome. Many analyses assume that the alternative selected is the one for which the product of the expectation and the subjective value is the highest.

**subjective idealism** in philosophy, the metaphysical position that what is normally considered the EXTERNAL

WORLD is in fact constructed partly or wholly by individual perceiving minds. See IDEALISM; SOLIPSISM.

**subjective norm** a perception that an individual has regarding whether people important to that individual believe that he or she should or should not perform a particular behavior. See also THEORY OF PLANNED BEHAVIOR; THEORY OF REASONED ACTION.

**subjective organization** the creation of one's own idiosyncratic set of associations or groupings among items to be learned in order to facilitate memory. [proposed by Endel TULVING]

**subjective prior** see PRIOR DISTRIBUTION.

**subjective probability** an estimate, derived from subjective experience, of the likelihood of a given event or outcome. The subjective probability estimate is used in calculating the SUBJECTIVE EXPECTED UTILITY. Also called **personal probability**.

**subjective psychology** a psychological approach that focuses on introspective or phenomenological data. Compare OBJECTIVE PSYCHOLOGY.

**subjective responsibility** in the moral reasoning typical of children over the age of 10, the idea that an individual's motives should be taken into account when judging an act. Compare OBJECTIVE RESPONSIBILITY. [proposed by Jean PIAGET]

**subjective scoring** see OBJECTIVE SCORING.

**subjective test** an assessment tool that is scored according to personal judgment or to standards that are less systematic than those used in OBJECTIVE TESTS. Some essay examinations are examples of a subjective test. Although there are no necessarily right or wrong answers, responses are scored based on appraisals of their appropriateness or quality.

**subjective tone** any tonelike sound that is perceived by an individual but not present in the acoustic input. This covers a broad range of percepts, including COMBINATION TONES, TINNITUS, and AUDITORY HALLUCINATIONS.

**subjective visual field** the VISUAL FIELD as experienced by a particular observer.

**subjective well-being (SWB)** one's appraisal of one's own level of happiness and LIFE SATISFACTION. In self-report measures of subjective well-being, two components are examined: one's **affective well-being**, which refers to the presence of pleasant affect (e.g., feelings of happiness) versus the absence of unpleasant affect (e.g., depressed mood), and one's **cognitive well-being**, which refers to one's evaluation of life overall (i.e., global life satisfaction) and of specific life experiences (e.g., job satisfaction). These components differ in their stability and variability over time and in their relations with other variables. For instance, the association between income and affective well-being is weaker than that between income and cognitive well-being, as demonstrated by reports that unemployed persons had significantly less life satisfaction than employed persons but did not differ in their daily affective well-being.

**subjectivism** *n.* **1.** in general, any position holding that judgments of fact or value reflect individual states of mind rather than states of affairs that can be said to be true or false independent of individual interpretation. **2.** in ethics, the proposition that the ideals, such as "the good," to which ethical propositions refer are reflections of personal



judgment rather than independent realities. Subjectivism holds that ethical prescriptions reduce to mere statements of personal or cultural preference. Compare OBJECTIVISM. —**subjectivist** *n., adj.*

**subjectivity** *n.* **1.** in general, the tendency to interpret data or make judgments in the light of personal feelings, beliefs, or experiences. **2.** in empirical research, the failure to attain proper standards of OBJECTIVITY.

**subject matching** see MATCHING.

**subject-matter expert** on a CROSS-FUNCTIONAL TEAM, a member who contributes highly specialized knowledge of or expertise in a specific job, task, or skill.

**subject maturation** see MATURATION.

**subject of consciousness** **1.** the observing ego, or “I.” See also NOMINATIVE SELF; SELF AS OBSERVER. **2.** the subject matter, or contents, of conscious experience. Compare OBJECT OF CONSCIOUSNESS.

**subject role** a coherent set of behaviors assumed by a research participant in response to his or her perceptions of what is required or expected in the situation.

**subject sophistication** a familiarity with general research procedures that may influence a person’s behavior as a participant in a study. It is an issue of particular concern in DECEPTION RESEARCH, as participants may significantly modify their behavior (e.g., specifically searching for any evidence of deceit in the experimental procedure) as they become increasingly knowledgeable about the nature of deception in experiments. Sources of sophistication include participating in research previously, talking to participants from other studies, and reading about studies in the mass media.

**subjects’ rights** see PARTICIPANTS’ RIGHTS.

**subjects-to-variables ratio** the number of research participants compared to the number of research variables (e.g., 5 to 1) in a study. The subjects-to-variables ratio provides a guideline for determining what size sample to use to ensure the greatest POWER when conducting a statistical analysis, such as MULTIPLE REGRESSION or FACTOR ANALYSIS.

**subject variable** an experience or characteristic of a research participant that is not of primary interest but nonetheless may influence study results and thus must be accounted for during experimentation or data analysis. Examples include age, marital status, religious affiliation, and intelligence. A variable of this type is neither manipulated by the experimenter, as an INDEPENDENT VARIABLE might be, nor is it usually changed in the course of the experiment, as a DEPENDENT VARIABLE might be. Also called **background variable**.

**subjunctive** *n.* in linguistics, the MOOD of a verb used to indicate that a situation is hypothetical or not yet realized, as in *If I were in your position* or *I insist that she go now*. Compare IMPERATIVE; INDICATIVE; INTERROGATIVE.

**sublimation** *n.* in classical psychoanalytic theory, a DEFENSE MECHANISM in which unacceptable sexual or aggressive drives are unconsciously channeled into socially acceptable modes of expression and redirected into new, learned behaviors, which indirectly provide some satisfaction for the original drives. For example, an exhibitionistic impulse may gain a new outlet in choreography; a voyeuristic urge may lead to scientific research; and a dangerously aggressive drive may be expressed with impunity on

the football field. As well as allowing for substitute satisfactions, such outlets are posited to protect individuals from the anxiety induced by the original drive. —**sublimate** *vb.*

**Sublimaze** *n.* a trade name for FENTANYL.

**subliminal** *adj.* denoting or relating to stimuli that are below the DIFFERENCE THRESHOLD or ABSOLUTE THRESHOLD. —**subliminally** *adv.*

**subliminal consciousness** **1.** a level of consciousness at which a stimulus may affect behavior even though the person is not explicitly aware of it. See SUBLIMINAL PERCEPTION. **2.** in the psychological theory of British writer Frederick William Henry Myers (1843–1901), a marginal region of consciousness that he posited as an explanation for TELEPATHY and other alleged parapsychological phenomena. Myers believed that the subliminal consciousness had a transpersonal dimension, and this aspect of his theory is sometimes held to have influenced Carl JUNG’s notion of the COLLECTIVE UNCONSCIOUS. See also SUPERCONSCIOUS.

**subliminal learning** information, habits, or attitudes acquired from exposure to stimuli presented below the threshold for conscious awareness (i.e., subliminally).

**subliminal perception** the registration of stimuli below the level of awareness, particularly stimuli that are too weak (or too rapid) for an individual to consciously perceive them. There has been much debate about whether responses to subliminal stimuli actually occur and whether it is possible for subliminal commands or advertising messages to influence behavior. Experimental evidence indicates that subliminal commands may not directly affect behavior but may prime later responses (see SUBLIMINAL PRIMING). Compare SUPRALIMINAL PERCEPTION.

**subliminal persuasion** the presentation of information in a manner that may change people’s attitudes without their conscious awareness of the content of the information to which they have been exposed. Subliminal persuasion usually involves extremely brief presentations of visual stimuli (e.g., words, pictures).

**subliminal priming** stimulation below the threshold of awareness that changes the probability of the later occurrence of related cognitive tasks. See PRIMING; REPETITION PRIMING.

**subliminal process** see UNCONSCIOUS PROCESS.

**subliminal propaganda** a form of propaganda in which images or words are displayed too quickly for the conscious mind to perceive. They may, however, influence a person nonconsciously.

**subliminal stimulation** stimulation that is below the threshold intensity required to elicit a response (see SUBLIMINAL PERCEPTION). Also called **subliminal stimulus**.

**submission** *n.* compliance with or surrender to the requests, demands, or will of others. Compare DOMINANCE.

**submissiveness** *n.* a tendency to comply with the wishes or obey the orders of others. —**submissive** *adj.*

**submissive signal** in animal behavior, a signal given by a subordinate to a dominant animal indicating that it will not continue to compete with the other for resources. By using submissive signals, low-ranking individuals avoid being attacked, and overall levels of physical aggression are reduced. See APPEASEMENT BEHAVIOR; THREAT DISPLAY.

**subnormal** *adj.* denoting something that is below (often significantly below) the normal or expected level. The use

of this term with reference to intelligence is now largely obsolete, and the term BELOW AVERAGE is generally used.

**subnormal period of neuron** a period of time, measured in milliseconds, when neuron excitability is below normal. It follows an absolute REFRACTORY PERIOD or a period of supernormal excitability.

**suboccipital puncture** an alternative procedure to LUMBAR PUNCTURE for obtaining access to the SUBARACHNOID SPACE for diagnostic or therapeutic purposes. It involves the insertion of a needle into the CISTERNA MAGNA through an area near the base of the skull to collect cerebrospinal fluid. Also called **cistern puncture**.

**subordinate** *n.* **1.** one who is subject to the control or authority of another, as in the subordinate-supervisor relationship in the workplace. **2.** in nonhuman animal social groups, an individual who in competition for resources is less likely to obtain the resources than another animal. In a stable social group, individuals readily learn which are dominant and which are subordinate so that resource distribution occurs with minimal fighting or direct aggression. See also ANIMAL DOMINANCE.

**subordinate category** a subdivision of a BASIC-LEVEL CATEGORY formed at a more specific level of categorization. For example, *Siamese cat* is a subordinate category of the basic-level category *cat*, and *rocking chair* is a subordinate category of *chair*. A subordinate category is usually characterized by (a) a high level of resemblance among its members and (b) a relatively low level of difference between its members and those of neighboring categories (e.g., Siamese cats tend to look quite similar to each other but do not look very different from Orientals). The name of the subordinate category often incorporates the name of the basic-level category, as in the examples given above.

**subordinate clause** see CLAUSE; EMBEDDED SENTENCE.

**subordination** *n.* **1.** the placing of something into a lower ranking category or group. More specifically, it is the state of being subservient to and considered less important than others. **2.** in linguistics, see COORDINATION.

**Suboxone** *n.* a trade name for BUPRENORPHINE in combination with NALOXONE.

**subpopulation** *n.* a subgroup of a larger POPULATION of individuals or cases. For example, if the population of interest in a research study is all U.S. college undergraduates, one could divide the students into subpopulations by state (e.g., individuals attending college in California, New York, Ohio).

**subsample** *n.* a subset of a SAMPLE of individuals or cases selected for study. For example, if one chooses a random group of college students for research purposes, one could divide the students into subsamples by major (e.g., individuals from the group who are majoring in psychology, mathematics, history).

**subscale** *n.* a SCALE that taps some specific constituent or otherwise differentiated category of information as part of a larger, overall scheme. For example, a test of intelligence might consist of several subscales (or subtests) assessing verbal and performance aspects or dimensions of intelligence, which in combination yield a verbal intelligence score, a performance intelligence score, and an overall intelligence score.

**subspecies** *n.* see BREED.

**substance** *n.* **1.** a drug of abuse (e.g., alcohol, cannabis,

cocaine, an inhalant), a medication (e.g., a sedative or anxiolytic), or a toxin that is capable of producing harmful effects when ingested or otherwise taken into the body. See SUBSTANCE-RELATED DISORDER. **2.** in philosophy, that which has an independent, self-sufficient existence and remains unalterably itself even though its attributes or properties may change. Philosophers have differed over what qualifies as a substance and whether reality consists of a single substance (see MONISM) or more (see DUALISM; PLURALISM).

**substance abuse** a pattern of compulsive substance use marked by recurrent significant social, occupational, legal, or interpersonal adverse consequences, such as repeated absences from work or school, arrests, and marital difficulties. *DSM-IV-TR* identifies nine drug classes associated with abuse: alcohol, amphetamines, cannabis, cocaine, hallucinogens, inhalants, opioids, phencyclidines, and sedatives, hypnotics, or anxiolytics. This diagnosis is preempted by the diagnosis of SUBSTANCE DEPENDENCE: If the criteria for abuse and dependence are both met, only the latter diagnosis is given. In *DSM-5*, however, both have been subsumed into SUBSTANCE USE DISORDER and are no longer considered distinct diagnoses.

**Substance Abuse and Mental Health Services Administration (SAMHSA)** an agency of the U.S. Department of Health and Human Services, established in 1992, that is charged with improving the quality and availability of prevention, treatment, and rehabilitative services in order to reduce illness, death, disability, and cost to society resulting from substance abuse and mental illness. SAMHSA has three program divisions: the Center for Mental Health Services, the Center for Substance Abuse Prevention, and the Center for Substance Abuse Treatment. See also ALCOHOL, DRUG ABUSE AND MENTAL HEALTH ADMINISTRATION.

**substance abuse treatment** inpatient and outpatient programs designed to help individuals diagnosed with substance dependence (i.e., dependence on alcohol or any other drug) to achieve abstinence. These include but are not limited to short- and long-term residential programs (colloquially known as "rehab"), clinic- and hospital-based outpatient programs, METHADONE MAINTENANCE THERAPY, and TWELVE-STEP PROGRAMS. Also called **drug abuse treatment**. See also ALCOHOL REHABILITATION.

**substance dependence** in *DSM-IV-TR*, a cluster of cognitive, behavioral, and physiological symptoms indicating continued use of a substance despite significant substance-related problems. There is a pattern of repeated substance ingestion resulting in tolerance, withdrawal symptoms if use is suspended, and an uncontrollable drive to continue use. *DSM-IV-TR* identifies 10 drug classes associated with dependence: alcohol, amphetamines, cannabis, cocaine, hallucinogens, inhalants, nicotine, opioids, phencyclidines, and sedatives, hypnotics, or anxiolytics. Often used synonymously with the term ADDICTION, substance dependence has been subsumed with SUBSTANCE ABUSE under the category SUBSTANCE USE DISORDER in *DSM-5* and is no longer considered a distinct diagnosis. Also called **chemical dependence**.

**substance-induced anxiety disorder** clinically significant anxiety (e.g., generalized anxiety, panic attacks, phobic symptoms) caused by the direct physiological effects of exposure to a drug, toxin, or other substance. The anxiety symptoms may be associated with substance intoxication (e.g., alcohol, amphetamines, caffeine), substance withdrawal (e.g., alcohol, cocaine, sedatives), medication

use (e.g., anesthetics, anticholinergics, thyroid medication), or exposure to heavy metals and toxins (e.g., gasoline, paint, carbon dioxide).

**substance-induced mood disorder** in *DSM-IV-TR*, significant and persistent emotional disturbance believed to be caused directly by the physiological effects of a substance, which may be a drug of abuse, a medicinal drug, or a heavy metal or toxin (e.g., gasoline, paint, an organophosphate insecticide). When caused by a drug of abuse, the mood disturbance must be more severe than that normally experienced as part of **SUBSTANCE INTOXICATION** or **SUBSTANCE WITHDRAWAL**. Medications that can cause mood disturbance include antihypertensives, steroids, psychotropic drugs, and many others. In *DSM-5*, the disturbance is called **substance/medication-induced depressive disorder**.

**substance-induced persisting amnesic disorder** a disturbance in memory due to the persisting effects of a substance (see **AMNESIC DISORDER**). The ability to learn new information or to recall previously learned information is impaired severely enough to interfere markedly with social or occupational functioning and to represent a significant decline from a previous level of functioning. See **ALCOHOL-INDUCED PERSISTING AMNESIC DISORDER**; **SEDATIVE-, HYPNOTIC-, OR ANXIOLYTIC-INDUCED PERSISTING AMNESIC DISORDER**.

**substance-induced persisting dementia** multiple cognitive deficits due to the persisting effects of substance abuse. The most notable feature is impaired memory, but there may also be aphasia (impaired expression or understanding of language), apraxia (inability to perform skilled or complex movements), agnosia (impaired ability to interpret sensations correctly), and **EXECUTIVE DYSFUNCTION**. See also **ALCOHOL-INDUCED PERSISTING DEMENTIA**.

**substance-induced psychotic disorder** in *DSM-IV-TR*, prominent hallucinations or delusions due to the direct physiological effects of a substance and not arising as part of a withdrawal syndrome. The equivalent term in *DSM-5* is **substance/medication-induced psychotic disorder**. Also called **hallucinosis**. See **ALCOHOL-INDUCED PSYCHOTIC DISORDER**; **AMPHETAMINE-INDUCED PSYCHOTIC DISORDER**; **CANNABIS-INDUCED PSYCHOTIC DISORDER**; **HALLUCINOGEN-INDUCED PSYCHOTIC DISORDER**.

**substance intoxication** a reversible syndrome due to the recent ingestion of a specific substance, including clinically significant behavioral or psychological changes as well as one or more signs of physiological involvement. Although symptoms vary by substance, there are some common manifestations: for example, perceptual disturbances; mood changes; impairments of judgment, attention, and memory; alterations of heartbeat and vision; and speech and coordination difficulties. *DSM-IV-TR* and *DSM-5* identify 10 drug classes associated with intoxication: alcohol, amphetamines, caffeine, cannabis, cocaine, hallucinogens, inhalants, opioids, phencyclidines, and sedatives, hypnotics, or anxiolytics.

**substance intoxication delirium** in *DSM-IV-TR* and *DSM-5*, a reversible substance-specific syndrome that develops over a short period of time (usually hours to days) following heavy consumption of the substance. It includes disturbance of consciousness (e.g., reduced ability to focus, sustain, or shift attention), accompanied by changes in cognition (e.g., memory deficit, disorientation, language disturbance) in excess of those usually associated with in-

toxication with that substance. See **ALCOHOL INTOXICATION DELIRIUM**; **AMPHETAMINE INTOXICATION DELIRIUM**; **COCAINE INTOXICATION DELIRIUM**; **PHENCYCLIDINE INTOXICATION DELIRIUM**.

**substance P** a **NEUROPEPTIDE** that functions as a neurotransmitter in both peripheral and central nervous systems. It belongs to the **NEUROKININ** family of transmitters. High concentrations of neurons containing substance P are localized in the **DORSAL HORN** of the spinal cord, where they play a role in the modulation of pain. In peripheral tissues, substance P acts as a vasodilator. It also has a role in sexual behavior and has been implicated in the regulation of mood.

**substance-related disorder** any of various disorders caused by the effects of a drug or a toxin. The term in *DSM-5* encompasses **SUBSTANCE USE DISORDERS** and substance-induced disorders (e.g., intoxication, withdrawal) caused by alcohol; opioids; stimulants (e.g., amphetamine, cocaine); sedatives, hypnotics, or anxiolytics; and other substances. The term also broadly includes mental disorders (e.g., delirium, depression, psychosis) that may be induced by intoxication or withdrawal from various substances, including some medications.

**substance use disorder** a catchall diagnosis encompassing varying degrees of excessive use of a substance. In *DSM-5*, the diagnosis combines and replaces *DSM-IV-TR*'s **SUBSTANCE ABUSE** and **SUBSTANCE DEPENDENCE** as distinct classifications, with subordinate categories of specific "use disorders" following the same pattern of consolidation: **ALCOHOL USE DISORDER**, for example, combines and replaces **ALCOHOL ABUSE** and **ALCOHOL DEPENDENCE**. Other use disorders whose diagnostic criteria in *DSM-5* subsume the former abuse-dependence distinction include those involving caffeine; cannabis; hallucinogens (e.g., phencyclidine use disorder); inhalants; opioids; sedative, hypnotics, or anxiolytics; stimulants (e.g., amphetamine, cocaine); and tobacco.

**substance withdrawal** a syndrome that develops after cessation of prolonged, heavy consumption of a substance. Symptoms vary by substance but generally include physiological, behavioral, and cognitive manifestations, such as nausea and vomiting, insomnia, mood alterations, and anxiety. *DSM-IV-TR* identifies six drug classes associated with withdrawal: alcohol, amphetamines, cocaine, nicotine, opioids, and sedatives, hypnotics, or anxiolytics. *DSM-5* lists tobacco in place of nicotine and further identifies caffeine and cannabis as being associated with a withdrawal syndrome.

**substantia gelatinosa** a gelatinous-appearing mass of extensively interconnected small neurons at the tip of the **DORSAL HORN** of the spinal cord. Some cells in the substantia gelatinosa contain **ENDORPHINS** and are involved in regulation of pain. Neurons of the substantia gelatinosa extend into the **MEDULLA OBLONGATA**, where they form the spinal **TRIGEMINAL NUCLEUS**.

**substantia nigra** a region of gray matter in the midbrain, named for its dark pigmentation, that sends **DOPAMINERGIC** neurons to the **BASAL GANGLIA**. Depletion of dopaminergic neurons in this region is implicated in Parkinson's disease.

**substantive rationality** the rationality of a decision, as opposed to the rationality of the processes used to arrive at the decision. Compare **PROCEDURAL RATIONALITY**.

**substantive significance** see PRACTICAL SIGNIFICANCE.

**substantive universal** see LANGUAGE UNIVERSAL.

**substitute formation** see SYMPTOM FORMATION.

**substitutes for leadership theory** a CONTINGENCY THEORY OF LEADERSHIP proposing that leadership is not important to effective group performance in some work situations. For instance, a highly structured task (see TASK STRUCTURE) may substitute for a directive leader and a highly cohesive work group may substitute for a considerate, supportive leader. See SITUATIONAL LEADERSHIP THEORY. [developed in 1978 by Steven Kerr and U.S. organizational behaviorist John Michael Jermier (1950– )]

**substitution** *n.* the replacement of one thing with another. In psychoanalytic theory, it denotes the replacement of unacceptable emotions or unattainable goals with alternative feelings or achievable aims. Substitution may be viewed as a positive adaptation or solution (e.g., adoption when one cannot have a child of one's own) or as a negative, maladaptive response (e.g., emotional eating after a frustrating day at the office). See also DEFENSE MECHANISM.

**substitution hypothesis** see ALTERATION HYPOTHESIS.

**substitution pharmacotherapy** the prescription of legal drugs to help substance abusers stop taking illegal drugs, particularly opioids, as in the prescribed substitution of methadone for heroin. Also called **substitution therapy**. See CROSS-DEPENDENCE.

**substitution test** any examination in which the test taker exchanges one set of symbols for another. For example, a person might be required to substitute numbers with letters according to a specific code or to substitute a word in a sentence with a grammatically equivalent alternative. Substitution tests often are used in neuropsychology to evaluate cognitive function and identify individuals with brain damage, dementia, and other conditions.

**substrate** *n.* **1.** a basis or foundation, such as the physical medium on which an animal or plant lives or grows. **2.** a chemical compound that is acted on by an enzyme. The substrate binds specifically to the enzyme's active site, thereby lowering the energy required for the reaction, which can therefore proceed much faster. When the process is over, the substrate has been changed into different molecules (reaction products), although the enzyme is unchanged. The released enzyme then repeats the process with another substrate of the same composition.

**subtest** *n.* a separate division of a test or instrument, usually with an identifiable content (e.g., the multiplication subtest of a mathematics test).

**subthalamic nucleus** a component of the subthalamus that receives fibers from the GLOBUS PALLIDUS as a part of the descending pathway from the BASAL GANGLIA. It forms part of the EXTRAPYRAMIDAL TRACT.

**subthalamus** *n.* a part of the DIENCEPHALON of the brain, wedged between the THALAMUS and the HYPOTHALAMUS. It contains the subthalamic nucleus and functions in the regulation of movements controlled by skeletal muscles, together with the BASAL GANGLIA and the SUBSTANTIA NIGRA. —**subthalamic** *adj.*

**subtherapeutic dose** a dose of a drug that does not achieve a particular therapeutic effect. Although this is generally not desired, drugs intended for one purpose may be administered in subtherapeutic doses to achieve a different effect. For example, the TRICYCLIC ANTIDEPRESSANTS are

rarely used in current practice in doses sufficient to alleviate depression; however, they are often used in low (subtherapeutic) doses to promote sleep or alleviate pain.

**subthreshold potential** a type of GRADED POTENTIAL resulting from a stimulus that is not of sufficient intensity to elicit an ACTION POTENTIAL and does not travel far beyond the immediate region of stimulation. See also DECREMENTAL CONDUCTION; LOCAL POTENTIAL.

**subtotal hysterectomy** see HYSTERECTOMY.

**subtraction method** see DONDER'S METHOD.

**subtractive bilingualism** see ADDITIVE BILINGUALISM.

**subtractive mixture** a form of COLOR MIXTURE in which pigments are combined, causing some wavelengths to be absorbed or subtracted from the mixture. Compare ADDITIVE COLOR MIXTURE. See also COLOR SUBTRACTION.

**subtractive principle** a rule of COLOR MIXTURE stating that the perceived color of a target that absorbs some wavelengths of light will be complementary to the absorbed wavelengths.

**subtype** *n.* in diagnostic classification, a subordinate category of a disorder. In *DSM-IV-TR* and *DSM-5*, for example, SPECIFIC PHOBIAS are divided into several subtypes, such as specific phobia, animal type (e.g., fear of snakes); specific phobia, situational type (e.g., fear of flying); and others.

**Subutex** *n.* a trade name for BUPRENORPHINE.

**subventricular zone** an area of the lateral ventricles. It is the largest zone in which NEUROGENESIS occurs in the adult brain and one of the two main such areas, the other being the subgranular zone of the DENTATE GYRUS.

**subvocal speech** COVERT SPEECH associated with faint movements of the lips, tongue, and larynx that resemble speech movements but are inaudible. People often use subvocal speech, for example, when commenting to themselves on their own and others' actions, perceptions, and feelings.

**successful aging** avoidance of disease and disability, maintenance of cognitive capacity, continued active engagement in life, and adaptation to the aging process through such strategies as SELECTIVE OPTIMIZATION WITH COMPENSATION.

**successful intelligence** in the TRIARCHIC THEORY OF INTELLIGENCE, the ability to succeed in life according to one's own definition of success, via adaptation to, shaping of, and selection of environments. Successful intelligence involves capitalizing on strengths and compensating for or correcting weaknesses through the use of analytical, creative, and practical skills, which in combination enable one to perform a wide variety of tasks.

**successive-approximations method** see METHOD OF SUCCESSIVE APPROXIMATIONS.

**successive contrast** see COLOR CONTRAST; CONTRAST.

**successive discrimination** in conditioning, a DISCRIMINATION between stimuli that are presented in succession.

**successive induction** the succession of movements of limbs or other body parts in a pattern of antagonistic reflex actions. In walking, for example, successive induction requires alternate flexion and extension of muscles in the lower limbs.

**successive-intervals method** see METHOD OF SUCCESSIVE INTERVALS.

**successive reproduction** see REPEATED REPRODUCTION.

**succinimide** *n.* any of a group of chemically related drugs that are effective in the treatment of absence seizures. Discovered in a search for an antidote for drug-induced convulsions, they produce a sedative effect and may cause behavioral changes. **Ethosuximide** is an example of a succinimide and is sold in the United States under the trade name **Zarontin**.

**succinylcholine** *n.* a drug that relaxes skeletal muscles, used intravenously in anesthesia and before electroconvulsive treatment. It is a neuromuscular blocking agent that does not relieve pain or produce sedation. U.S. trade name (among others): **Anectine**.

**succorance need** in the PERSONOLOGY of Henry Alexander MURRAY, the need for protection, aid, and support.

**succubus** *n.* a demon or evil spirit in female form believed to have sexual intercourse with sleeping men. Compare INCUBUS.

**sucker effect** a phenomenon in which individuals reduce their personal investment in a group endeavor because of their expectation that others will think negatively of them for working too hard or contributing too much (considering them to be a sucker). Compare COMPENSATION EFFECT. See also COLLECTIVE EFFORT MODEL.

**sucking reflex** a basic reflex in which the young of many mammals (including human infants) grasp a nipple with their lips and draw milk into their mouths by suction.

**sudden infant death syndrome (SIDS)** the sudden and unexpected death of a seemingly healthy infant during sleep for no apparent reason. The risk of SIDS is greatest between 2 and 6 months of age and is a common cause of death in babies less than 1 year old. Also called **cot death**; **crib death**.

**sudden insight** sudden knowledge or understanding of the truth or essential nature of something, such as a problem or complex situation. See AHA EXPERIENCE; DISCONTINUITY HYPOTHESIS; EUREKA TASK; INSPIRATION.

**sudden unexpected nocturnal-death syndrome** see NIGHTMARE-DEATH SYNDROME.

**sufentanil** *n.* a short-acting OPIOID that binds to OPIOID RECEPTORS and is used as an analgesic supplement in the maintenance of balanced general anesthesia. See also FENTANYL. U.S. trade name: **Sufenta**.

**suffering** *n.* the experience of pain or acute distress, either physical or psychological, in response to a physical trauma or a significant event, particularly one that is threatening or involves loss (e.g., the death of a loved one).

**sufficient condition** see CONDITION.

**sufficient estimator** an ESTIMATOR that utilizes all the relevant or useful information from a sample in order to approximate a population parameter. For example, the SAMPLE MEAN is a sufficient estimator for the POPULATION MEAN. Also called **sufficient statistic**.

**suffix** *n.* in linguistics, a MORPHEME that is added to the end of a word or word stem to create an inflected or derived form, such as *-s* in *books*, *-ing* in *driving*, and *-ment* in *encouragement*. See AFFIXATION; INFIX; PREFIX.

**suffix effect** impaired memory of the last items of an auditorily presented list when the list is followed by an item that does not need to be recalled.

**suggestibility** *n.* **1.** an inclination to readily and uncritically adopt the ideas, beliefs, attitudes, or actions of others. **2.** an occasional synonym for HYPNOTIC SUSCEPTIBILITY. See PRIMARY SUGGESTIBILITY; SECONDARY SUGGESTIBILITY; TERTIARY SUGGESTIBILITY.

**suggestion** *n.* **1.** an idea or potential course of action presented to another for consideration. **2.** the process of inducing acceptance of an idea or course of action, especially through indirect or subtle means. See also AUTOSUGGESTION; PRESTIGE SUGGESTION.

**suggestion therapy** a type of psychotherapy in which distressing symptoms are alleviated by direct suggestion and reassurance. The technique is sometimes used in HYPNOTHERAPY. A suggestion may be accompanied by an explanation of the meaning and the purpose of the symptoms, but no attempt is made to modify the client's basic personality.

**suicidal crisis** a situation in which suicide is threatened or attempted.

**suicidal gesture** an ATTEMPTED SUICIDE or similar self-destructive behavior, especially when the risk of death is low. See also PARASUICIDE.

**suicidal ideation** thoughts about or a preoccupation with killing oneself, often as a symptom of a MAJOR DEPRESSIVE EPISODE. Most instances of suicidal ideation do not progress to ATTEMPTED SUICIDE.

**suicidality** *n.* the risk of suicide, usually indicated by suicidal ideation or intent, especially as evident in the presence of a well-elaborated suicidal plan.

**suicide** *n.* the act of killing oneself. Frequently, suicide occurs in the context of a MAJOR DEPRESSIVE EPISODE, but it may also occur as a result of a substance use or other disorder. It sometimes occurs in the absence of any psychiatric disorder, especially in untenable situations, such as extreme or prolonged bereavement or declining health. See also ATTEMPTED SUICIDE; PASSIVE SUICIDE. —**suicidal** *adj.*

**suicide attempt** see ATTEMPTED SUICIDE.

**suicide by cop** the act, by one who is suicidal, of purposely eliciting deadly police gunfire on oneself. Also called **copicide**; **officer-assisted suicide**; **police-assisted suicide**.

**suicide-prevention center** a CRISIS-INTERVENTION facility dealing primarily with individuals who have suicidal thoughts or who have threatened or attempted suicide. Suicide-prevention centers are usually staffed by social workers or paraprofessionals who are trained to respond to such emergencies in person or over a telephone hotline. Suicide-prevention centers also provide community education and outreach, and staff may offer bereavement support to the relatives and loved ones of an individual who has died by suicide.

**suicidology** *n.* a multiprofessional discipline devoted to the study of suicidal phenomena and their prevention. Major groups involved are (a) scientists (epidemiologists, sociologists, statisticians, demographers, and social psychologists), (b) clinicians (clinical psychologists, psychiatrists, social workers, trained volunteers, and members of the clergy), and (c) educators (public health educators and

school and college personnel). The term *suicidology* was coined by Edwin S. SHNEIDMAN, a founder of the discipline.

**sui juris** having the ability to make legal decisions and possessing full civil rights (Latin, literally: "of his own right"). A person who is *sui juris* must have reached the age of maturity (typically 18 years old), be fully mentally competent, and not be under the guidance or protection of another (as in a CONSERVATORSHIP).

**sukra prameha** a CULTURE-BOUND SYNDROME found in Sri Lanka, with symptoms similar to those of SHEN-K'UEI.

**suk-yeong** *n.* see KORO.

**sulcus** *n.* (*pl.* **sulci**) a groove, especially one on the surface of the cerebral cortex. The term is often used synonymously with FISSURE. —**sulcal** *adj.*

**sulcus centralis** see CENTRAL SULCUS.

**sulcus principalis** in the brain of monkeys, a groove that marks the boundary between the dorsolateral FRONTAL CORTEX and the ventrolateral frontal cortex. Adjacent cortical tissue has been implicated in perception and in working memory.

**Sullivan's interpersonal theory** see INTERPERSONAL THEORY. [Harry Stack SULLIVAN]

**sumatriptan** *n.* see TRIPTAN.

**summary statistics** a set of numbers used to communicate succinctly the most important descriptive information about a collection of raw data. For example, the VARIANCE, CENTRAL TENDENCY, SKEWNESS, and KURTOSIS may be used to summarize a sample data set.

**summated rating scale** a type of assessment instrument comprising a series of statements measuring the same construct or variable to which respondents indicate their degree of agreement or disagreement. The number of response options for each item varies, often from 5 to 7 points (e.g., from *strongly agree* to *strongly disagree*). The response values for individual items may be summed to obtain a total or average score that reflects a person's general attitude toward the construct of interest. A LIKERT SCALE is the most commonly used summated rating scale. Also called **summated rating method**; **summated scale**.

**summing potential** a slowly changing electric potential that is recorded in the COCHLEA and is evoked by sound.

**summation** *n.* **1.** the process in which a neural impulse is propagated by the cumulative effects of two or more stimuli that alone would not be sufficient to activate the neuron. See SPATIAL SUMMATION; TEMPORAL SUMMATION. **2.** the increased intensity experienced in a sensation when two stimuli are presented to a receptor in rapid succession or to adjacent areas. **3.** (symbol:  $\Sigma$ ) a mathematical operation involving the addition of numbers, quantities, or the like. For example, in a set of related values ( $x_1, x_2, x_3, \dots, x_n$ ), a summation of all values of the set is indicated by

$$\sum_{i=1}^{i=n} x_i, \sum_1^n, \text{ or } \Sigma$$

Often, the limits on the summation sign are omitted when what is intended is otherwise obvious.

**summation effect** a feature of BINOCULAR CELLS in the visual cortex in which the activity of the cell is greater when stimulation occurs through both eyes than when stimulation occurs through one eye. A similar phenomenon occurs in the auditory system; when both ears are

stimulated, there is a **binaural summation effect** of enhanced loudness.

**summation time** the longest interval between two successive stimuli such that they are perceived as a single, continuous stimulus.

**summative evaluation 1.** the appraisal of a student's achievement at the conclusion of an educational program. Also called **terminal assessment**. **2.** in evaluation research, an attempt to assess the overall effectiveness of a program in meeting its objectives and goals after it is in operation. This is in contrast to FORMATIVE EVALUATION, which is used to help in the development of the program. Also called **ex post facto evaluation**. See also OUTCOME EVALUATION.

**summer depression** an atypical variant of SEASONAL AFFECTIVE DISORDER in which MAJOR DEPRESSIVE EPISODES tend to occur in the summer months.

**sum of cross-products** a statistical value obtained for two sets of variables  $x_i$  and  $y_i$  defined by the summation

$$\Sigma (x_i - \bar{x}) (y_i - \bar{y}),$$

where  $\bar{x}$  is the mean value of  $x_i$  and  $\bar{y}$  the mean value of  $y_i$ . It is used in the MULTIVARIATE ANALYSIS OF VARIANCE.

**sum of products** the value obtained by multiplying each pair of numbers in a set and then adding the individual totals. For example, for the set of number pairs

2, 4

3, 5

6, 6

1, 4

the sum of cross-products is  $(2 \times 4) + (3 \times 5) + (6 \times 6) + (1 \times 4) = 8 + 15 + 36 + 4 = 63$ .

**sum of squared errors** (symbol: SSE) see ERROR SUM OF SQUARES.

**sum of squares** (symbol: SS) the number obtained by determining the deviation of each point in a data set from some value (such as a mean or predicted value), multiplying each deviation by itself, and adding the resulting products. Thus, for a set of variables  $x_i$ ,

$$\Sigma (x_i - \bar{x})^2,$$

where  $\bar{x}$  is the mean value of  $x_i$ . For example, if an analysis yields a mean score of 5 but a person's actual score is 7, the squared deviation for that individual is  $(7 - 5)^2 = 2^2 = 4$ : This would be added to the squared deviations of all other individuals in the sample. Various types of sums of squares are calculated in ANALYSIS OF VARIANCE, REGRESSION ANALYSIS, and other statistical procedures. See ERROR SUM OF SQUARES.

**sum strategy** a simple addition strategy used by young children that involves counting together the two addends of a problem. For example, for the problem  $3 + 2 = ?$ , a child would say, "1, 2, 3 . . . 4, 5."

**sunburst maze** a specific RADIAL MAZE variation consisting of 20 arms projecting from a hub in a pattern resembling sunbeams spreading across the sky, used by Edward C. TOLMAN in the 1940s to study COGNITIVE MAPS. In his experiments, rats were trained to follow a particular route in a sunburst maze from the start to a designated goal. The original route was then blocked and the animals had to choose an alternative path, only one of which

pointed toward the goal box. The fact that many rats chose the arm that led to the location of the goal box was taken as evidence that they understood the spatial relation between the start and the goal and could take the shortest path to get there.

**sun compass** the use of the sun as a directional stimulus in orientation and navigation. Because the sun appears to move across the sky during the day and has different trajectories in different seasons, a sun compass must be coupled with some form of TIME ESTIMATION. To head south at 9 a.m., one needs to keep the sun on the left, but at 3 p.m., one needs to keep the sun on the right. Studies of several species, ranging from bees to fish and birds, have demonstrated a time-compensated sun compass. For nocturnal species, there is evidence of a **star compass**.

**sundown syndrome** the tendency, particularly among older adults with dementia or individuals in institutional care, to experience reduced levels of psychological functioning late in the day. Also called **sundowning**.

**sunk-costs effect** see BEHAVIORAL ECONOMICS.

**suo yang** see KORO.

**superconducting quantum interference device (SQUID)** a device used in MAGNETOENCEPHALOGRAPHY for detecting magnetic waves in the brain. These highly sensitive devices must be used in rooms that are screened from all outside magnetic sources. They are useful in the study of in vivo human brain processes.

**superconscious** *n.* **1.** in certain Eastern traditions, with variation (see BUDDHISM; HINDUISM; TAOISM), a state in which the individual attains supreme knowledge, freedom from pain, and perfect spiritual insight. Practices such as MEDITATION and YOGA (among others) may be directed toward the achievement of this state. **2.** in the tradition of HUMANISTIC PSYCHOLOGY, a higher state of awareness that is associated with creative inspiration, spiritual insight, and the attainment of PEAK EXPERIENCES. See BEING COGNITION. **3.** in the writings of Italian psychiatrist Roberto Assagioli (1888–1974), a synonym for transpersonal awareness. See TRANSPERSONAL PSYCHOLOGY. **4.** in the ANALYTIC PSYCHOLOGY of Carl JUNG, another name for the COLLECTIVE UNCONSCIOUS.

**superego** *n.* in psychoanalytic theory, the moral component of the personality that represents parental and societal standards and determines personal standards of right and wrong, or conscience, as well as aims and aspirations (see EGO-IDEAL). In the classic Freudian tripartite structure of the psyche, the EGO, which controls personal impulses and directs actions, operates by the rules and principles of the superego, which stem from parental demands and prohibitions. The formation of the superego occurs on an unconscious level, beginning in the first 5 years of life and continuing throughout childhood and adolescence and into adulthood, largely through identification with the parents and later with admired models of behavior. See also PRIMITIVE SUPEREGO.

**superego anxiety** in psychoanalytic theory, anxiety caused by unconscious superego activity that produces feelings of guilt and demands for atonement. Compare EGO ANXIETY; ID ANXIETY.

**superego resistance** in psychoanalytic theory, a type of RESISTANCE to psychoanalysis that is created by the superego. It generates a sense of guilt and gives rise to the

need for punishment in the form of persistent symptoms. Compare ID RESISTANCE; REPRESSION RESISTANCE.

**superego sadism** in classical psychoanalytic theory, the aggressive, rigid, and punitive aspect of the superego, or conscience. Its energy is derived from the destructive forces of the ID, and its intensity and strength are dependent on the violent and sadistic fantasies of the child's primordial strivings. See SADISM.

**superficial** *adj.* **1.** in anatomy, located close to or at the surface of the body or of an organ. **2.** having no deep significance or real substance.

**superior** *adj.* in anatomy, higher, above, or toward the head. Compare INFERIOR.

**superior canal dehiscence** a rare hearing and balance disorder due to a thinning layer of bone in the inner ear that causes hypersensitivity to sound and motion. Symptoms include sudden dizziness; loss of balance; rapid, uncontrollable eye movements; falling down after a loud noise; AUTOPHONY; and hearing loss.

**superior colliculus** either of a pair of rounded prominences (colliculi) in the brain, one of which lies near each CEREBRAL PEDUNCLE, rostrally to the INFERIOR COLLICULUS and immediately beneath the PINEAL GLAND. The superior colliculus receives fibers from the OPTIC TRACT and projects fibers to several stations, including the LATERAL GENICULATE NUCLEUS and the RETICULAR FORMATION. The superior colliculus gives rise to the TECTOSPINAL TRACT and is involved in orienting movements of the head and eye toward external stimuli. See also BLINDSIGHT.

**superior function** in the ANALYTIC PSYCHOLOGY of Carl JUNG, the function among the four basic functions—seeing, thinking, intuiting, and feeling—that rules the conscious ego and dominates the other three, which become INFERIOR FUNCTIONS in the unconscious. The superior function determines the FUNCTIONAL TYPE of the individual.

**superior intelligence** an arbitrary category of general intelligence attained by only 15% of the population. It includes individuals with an IQ of 120 or more on both the WECHSLER ADULT INTELLIGENCE SCALE and the STANFORD-BINET INTELLIGENCE SCALE.

**superiority complex** in the INDIVIDUAL PSYCHOLOGY of Alfred ADLER, an exaggerated opinion of one's abilities and accomplishments that derives from an overcompensation for feelings of inferiority. See COMPENSATION. Compare INFERIORITY COMPLEX.

**superior longitudinal fasciculus** a bundle of nerve fibers that connects ridges (gyri) in the cerebral cortex as distant as the FRONTAL LOBE and the OCCIPITAL LOBE. Most are short fibers that connect closer gyri. Near the middle of the fasciculus, some fibers coming from both directions turn abruptly upward into the motor and somatosensory areas of the cortex.

**superior oblique** the extrinsic EYE MUSCLE that rotates the eye upward when the eye is pointing toward the nose and that contributes to upward motion (together with the SUPERIOR RECTUS) when it contracts with the eye pointing straight ahead.

**superior olivary complex (superior olivary nucleus; superior olive)** in the OLIVARY NUCLEUS, a collection of brain nuclei located in the PONS that is one of the major structures in the AUDITORY PATHWAY. The cells receive excitatory input from the contralateral COCHLEAR NU-

CLEI in the brainstem and inhibitory input from the ipsilateral cochlear nuclei. The contralateral input comes through the TRAPEZOID BODY, a concentration of transverse nerve fibers in the pons.

**superior rectus** the extrinsic EYE MUSCLE that rotates the eye upward when the eye is pointing away from the nose and that contributes to upward motion (together with the SUPERIOR OBLIQUE) when it contracts with the eye pointing straight ahead.

**superior sagittal sinus** a part of the system of veins that drain blood from the cerebral tissues. It runs across the top of the cerebral cortex, draining venous blood from an area above the eye to the transverse sinus, which empties into the internal jugular vein.

**superior temporal gyrus** a ridge (gyrus) that extends along the upper surface of the TEMPORAL LOBE of the brain, bounded above by the LATERAL SULCUS and laterally by the superior temporal sulcus. It has a role in speech perception and production.

**superman** *n.* the usual English translation of the German word *Übermensch*, introduced by Friedrich NIETZSCHE. For Nietzsche, the superman represents an ideal type of human life, one who brings into reality the most creative and powerful attributes of humanity, who seizes life courageously in response to the *Wille zur Macht* (see WILL TO POWER), and who avoids the “slave mentality” that Nietzsche took to be characteristic of the culture of his time. As Nietzsche considered few capable of such affirmative, authentic living, the ideal is essentially aristocratic and non-democratic. Although the concept has no racial elements, the Nazis later used it to affirm the supposed superiority of the Aryan race and to justify aggression and oppressive racial policies.

**supernatural** *adj.* of or relating to phenomena that appear to depart from or transcend the laws of the physical universe, especially when these phenomena are taken to be the work of gods, demons, or spirits. Compare PRETERNATURAL. —**supernaturalism** *n.*

**supernormal** *adj.* **1.** exceeding or beyond the normal. **2.** in psychometrics, denoting a category of individuals or their attributes that are far above the normal range.

**supernormal stimulus** a stimulus that by virtue of being larger or more intense than normally encountered natural stimuli has a greater behavioral effect than the natural stimuli. For example, a gull presented with its own egg and a much larger, artificial egg will attempt to incubate the larger egg. See PEAK SHIFT; SENSORY BIAS.

**superordinate category** a high-level category that subsumes a number of BASIC-LEVEL CATEGORIES. For example, *animal* is a superordinate category including the basic-level categories *cat*, *fish*, *elephant*, and so on. A superordinate category is usually characterized by (a) low levels of resemblance between members and (b) fundamental differences between its members and those of other categories (e.g., an elephant is not much like a fish, but both are very different from a tree).

**superordinate goal** **1.** a goal that takes precedence over one or more other, more conditional goals. **2.** a goal that can be attained only if the members of two or more groups work together by pooling their skills, efforts, and resources. In the ROBBERS CAVE EXPERIMENT studying intergroup conflict reduction, superordinate goals were introduced by creating emergencies and problems that

could be resolved only through the joint efforts of both groups.

**superposition** *n.* see LINEAR SYSTEM.

**supersaturated design** a type of FACTORIAL DESIGN in which dozens of INDEPENDENT VARIABLES that influence a single DEPENDENT VARIABLE of interest are assessed simultaneously to identify those vital few that are most influential. In a supersaturated design, the number of variables being investigated exceeds the number of runs or trials conducted; algorithms and other criteria exist to determine the appropriate number of runs to conduct. Such designs commonly are used for screening purposes, wherein the goal is to identify a small number of dominant active factors with minimal cost.

**supersensitivity** *n.* heightened responsiveness to a particular neurotransmitter. For example, prolonged blockade of DOPAMINE RECEPTORS by some antipsychotic drugs leads to an increase in the number of dopamine receptors; discontinuation of the drug may then result in a marked increase of psychotic symptoms, a condition called **supersensitivity psychosis**.

**superstition** *n.* **1.** an irrational belief in the significance or magical efficacy of certain objects or events (e.g., omens, lucky charms) or a custom or act based on such belief. **2.** any unscientific belief accepted without question. —**superstitious** *adj.*

**superstitious behavior** the behavior that results from ACCIDENTAL REINFORCEMENT of an action so that the organism continues to repeat it. For example, a rat that turned in a circle before accidentally hitting a bar and obtaining food might continue turning in a circle before each bar press.

**superstitious control** the illusion that one can influence outcomes through various practices designed to protect oneself, alter the environment, or affect a situation. Such practices include following specific behavior patterns (see SUPERSTITIOUS RITUAL). Some people maintain that superstitious control serves a positive psychological function in averting the development of LEARNED HELPLESSNESS. See FAITH HEALING; MAGICAL THINKING.

**superstitious ritual** a specific pattern of behavior that is believed to control one's performance and its outcome when there is no rational reason for this belief. Failure to follow the ritual is believed to have negative effects on performance and outcome. In sport, for example, such rituals might include putting items of a uniform on in a specific order or having team members enter a competition venue in a specific order. Also called **superstitious routine**.

**supertaster** *n.* a person with uncommonly low gustatory thresholds and strong responses to moderate concentrations of taste stimuli. Supertasters have unusually high numbers of TASTE BUDS.

**supervalent thought** an extreme preoccupation with a single train of thought. See OBSESSION; RUMINATION.

**supervenience** *n.* in philosophy, the condition in which a higher level property of something is inseparable from the lower level constituents of that thing, such that change in this property only occurs when the lower level constituents change. The term is usually used in a materialist sense to refer to the idea that conscious experience (i.e., a higher level property of the brain) supervenes on—that is, it is entirely dependent on—neural processes (lower level properties of the brain). —**supervene** *vb.* —**supervenient** *adj.*



**supervised analysis** see CONTROL ANALYSIS.

**supervision** *n.* oversight; critical evaluation and guidance provided by a qualified and experienced person (the supervisor) to another individual (the trainee) during the learning of a task or process. In psychotherapy and counseling, supervision by a senior therapist or counselor is required while the trainee learns therapeutic techniques. In rural and other remote settings where the task of providing face-to-face supervisory services to trainees is complicated by geographic constraints, **telesupervision** has been used to provide feedback to a trainee via technology such as e-mail, telephone, or videoconferencing. A prescribed number of hours of supervision is required by state licensing boards as part of the requirements for obtaining a license in a mental health field.

**supervisory analysis** see CONTROL ANALYSIS.

**Supervisory Attentional System (SAS)** in the CONTROL OF ACTION MODEL, a theoretical higher level cognitive mechanism active in nonroutine or novel situations: It is held to be responsible for troubleshooting and decision making when habitual responses or automatic processes are ineffective or otherwise unsatisfactory. The SAS is thought to be involved in carrying out a variety of other EXECUTIVE FUNCTIONS as well, and it is seen as a network for the coordination and control of cognitive activity and intentional behavior. Compare CONTENTION SCHEDULING SYSTEM. [described in 1980 by U.S. cognitive scientist Donald A. Norman (1935– ) and British neuropsychologist Timothy Shallice (1940– )]

**supervisory control** in ergonomics, the role allocated to the human operator in highly automated systems. The operator is responsible for system monitoring, interpretation, decision making, and manual correction or intervention. Reducing the operator's role to one of supervisory control may result in either optimal or degraded performance, depending chiefly on system design. See also CLUMSY AUTOMATION; FUNCTION ALLOCATION.

**superwoman syndrome** a set of characteristics found in a woman who performs or attempts to perform all the duties typically associated with several different full-time roles, such as wage earner, mother, homemaker, and wife.

**supination** *n.* **1.** the act of turning the forearm so that the palm faces upward, or the condition resulting from this action. **2.** the act of turning the foot so that the sole faces inward and the medial (inner) margin is raised (as in walking on the outside of one's feet), or the condition resulting from such an action. **3.** the state or condition of being supine (see POSTURE). Compare PRONATION. —**supinate** *vb.*

**supine** *adj.* see POSTURE.

**supplementary motor area (SMA)** an area of the MOTOR CORTEX with SOMATOTOPIC ORGANIZATION involved in planning and learning new movements that have coordinated sequences. In contrast to the PREMOTOR AREA, neuronal input to the supplementary motor area is triggered more by internal representations than by external events.

**supplication** *n.* a strategy for SELF-PRESENTATION that involves depicting oneself as weak, needy, or dependent so as to motivate others to provide assistance or care. —**supplicate** *vb.*

**supply reduction** see DEMAND REDUCTION.

**supported employment** a VOCATIONAL REHABILITATION program that places individuals with disabilities di-

rectly into the paid competitive working environment as quickly as possible. With an emphasis on matching an individual with an appropriate employer and work environment, it involves individualized, rapid placement and ongoing support, training, and assessment that take into account the person's vocational and personal needs. Supported employment differs from employment in a SHELTERED WORKSHOP in that the latter occurs in a controlled, noncompetitive working environment. See also TRANSITIONAL EMPLOYMENT.

**supported housing** a program that offers homeless individuals access to permanent housing in the larger community and a wide range of community-based treatment and support services designed to maximize independent living skills and successful community integration. See HOMELESSNESS.

**supported living** a situation in which people with intellectual or developmental disabilities live singly or in small groups in homes where assistance in performing activities of daily living and learning independent living skills is available. Varying degrees of assistance are provided by staff, depending on the skills of the particular residents.

**supported retirement** a daily or regular program of activity for an aging or aged person with intellectual disability that emphasizes socialization and recreational engagement, rather than the habilitation activities and vocational involvement typical of adult day services.

**support group** a group similar in some ways to a SELF-HELP GROUP in that members who share a problem come together to provide help, comfort, and guidance. A primary distinguishing feature of support groups is in their leadership: a professional or agency-based facilitator who often does not share the problem of members. In addition, support groups often last for only a limited predetermined number of sessions, and a fee for attendance is sometimes charged. Also called **social support group**.

**supportive-expressive psychotherapy** a form of brief PSYCHODYNAMIC PSYCHOTHERAPY that focuses on the therapist-client relationship and on relationships outside of therapy to define a central relationship pattern that is the focus of treatment. [developed by U.S. psychologists Lester LUBORSKY and Paul Crits-Christoph]

**supportiveness** *n.* in psychotherapy and counseling, an attitude or response of acceptance, encouragement, or reassurance displayed by the therapist or counselor toward the client.

**supportive psychotherapy** a form of therapy that aims to relieve emotional distress and symptoms without probing into the sources of conflicts or attempting to alter basic personality structure. It emphasizes reassurance, reeducation, advice, persuasion, remotivation, and encouragement of desirable behavior. It is frequently applied to individuals with relatively minor or limited problems, as well as to fragile or hospitalized patients, as a means of maintaining morale and preventing deterioration.

**supportive services** **1.** programs ancillary to the treatment or rehabilitation of people with illnesses or disabilities. **2.** social service programs (e.g., child care, transportation) that are necessary to enable an individual to participate in the workforce or function more independently.

**suppository** *n.* a bullet-shaped medicinal preparation for rectal administration. It dissolves in the rectum to release

its active component, which is absorbed through the rectal mucosa. It is primarily used to treat constipation and hemorrhoids. Vaginal suppositories are available for treating gynecological conditions.

**suppressed anger syndrome** see HWA-BYUNG.

**suppression** *n.* **1.** a conscious effort to put disturbing thoughts and experiences out of mind, or to control and inhibit the expression of unacceptable impulses and feelings. It is distinct from the unconscious defense mechanism of REPRESSION in psychoanalytic theory. **2.** see CONDITIONED SUPPRESSION; RESPONSE SUPPRESSION. —**suppress** *vb.*

**suppressive therapy** a form of psychotherapy directed toward the reinforcement of the client's defense mechanisms and the suppression (rather than expression) of distressing experiences and feelings. Compare EXPRESSIVE THERAPY.

**suppressor effect** a reduction in the correlation between two variables due to the influence of a third variable. Compare REINFORCER EFFECT.

**suppressor variable** a condition or characteristic that is associated with an INDEPENDENT VARIABLE, such that the correlation between the independent variable and the DEPENDENT VARIABLE is less than what it would be otherwise.

**suprachiasmatic nucleus (SCN)** a small region of the HYPOTHALAMUS in the brain, above the OPTIC CHIASM, that is the location of the CIRCADIAN OSCILLATOR, which controls circadian rhythms. It receives direct input from the retina. See also BIOLOGICAL CLOCK.

**supraliminal** *adj.* describing stimulation that is above the DIFFERENCE THRESHOLD or ABSOLUTE THRESHOLD.

**supraliminal perception** **1.** perception of stimuli that are above the absolute threshold (i.e., that are not subliminal). **2.** the processing of above-threshold information that is ignored by the perceiver. Examples include the hum of conversation in a crowded room or visual information displayed very briefly during experiments on perception. Compare SUBLIMINAL PERCEPTION.

**supramarginal gyrus** a ridge on the inferior parietal lobe that is near WERNICKE'S AREA and is reportedly involved in the articulation and phonological processing of words. Lesions on this gyrus have been associated with some forms of aphasia.

**supranuclear palsy** see PROGRESSIVE SUPRANUCLEAR PALSY.

**supraoptic nucleus** a particular collection of neurons in the HYPOTHALAMUS that lies above the OPTIC CHIASM. Neurons in this nucleus project to the posterior lobe of the PITUITARY GLAND and secrete the hormones OXYTOCIN and VASOPRESSIN.

**suprarenal gland** see ADRENAL GLAND.

**suprasegmental** *adj.* in linguistics, denoting the phonological features of speech that extend over a series of SEGMENTS rather than forming individual PHONEMES. In English, the principal suprasegmental features are TONE (pitch), STRESS, and JUNCTURE. Also called **prosodic**. See also PARALANGUAGE; PROSODY.

**suprasegmental reflex** see SPINAL REFLEX.

**surd** *n.* an UNVOICED consonant.

**surface agraphia** see LEXICAL AGRAPHIA.

**surface color** a color perceived as localized on a surface, as opposed to a color that permeates an object (BULKY COLOR) or a FILM COLOR that is not localized to a surface or an object.

**surface dyslexia** a form of acquired DYSLEXIA in which a person is overly reliant on spelling-to-sound correspondence and therefore has difficulty reading irregularly spelled words. Surface dyslexia manifested as a form of DEVELOPMENTAL DYSLEXIA has also been described. See also DEEP DYSLEXIA. [first described in 1973 by British neuropsychologists John C. Marshall (1939–2007) and Freda Newcombe (1925–2001)]

**surface structure (s-structure)** in the TRANSFORMATIONAL GENERATIVE GRAMMAR developed by Noam CHOMSKY, the structure of a grammatical sentence as it actually occurs in speech or writing, as opposed to its underlying DEEP STRUCTURE or abstract logical form. In Chomsky's theory, the surface structure of a sentence is generated from the deep structure by a series of transformational rules involving the addition, deletion, or reordering of sentence elements. Psycholinguists have investigated whether and to what extent this may serve as a model for the cognitive processes involved in forming and interpreting sentences.

**surface therapy** psychotherapy directed toward relieving the client's symptoms and emotional stress through such measures as reassurance, suggestion, and direct attempts to modify attitudes and behavior patterns, rather than through exploration and analysis of unconscious motivation and underlying dynamics. Compare DEPTH THERAPY.

**surface trait** in CATTELL'S PERSONALITY TRAIT THEORY, a characteristic manifested as a group of interrelated observable behaviors. For example, arriving early for appointments and leaving the office only after one's work is complete are visible manifestations of the characteristic of conscientiousness. Surface traits appear consistently and are thought to cluster and to reflect SOURCE TRAITS, which are regarded as the underlying building blocks of personality.

**surgency** *n.* a personality trait marked by cheerfulness, responsiveness, spontaneity, and sociability but at a level below that of EXTRAVERSION or MANIA. [defined by Raymond B. CATTELL] —**surgent** *adj.*

**surplus energy theory** the hypothesis that children and young animals engage in LOCOMOTOR PLAY because they have excess energy that needs to be expended. See also PLAY.

**surprise** *n.* an emotion typically resulting from the violation of an expectation or the detection of novelty in the environment. It is considered by some theorists to be one of the emotions that have a universal pattern of facial expression. The physiological response includes raising or arching the eyebrows, opening the eyes wide, opening the mouth wide in an oval shape, and gasping.

**surprisingness** *n.* in psychological aesthetics, a measure of the degree to which one's expectations are disconfirmed by a work of art.

**surrogate** *n.* **1.** a person or object that substitutes for the role of an individual who has a significant position in a family or group. See FATHER SURROGATE; MOTHER SURROGATE. **2.** more generally, any person or entity that substitutes for another.

**surrogate decision making** a provision in law or a

regulation permitting the appointment of a surrogate for a person—frequently one with intellectual disability, dementia, or mental disorder—who is not competent to make specific decisions regarding consent to medical, surgical, or other health care procedures. The surrogate makes these determinations on behalf of the person.

**surrogate father** see FATHER SURROGATE.

**surrogate mother** see MOTHER SURROGATE.

**surrogate variable** see PROXY VARIABLE.

**sursumvergence** *n.* the deviation or turning upward of one eye in relation to the other. See STRABISMUS.

**survey 1.** *n.* a study in which a group of participants is selected from a population and data about or opinions from those participants are collected, measured, and analyzed. Information typically is gathered by interview or self-report questionnaire, and the results thus obtained may then be extrapolated to the whole population. **2.** *vb.* to carry out a survey.

**survey error** the degree to which the results of a survey are inaccurate, due to such factors as SAMPLING BIAS, content or measurement flaws, or the RESPONSE BIASES of participants. See MEASUREMENT ERROR; SAMPLING ERROR.

**survey knowledge** an overall mental representation of a spatial environment, as if one had a bird's-eye view of the environment, as contrasted with specific route knowledge (see ROUTE LEARNING).

**survival analysis** a family of statistical methods used to model a variety of time-related outcomes. The simplest application of survival analysis involves estimating the amount of time until the occurrence of an event (e.g., death, illness, graduation, marriage) for a group of individuals, but the technique also may be applied to compare durations for two or more groups and to build multivariate models that explain variation in duration. Also called **event history analysis**.

**survival instinct** see SELF-PRESERVATION INSTINCT.

**survival of the fittest** the tendency of individuals that are better adapted to a particular environment to be more successful at surviving and producing offspring. This concept is inherent in the theory of evolution by NATURAL SELECTION, as proposed in the 1850s by British naturalists Charles DARWIN and Alfred Russel Wallace (1823–1913). See also COMPETITION FOR RESOURCES; DARWINIAN FITNESS; SOCIAL DARWINISM. [coined by Herbert SPENCER in *Principles of Biology* (1864) and adopted by Darwin as a synonym for natural selection in the fifth edition of his *Origin of Species* (1869)]

**survival rate** in SURVIVAL ANALYSIS, a value used to indicate the frequency of a particular event's occurrence at a specific point in time. For example, in a health study, the survival rate (i.e., occurrence of death) may be lower within the 1st year of the diagnosis of a moderately serious disease but become progressively higher over time as the disease becomes more serious.

**survival ratio** in SURVIVAL ANALYSIS, a value used to indicate the elapsed time prior to an event of interest (e.g., disease onset, death) in relation to the total amount of time studied. Larger survival ratios indicate a longer time until the event's occurrence.

**survival value** the degree to which a behavioral, physiological, or physical trait will contribute to REPRODUCTIVE

SUCCESS. A trait that can be shown to increase the probability of reproductive success in a given environment has high survival value.

**survivor guilt** remorse or guilt for having survived a catastrophic event when others did not or for not suffering the ills that others had to endure. It is a common reaction stemming in part from a feeling of having failed to do enough to prevent the event or to save those who did not survive. Survivor guilt is also experienced by family members who are found not to carry deleterious genetic mutations that have led to disease and, often, death in other family members, or by family or friends who feel that they did not do enough to succor their loved ones prior to death.

**survivorship** *n.* **1.** the process of living through and surviving severe disease (e.g., cancer), traumatic life events (e.g., child abuse), or environmental disaster (e.g., earthquake). **2.** the state of living into very old age.

**susceptibility** *n.* vulnerability; readily affected by or at increased risk of acquiring a particular condition, such as an infection, injury, or disorder.

**susceptibility rhythms** cyclical variations in sensitivity to infections or allergic responses.

**SUSOPS** acronym for SUSTAINED OPERATIONS.

**suspended rootogram** see HANGING ROOTOGRAM.

**suspensory ligament** see ZONULES.

**suspicious jealousy** a type of JEALOUSY in which a person fears the loss of a valued relationship to a rival even though the person's partner has not misbehaved and there is no factual basis for this worry. Although suspicious jealousy is unfounded, it may give rise to emotions and behaviors (e.g., anger, conflict, snooping, stalking) that create the selfsame loss of a relationship that the jealous person seeks to avert. Compare REACTIVE JEALOUSY.

**suspiciousness** *n.* mistrust of the motives or sincerity of others. Although a degree of suspiciousness in certain situations can be natural and likely serves the purposes of self-preservation or survival, extreme, pervasive suspiciousness is a common characteristic of individuals with PARANOID PERSONALITY DISORDER.

**sustained attention** attentional focus on a task for an extended length of time. Compare ABSORPTION.

**sustained operations (SUSOPS)** an extended work schedule under demanding conditions. A sustained workload can combine with fatigue and reduced or fragmented sleep to degrade performance, productivity, safety, and the effectiveness of an operation.

**sustained-release preparation** see SLOW-RELEASE PREPARATION.

**susto** *n.* a CULTURE-BOUND SYNDROME occurring among Latinos in the United States and populations in Mexico, Central America, and South America. After experiencing a frightening event, individuals fear that their soul has left their body. Symptoms include weight loss, fatigue, muscle pains, headache, diarrhea, unhappiness, troubled sleep, lack of motivation, and low self-esteem. Also called **chibih; espanto; pismo; perdida del alma; tripa ida**.

**swallowing** *n.* the process by which ingested material (food, liquid, etc.) is transferred from the mouth cavity to the stomach, which involves a complex series of reflex muscle contractions and relaxations. The muscles of the cheeks, tongue, and roof of the mouth first contract to

form a chute, after which the tongue presses upward and backward against the hard palate. As the substance to be swallowed passes toward the back of the mouth, the soft palate is raised to close the opening to the nasopharynx. At the same time, the epiglottis is lowered over the opening to the trachea (windpipe) to prevent food or fluid entering the respiratory system, and the larynx moves upward to form a seal against the lower side of the epiglottis. As the substance swallowed enters the esophagus, it is moved along by alternate contractions of two layers of muscles (composed of, respectively, longitudinal and circular muscle fibers) so that the food or fluid is advanced toward the stomach, regardless of body position. Also called **deglutition**.

**swarm intelligence** see ANIMAL INTELLIGENCE.

**SWB** abbreviation for SUBJECTIVE WELL-BEING.

**sweating** *n.* the discharge of a secretion (**sweat**, which comprises water, salts, and various chemicals) from the sweat glands in the skin. Sweating is important in the control of body temperature. Also called **perspiration**.

**sweet** *adj.* denoting the pleasurable taste associated with sugars, an immediate source of energy. Sugars are detected by specialized proteins contained in a subset of taste receptor cells mainly toward the front of the tongue (see FUNGIFORM PAPILLAE). —**sweetness** *n.*

**swinging** *n.* slang for uninhibited sexual expression, as in partner swapping and other forms of group sex, one-night stands, and experimentation with unusual sexual activities (e.g., bondage and discipline).

**switchback design** a type of WITHIN-SUBJECTS DESIGN in which participants are assigned to multiple experimental conditions in a specific pattern that controls for personal and time-related variations that may influence individuals' responses. For example, suppose a researcher is investigating the effect of three types of instruction (A, B, and C) on the performance of six participants, each of whom has a different learning curve. A switchback arrangement for such a study might be

A C B A C B

C B A B A C

A C B A C B

C B A B A C

Each row represents a distinct time period and each column represents a specific participant, with only two instruction types switching back and forth for any given participant.

**switch cost** in studies of task switching, the loss of efficiency associated with redirecting attention from one task to another.

**switch device** the input mechanism that allows a person to activate an ENVIRONMENTAL CONTROL DEVICE. See also CONTROL DEVICE; FEEDBACK DEVICE; TARGET DEVICE.

**switching** *n.* **1.** in psychotherapy, changing the course of the discussion during a session. This may be done by the client, either purposefully or nonconsciously, when the discussion is too close to sensitive issues. Switching may also be done by the therapist to change the discussion to more relevant therapeutic issues. **2.** in DISSOCIATIVE IDENTITY DISORDER, the often rapid movement between one personality and another.

**switch process** the process by which a person with a BIPOLAR DISORDER experiences the transition from a MAJOR DEPRESSIVE EPISODE to a MANIC EPISODE or vice versa. These processes usually include brief periods of relatively unimpaired functioning.

**SWLS** abbreviation for SATISFACTION WITH LIFE SCALE.

**Sydenham's chorea** see CHOREA. [Thomas Sydenham (1624–1689), English physician]

**syllabary** *n.* a writing system that represents each SYLLABLE (rather than each PHONEME) with a separate symbol. For instance, Japanese and Cherokee writing systems use syllabaries either in whole or in part. Compare ALPHABET.

**syllable** *n.* in linguistics, a unit of articulation consisting of a stand-alone vowel or a vowel combined with one or more consonants. The syllable length of a speaker's sentences is often used as a standard of comparison in psycholinguistic research and in psychometric tests of language development and mental ability. —**syllabic** *adj.*

**syllogism** *n.* a form of DEDUCTIVE REASONING in which a categorial proposition (i.e., one taking the form *all X are Y*, *no X are Y*, *some X are Y*, or *some X are not Y*) is combined with a second proposition having one of its terms in common with the first to yield a third proposition (the conclusion). For example: *All men are mortal; some men are tall; therefore some mortals are tall*. Of the numerous possible combinations of terms, only 24 are formally valid. An example of an invalid syllogism would be *Some women are tall; all mothers are women; therefore some mothers are tall*. Although the conclusion is doubtless empirically correct, it cannot be deduced from these premises. —**sylogistic** *adj.*

**Sylvian aqueduct** see CEREBRAL AQUEDUCT.

**Sylvian fissure** see LATERAL SULCUS.

**sym-** *prefix* see SYN-.

**symbiosis** *n.* **1.** any relationship in which two species live together in close association, especially one in which both species benefit (see MUTUALISM). For example, in tropical Amazonia, a species of ant lives on a particular tree species that it uses for food and shelter, at the same time removing lichen and other parasites that might harm the tree. Also called **biological symbiosis**. **2.** the stage in infantile development when the infant's dependence is total and he or she is neither biologically nor psychologically separated from the mother. See also SEPARATION-INDIVIDUATION. [proposed by Hungarian-born U.S. child psychoanalyst Margaret Schönberger Mahler (1897–1985)] **3.** a mutually reinforcing relationship in which one individual is overdependent on another to satisfy needs. Such a relationship hampers the development or independence of both individuals and usually results in dysfunction when the dominant individual is unwilling to provide for the dependent individual. Also called **symbiotic relationship**. —**symbiotic** *adj.*

**symbiotic infantile psychosis** see SYMBIOTIC PSYCHOSIS.

**symbiotic marriage** a marriage or partnership of CODEPENDENCY, whereby the individuals are entirely reliant upon each other for the gratification of certain psychological needs. Compare SYNERGIC MARRIAGE.

**symbiotic psychosis** an obsolete name for a condition, occurring in children between the ages of 2 and 5, that is characterized by complete emotional dependence on the mother, inability to tolerate separation from her, reactions

of anger and panic if any separation is threatened, and developmental lag. Some of these features are characteristic of SEPARATION ANXIETY DISORDER. Also called **symbiotic infantile psychosis**; **symbiotic infantile psychotic syndrome**. [first described by Hungarian-born U.S. child psychoanalyst Margaret Schönberger Mahler (1897–1985)]

**symbiotic relationship** see SYMBIOSIS.

**symbol** *n.* **1.** any object, figure, or image (e.g., flag, logo, pictogram, religious symbol such as a cross) that represents something else. A written or spoken word can be regarded as a particular kind of symbol (see ARBITRARY SYMBOL; SIGNIFIER). In literature and art, symbols are generally suggestive rather than explicit in their meaning: For example, a rose may suggest ideas of beauty, love, femininity, and transience without being limited to any of these meanings in particular. Carl JUNG maintained that the symbols of religion, mythology, and art throw special light on the COLLECTIVE UNCONSCIOUS. See also SIGN. **2.** in classical psychoanalytic theory, a disguised representation of a repressed idea, impulse, or wish. See also SYMBOLIZATION. **3.** in safety engineering, a pictorial device used in risk communications to warn workers or consumers of the hazards associated with tools or systems. See SIGNAL WORD PANEL. —**symbolic** *adj.*

**symbol-digit test** a task in which a person is given a list of symbols, each with a corresponding digit, and then a long list of symbols without the digits, each of which the person has to fill in. The test measures the number of symbol-digit pairs completed in a fixed time or the time taken to complete a fixed number of pairs. See also CODE TEST.

**symbol grounding** the process of establishing and maintaining the correspondence between symbolic representations of objects and the actual physical objects in the real-world environment. For example, if a child is instructed to retrieve the green box from the shelf, he or she cannot do so properly unless able to associate the internal representation of the item conveyed by the concepts of “green” and “box” with the appropriate sensory experience actually associated with the physical object itself. Also called **perceptual anchoring**.

**Symbolic** *n.* the realm of symbols or SIGNIFIERS: one of three aspects of the psychoanalytic field defined by French psychoanalyst Jacques Lacan (1901–1981). The achievement of symbolization marks the beginning of ego differentiation and is associated with the infant’s entrance into the world of language, culture, law, and morality. The other two realms are the IMAGINARY and the REAL. See also MIRROR PHASE; NAME-OF-THE-FATHER.

**symbolic action** see SYMPTOMATIC ACT.

**symbolic attitude** the evaluation of an ATTITUDE OBJECT based on the extent to which it is seen as consistent or inconsistent with a person’s moral values. See also VALUE-EXPRESSIVE FUNCTION OF AN ATTITUDE.

**symbolic displacement** the process of transferring a response, usually emotional, from its original stimulus to one that represents it.

**symbolic function** in PIAGETIAN THEORY, the cognitive ability to mentally represent objects that are not in sight. For example, a child playing with a toy can mentally picture and experience the toy even after it has been taken away and he or she can no longer see it. Symbolic function emerges early in the PREOPERATIONAL STAGE and is ex-

pressed through DEFERRED IMITATION, language, SYMBOLIC PLAY, and mental IMAGERY. Also called **semiotic function**.

**symbolic interactionism** a sociological theory that assumes that self-concept is created through interpretation of symbolic gestures, words, actions, and appearances exhibited by others during social interaction. In contrast to Freudian and other approaches that postulate extensive inner dispositions and regard social interaction as resulting from them, symbolic interactionists believe that inner structures result from social interactions. U.S. social thinkers George Herbert MEAD and Charles Horton Cooley (1864–1929) are recognized exponents of this view. See GENERALIZED OTHER; LOOKING-GLASS SELF; REFLECTED APPRAISALS.

**symbolic learning theory** a theory that attempts to explain how IMAGERY works in PERFORMANCE ENHANCEMENT. It suggests that imagery develops and enhances a coding system that creates a mental blueprint of what has to be done to complete an action.

**symbolic logic** the systematic use of symbols in logical analysis. In modern symbolic logic, the symbols used are those of mathematics, particularly those of SET THEORY. The language of mathematics is well suited to the investigation of the precise conditions of validity in arguments because it is an ARTIFICIAL LANGUAGE, lacking the connotations and subjective meanings present in a NATURAL LANGUAGE, and because relations between mathematical entities are simple and precisely defined. See LOGIC.

**symbolic matching to sample** see ARBITRARY MATCHING TO SAMPLE.

**symbolic mode** see SYMBOLIC REPRESENTATION.

**symbolic modeling** see PARTICIPANT MODELING.

**symbolic play** a form of play in which the child uses objects as representations of other things. For example, a child may put a leash on a stuffed animal, take it for a walk, and attempt to feed it. Symbolic play may or may not be social. See also IMAGINARY COMPANION.

**symbolic process** **1.** in cognitive psychology, any cognitive activity in which ideas, images, or other MENTAL REPRESENTATIONS serve as mediators of thought. The term is often used to distinguish the HIGHER MENTAL PROCESSES from either (a) lower cognitive functions, such as perception, or (b) neurophysiological activities that underlie processing at the symbolic level. See also SYMBOLIC THINKING; THINKING. **2.** in classical psychoanalytic theory, see SYMBOLIZATION.

**symbolic representation** the process of mentally representing objects and experiences through the use of symbols (including linguistic symbols). In Jerome Seymour BRUNER’s theory of cognitive development, it is one of three modes of representing knowledge (compare ENACTIVE REPRESENTATION; ICONIC REPRESENTATION). A child in this mode (called the **symbolic mode** or **stage**) is able to depict and convey ideas through the use of words, sounds, and play; the child can, for example, imagine that he or she is a fire engine and make siren noises while pushing a block that represents a speeding engine.

**symbolic reward** something that has no intrinsic value but is nevertheless prized because it represents something of value. For example, being listed in a city’s social register may be regarded as a symbolic reward for attainment of high social standing.

**symbolic stage 1.** see PREOPERATIONAL STAGE. **2.** see SYMBOLIC REPRESENTATION.

**symbolic thinking** the ability to think about objects and events that are not within the immediate environment. It involves the use of signs, symbols, concepts, and abstract relations, as evidenced by language, numeracy, and artistic or ritual expression. Archaeological finds suggest that symbolic thinking may have evolved in humans much earlier than previously thought, possibly toward the end of the Lower Paleolithic period (i.e., more than 70,000 years ago). See also SYMBOLIC PROCESS.

**symbolism** *n.* **1.** the use of symbols, which is a necessary component of thinking, language use, and numeracy and therefore a fundamental feature in human culture generally (see SEMIOTICS; SYMBOLIC THINKING). In particular, symbolism is central to the literary and visual arts. A specific, early modernist movement, referred to as *Symbolism*, developed in France in the mid- to late 19th century as a reaction to REALISM and NATURALISM. The writing, primarily poetry and drama, was highly evocative and made extensive use of indirect symbolic language to represent character, situation, and action. Leading exponents were the French poets Charles Baudelaire (1821–1867), Arthur Rimbaud (1854–1891), and Stéphane Mallarmé (1842–1898) and the Belgian dramatist Maurice Maeterlinck (1862–1949). **2.** see SYMBOLIZATION.

**symbolization** *n.* **1.** in classical psychoanalytic theory, the substitution of a symbol for a repressed impulse, affect, or idea in order to avoid censorship by the superego (e.g., dreaming of a steeple or other PHALLIC SYMBOL instead of a penis). Also called **symbolism**. **2.** in SOCIAL-COGNITIVE THEORY, the ability to think about one's social behavior in terms of words and images. —**symbolize** *vb.*

**symbol-substitution test** see CODE TEST.

**SYMLOG** *n.* systematic multiple level observation of groups: a theory and observational system for studying group behavior. The model assumes that group activities and group members can be classified along three dimensions (dominance–submissiveness, friendliness–unfriendliness, and acceptance–nonacceptance of authority) and that groups whose behavioral profiles are characterized by dominance, friendliness, and acceptance of authority usually work together more effectively. See also STRUCTURED OBSERVATION. [developed by U.S. social psychologist Robert Freed Bales (1916–2004)]

**Symmetrel** *n.* a trade name for AMANTADINE.

**symmetrical distribution** a distribution in which the frequency of values above the MEAN are a mirror image of those below the mean. Compare ASYMMETRICAL DISTRIBUTION.

**symmetry** *n.* **1.** the mirrorlike correspondence of parts on opposite sides of a center, providing balance and harmony in the proportions of objects. This is considered an aesthetically pleasing quality. Distinct patterns of symmetry are widely produced. For example, almost all ornamental bands fall into one of seven types of **band symmetry**, and essentially all patterned wallpaper can be grouped into 17 types of **plane symmetry**. **2.** one of the GESTALT PRINCIPLES OF ORGANIZATION. It states that people tend to perceive objects as coherent wholes organized around a center point; this is particularly evident when the objects involve unconnected regions bounded by borders. Also called **law (or principle) of symmetry**. **3.** in mathematics and sta-

tistics, equality relative to some axis. More specifically, it is a condition in which values are arranged identically above and below the middle of a data set (see NORMAL DISTRIBUTION) or above and below the diagonal of a matrix. Many standard statistical techniques are appropriate only for symmetrical data, such that nonsymmetrical data often are transformed into a roughly symmetrical form prior to analysis. Compare ASYMMETRY. **4.** see STIMULUS EQUIVALENCE. —**symmetrical** *adj.*

**symmetry compulsion** a compulsion to arrange objects in a certain way (e.g., in a room) or in a particular order (e.g., on a desk). Symmetry compulsion is associated with obsessions about neatness or perfection. It can be a symptom of OBSESSIVE-COMPULSIVE DISORDER or, sometimes, of OBSESSIVE-COMPULSIVE PERSONALITY DISORDER.

**symmetry test** a method of determining whether a graphical representation of a data set demonstrates SYMMETRY about its *x*-axis, *y*-axis, or origin, so that knowing the arrangement of values for one portion of the graph (e.g., values above the mean) enables one to determine the values for the opposite, mirror-image portion of the graph (i.e., values below the mean). If the data do possess such symmetry, they can be analyzed using statistical techniques that assume a NORMAL DISTRIBUTION.

**sympathectomy** *n.* a surgical procedure in which portions of the sympathetic nervous system are excised, severed, or otherwise disrupted. In **chemical sympathectomy**, this is accomplished by the administration of specific drugs.

**sympathetic–adrenal–medullary axis (SAM)** a neuroendocrine stress-response system. A stressor is perceived via the sympathetic nervous system, triggering in humans the production and release of hormones such as epinephrine and norepinephrine by the adrenal gland (in particular, the medulla). The SAM interacts chemically with the HYPOTHALAMIC–PITUITARY–ADRENAL AXIS. Also called **sympathetic–adrenal–medullary system**; **sympathetic adrenomedullary system**.

**sympathetic chain** either of two beadlike chains of GANGLIA of the sympathetic nervous system, one chain lying on each side of the spinal column.

**sympathetic division** see SYMPATHETIC NERVOUS SYSTEM.

**sympathetic ganglion** any of the ganglia that form part of either SYMPATHETIC CHAIN.

**sympathetic induction** the process in which one person's expressed emotion elicits a similar emotion in another person. See EMPATHY; SYMPATHY.

**sympathetic nervous system** one of the two divisions of the AUTONOMIC NERVOUS SYSTEM (ANS), the other being the PARASYMPATHETIC NERVOUS SYSTEM. Anatomically it consists of PREGANGLIONIC AUTONOMIC NEURONS whose fibers run from the thoracic and lumbar regions of the spinal cord to the chains of sympathetic ganglia. From these arise the fibers of POSTGANGLIONIC AUTONOMIC NEURONS, which innervate organs ranging from the eyes to the reproductive organs. It is defined functionally in terms of its ability to act as an integrated whole in affecting a large number of smooth muscle systems simultaneously, usually in the service of enhancing the FIGHT-OR-FLIGHT RESPONSE. Typical sympathetic changes include dilation of the pupils to facilitate vision, constriction of the peripheral arteries to supply more blood to the muscles and the brain, secretion

of epinephrine to raise the blood-sugar level and increase metabolism, and reduction of stomach and intestinal activities so that energy can be directed elsewhere. Thus, the sympathetic nervous system tends to antagonize the effects of the parasympathetic nervous system. Also called **sympathetic division**.

**sympathomimetic drug** any pharmacological agent that stimulates activity in the sympathetic nervous system because it potentiates the activity of norepinephrine or epinephrine or has effects similar to these neurotransmitters (hence it is also known as an **adrenergic drug**). Sympathomimetic drugs include the amphetamines and ephedrine.

**sympathy** *n.* **1.** feelings of concern or compassion resulting from an awareness of the suffering or sorrow of another. **2.** more generally, a capacity to share in and respond to the concerns or feelings of others. See also **EMPATHY**. **3.** an affinity between individuals on the basis of similar feelings, inclinations, or temperament. —**sympathetic** *adj.* —**sympathize** *vb.*

**sympatric** *adj.* describing species that occupy the same habitat or overlapping habitats. Species that do not occupy the same habitat are described as **allopatric**.

**sympathophilia** *n.* sexual interest and arousal derived from stage-managing the occurrence of a disaster and then watching it. The person may masturbate during the disaster or do so afterward while looking at pictures of the event or thinking about it. —**sympathophile** *n.*

**symptom** *n.* **1.** any deviation from normal functioning that is considered indicative of physical or mental pathology. See **DISEASE**; **DISORDER**; **SYNDROME**. **2.** in general, any event that is indicative of another event; for example, a series of strikes is a symptom of economic unrest. —**symptomatic** *adj.*

**symptomatic act** an action that appears to be intended for one purpose (or to have no particular purpose) but that betrays a hidden intention or meaning. In classical psychoanalytic theory, such acts are thought to represent repressed impulses, affects, or ideas. Also called **symbolic action**. See also **COMPROMISE FORMATION**; **FREUDIAN SLIP**; **PARAPRAXIS**; **SYMPTOM FORMATION**.

**symptomatic epilepsy** see **EPILEPSY**.

**symptomatic treatment** treatment directed toward the relief of distressing symptoms, as opposed to treatment focused on underlying causes and conditions. Symptomatic treatment of chronic migraines, for example, would involve the use of analgesics to relieve pain without attempting to discover why the migraines are occurring.

**sympmatology** *n.* **1.** the combined signs, markers, or indications of a disease or disorder. **2.** the scientific study of the markers and indications of a disease or disorder.

**symptom bearer** see **IDENTIFIED PATIENT**.

**symptom checklist** any self-report inventory used to assess the severity of symptoms of a given disorder, as in the **BECK DEPRESSION INVENTORY**, or across a range of disorders, as in the **SYMPTOM CHECKLIST-90-REVISED**. Symptom checklists are often used in both clinical and research settings to measure treatment progress and outcomes.

**Symptom Checklist-90-Revised (SCL-90-R)** a 90-item self-report inventory that measures the psychological symptoms and distress of community, medical, and psychiatric respondents along nine primary symptom dimensions and three global indices. The SCL-90-R adds four dimen-

sions to the five assessed in the **HOPKINS SYMPTOM CHECKLIST**, of which it is a direct outgrowth: hostility, phobic anxiety, paranoid ideation, and psychoticism.

**symptom cluster** a group of related symptoms that usually occur together, as in a **SYNDROME**.

**symptom complex** see **SYNDROME**.

**symptom-context method** a system of gathering data as symptoms arise in vivo in the psychotherapy session as an aid to psychotherapy research, case formulation, and treatment. It is similar to the **CORE CONFLICTUAL RELATIONSHIP THEME** method. [developed by Lester LUBORSKY]

**symptom formation** **1.** in psychoanalytic theory, the development of a somatic or behavioral manifestation of an unconscious impulse or conflict that provokes anxiety. Also called **substitute formation**. **2.** the process by which the indications of physical or psychological pathology develop.

**symptom removal** in psychotherapy, elimination of symptoms through direct treatment without addressing underlying issues and unconscious motivation. See also **SURFACE THERAPY**.

**Symptoms of Dementia Screener (SDS)** an informal checklist of 11 yes-or-no questions for lay persons to use to determine whether a family member or friend might be developing dementia. Answering yes to five or more questions (e.g., whether the individual often repeats himself or herself, forgets appointments) indicates that the family member or friend should see a health care professional for further evaluation.

**symptom specificity** a hypothesis stating that people with **PSYCHOSOMATIC DISORDERS** display abnormal responses to stress in particular physiological systems. According to this hypothesis, a person's complaints will center around a particular organ (e.g., the heart) and set of related symptoms (e.g., cardiovascular symptoms) rather than involving a variety of complaints about different organs or systems.

**symptom substitution** in the classical psychoanalytic theory of Sigmund FREUD, the development of a symptom to replace one that has cleared up as a result of treatment. It is said to occur if the unconscious impulses and conflicts responsible for the original symptom are not dealt with effectively. Symptom substitution is often used as an argument against therapies aimed at symptom removal alone, as in behavior therapy and some forms of hypnotherapy; however, this argument has not been validated.

**syn- (sym-) prefix** **1.** with or together (e.g., **SYNCHRONIZATION**). **2.** union or fusion (e.g., **SYNCRETISM**).

**Synanon** *n.* a residential drug treatment program that utilized confrontation and peer pressure to encourage its members to deal with their addiction. Founded in California in 1958 by Charles Dederich (1914–1997), himself a recovering alcoholic, Synanon was the first major drug treatment program in the United States, and its **TOUGH LOVE** approach to overcoming addiction was widely publicized as innovative and effective. It evolved into an experimental commune that Dederich proclaimed as a religion in the mid-1970s. Thereafter, amid accusations of authoritarian practices within the community and Dederich's no-contest plea to charges of attempted murder, Synanon declined in prominence and was eventually disbanded in 1991.

**synapse** *n.* the specialized junction through which neural signals are transmitted from one neuron (the presynaptic neuron) to another (the postsynaptic neuron). In most synapses, the knoblike ending (terminal button) of the axon of a presynaptic neuron faces the dendrite or cell body of the postsynaptic neuron across a narrow gap, the synaptic cleft. The arrival of a neural signal triggers the release of NEUROTRANSMITTER from SYNAPTIC VESICLES in the terminal button into the synaptic cleft. Here the molecules of neurotransmitter activate receptors in the postsynaptic membrane and cause the opening of ION CHANNELS in the postsynaptic cell. This may lead to excitation or inhibition of the postsynaptic cell, depending on which ion channels are affected. Also called **synaptic junction**. See also AXO-AXONAL SYNAPSE; ELECTRICAL SYNAPSE. —**synaptic** *adj.*

**synapse rearrangement** a refinement of synaptic connections, involving the loss of some synapses and the establishment of others, that is often seen in development or that follows loss of or damage to some neurons.

**synaptic bouton** see AXON.

**synaptic cleft** the gap within a synapse between the knoblike ending of the axon of one neuron and the dendrite or cell body of a neighboring neuron. The synaptic cleft is typically 20 nm to 30 nm wide. Also called **synaptic gap**.

**synaptic depression** the reduced ability of a synapse to transmit a neural signal. It is a form of NEURAL PLASTICITY.

**synaptic junction** see SYNAPSE.

**synaptic knob** see AXON.

**synaptic pruning** a neurodevelopmental process, occurring both before birth and up to the second decade of life, in which the weakest synapses between neurons are eliminated. In schizophrenia research, it is hypothesized that premature or excessive pruning may account for some forms of the disorder.

**synaptic transmission** see NEUROTRANSMISSION.

**synaptic transmitter** see NEUROTRANSMITTER.

**synaptic vesicle** any of numerous small spherical sacs in the cytoplasm of the knoblike ending of the axon of a presynaptic neuron that contain molecules of NEUROTRANSMITTER. The transmitter is released into the SYNAPTIC CLEFT when a nerve impulse arrives at the terminal button.

**synaptogenesis** *n.* the formation of synapses between neurons as axons and dendrites grow. See also EXPERIENCE-DEPENDENT PROCESS; EXPERIENCE-EXPECTANT PROCESS.

**syncheiria (synchiria)** *n.* a disorder of sensation in which a person experiences pain or touch sensations on both sides of the body when only one side is actually stimulated. It is considered a type of DYSCHIEIRIA.

**synchronicity** *n.* in the ANALYTIC PSYCHOLOGY of Carl JUNG, the simultaneous occurrence of events that appear to have a meaningful connection when there is no explicable causal relationship between these events, as in extraordinary coincidences or purported examples of telepathy. Jung suggested that some simultaneous occurrences possess significance through their very coincidence in time.

**synchronic linguistics** see DIACHRONIC LINGUISTICS.

**synchronism** *n.* the simultaneous occurrence or exist-

ence of phenomena. —**synchronic** *adj.* —**synchronous** *adj.*

**synchronization** *n.* in electroencephalography, a pattern of brain-wave activity that appears to be coordinated. See DELTA WAVE.

**synchronized sleep** see NREM SLEEP.

**synchronous brood** see ASYNCHRONOUS BROOD.

**synchronous correlation** in LONGITUDINAL DESIGNS, the degree of relationship between variables at a specific moment in time.

**synchrony** *n.* **1.** the simultaneous occurrence of things or events. **2.** the rhythmic coordination of speech and movement that occurs nonconsciously both in and between individuals during communication: In **self-synchrony**, the individual's bodily movements (e.g., hand gestures, head movements) tend to be synchronized with his or her own speech; in **interactional synchrony**, the movements of the listener correspond with the speech and movements of the speaker. The latter term also denotes an interaction between a parent and infant that is characterized by ATTUNEMENT even to small shifts in the responses or signals between them. Parent–infant synchrony in the first months of life has been shown to predict secure attachment in the infant and to promote the child's later emotional and social development. [originally studied in the 1970s by U.S. psychologist William S. Condon and U.S. psychiatrist Louis W. Sander (1918–2012)] **3.** in DANCE THERAPY, the act of moving together in harmony, which tends to bring people into greater emotional closeness. —**synchronous** *adj.*

**syncope** *n.* fainting; a transient loss of consciousness resulting from sudden reduction in the blood supply to the brain. The most common type is **vasovagal syncope**, in which the drop in blood supply is caused by heightened VAGUS NERVE activity in response to certain triggers, such as standing up too quickly or experiencing unpleasant stimuli (e.g., the sight of blood, severe emotional distress). —**syncopal** *adj.*

**syncretic thought** the first, or prelogical, stage of thinking in a child's life, characterized by egocentric and frequently animistic thought processes. For example, a simple block may be called a car, or a broomstick may be ridden as a horse. At this stage, connections are likely to be purely accidental: If the sun shines brightly on the child's birthday, for example, the child may think that the birthday is the reason for the sun to shine. See ANIMISM. [proposed by Jean PIAGET]

**syncretism** *n.* the integration of elements from two or more systems, theories, or concepts into a new system, theory, or concept. The term is mainly applied to systems in which cultures, beliefs, or doctrines that may appear incompatible are nevertheless combined. —**syncretic** *adj.*

**syndrome** *n.* a set of symptoms and signs that are usually due to a single cause (or set of related causes) and together indicate a particular physical or mental disease or disorder. Also called **symptom complex**.

**synecdoche** *n.* see METONYMY.

**synectics model** an educational approach that emphasizes creative problem solving and the development of teaching methods that enhance student creativity, such as encouraging metaphorical thinking.



**synergic marriage** a marriage or partnership that is enhanced by the contributions the partners can make in satisfying each other's psychological needs in a positive manner. Compare SYMBIOTIC MARRIAGE.

**synergism** *n.* the joint action of different elements such that their combined effect is greater than the sum of their individual effects, as, for example, in DRUG SYNERGISM. —**synergistic** *adj.*

**synergistic muscles** muscles that work together to produce a specific action, such as flexion or extension of a limb. See also AGONIST; ANTAGONIST.

**synergy** *n.* the coordination of forces or efforts to achieve a goal, as when a group of muscles work together in order to move a limb. Also called **coordinative structure**. —**synergic** *adj.*

**synesthesia (synaesthesia)** *n.* a condition in which stimulation of one sense generates a simultaneous sensation in another. These concomitant sensations are automatic (i.e., unintentional, uncontrollable, nonconscious, and efficient), vivid, and consistent over time. Originally, synesthesias also were believed to be asymmetric, but bidirectional associations in which either sensation can induce the other have recently been observed. There are more than 50 different types of synesthesia. Most common are **grapheme-color synesthesia**, in which a person sees colors when viewing letters, numbers, or words (i.e., graphemes) on a printed page, and **time-space synesthesia**, in which a person experiences months, days, hours, and other units of time as occupying specific spatial locations around him or her (e.g., January is 30° to the left of midline). Rarer types include **mirror-touch synesthesia**, in which a person watching another individual being touched feels a tactile sensation on his or her own body, and **lexical-gustatory synesthesia** (or **word-gustatory synesthesia** or **word-taste synesthesia**), in which individuals experience flavors when they hear certain words. Estimates vary, but nearly 5% of people may have some form of this neurological blending of the senses. Various explanations have been offered for the phenomenon, the most popular being the **cross-activation theory**, proposing that synesthesia stems from increased connectivity between neighboring sensory cortical areas as a result of incomplete developmental pruning of synapses, and the **disinhibited feedback theory**, proposing that synesthesia arises when the feedback that develops postnatally from higher cortical areas onto lower sensory cortical areas is too weak to inhibit effects from connections between these sensory areas. See also CHROMATIC AUDITION; CHROMESTHESIA; PHONISM.

**synkinesis (synkinesia)** *n.* see MOTOR OVERFLOW.

**synonym** *n.* a word that has exactly or almost exactly the same meaning as another word in the same language, so that the two are ordinarily interchangeable. Compare ANTONYM. —**synonymous** *adj.*

**synopsia** *n.* a form of SYNESTHESIA in which specific colors are associated with specific tones. Also called **synopsy**.

**syntactics** *n.* the structural and grammatical aspects of language, as distinguished from SEMANTICS.

**syntax** *n.* the set of rules that describes how words and phrases in a language are arranged into grammatical sentences, or the branch of linguistics that studies such rules. With MORPHOLOGY, syntax is one of the two traditional subdivisions of grammar. —**syntactic** or **syntactical** *adj.*

**syntactic mode** the highest stage in experiencing the world, characterized by CONSENSUAL VALIDATION, the development of logical, reality-oriented thinking, and the expression of ideas in a commonly accepted language. [defined by Harry Stack SULLIVAN]

**synthesis** *n.* **1.** the bringing together of disparate parts or elements—be they physical or conceptual—into a whole. For example, BIOSYNTHESIS is the process by which chemical or biochemical compounds are formed from their constituents, and MENTAL SYNTHESIS involves combining ideas and images into meaningful objects of thought. **2.** in philosophy, the final stage of a dialectical process: a third proposition that resolves the opposition between THESIS and ANTITHESIS. The synthesis then serves as the thesis in the next phase of the ongoing dialectic. This use of the term is particularly associated with the thought of German philosopher Georg Wilhelm Friedrich Hegel (1770–1831). See also DIALECTICAL MATERIALISM. —**synthetic** *adj.*

**synthetic approach** the combining (synthesizing) of various processes, systems, skills, or other components into a more complex whole as a means of learning or better understanding the whole. For example, a synthetic approach to learning to read is one in which the child first learns to recognize written letters and understand their associated sounds before learning to combine letters into syllables and words. Compare ANALYTIC APPROACH.

**synthetic cannabinoid** see TETRAHYDROCANNABINOL.

**synthetic language** see FUSIONAL LANGUAGE.

**synthetic opioid** see OPIOID.

**synthetic speech** speech produced by a machine, usually a computer. Speech synthesis algorithms differ in complexity and in other ways, and therefore the speech they produce varies in quality (intelligibility and naturalness). Compare COMPRESSED SPEECH; DIGITIZED SPEECH.

**synthetic validity** in industrial and organizational settings, a technique for inferring the validity of a selection test or other predictor of job performance from a JOB ANALYSIS. It involves systematically analyzing a job into its elements, estimating the validity of the test or predictor in predicting performance on each of these elements, and then combining the validities for each element to form an estimate of the validity of the test or predictor for the job as a whole. Synthetic validity can be useful in estimating the validity of selection procedures in small organizations where the larger samples required in CONCURRENT VALIDITY and PREDICTIVE VALIDITY are not available. See also JOB-COMPONENT VALIDITY.

**syntonia** *n.* a high degree of emotional responsiveness to the environment. —**syntonic** *adj.*

**syphilis** *n.* a contagious disease caused by infection with the spirochete bacterium *Treponema pallidum*. Syphilis is usually a SEXUALLY TRANSMITTED DISEASE, but it can be transmitted through a break or cut in the skin or mucous membrane; it can also be transmitted by an infected pregnant woman to an unborn child. Untreated, syphilis progressively destroys body tissues, particularly those of the heart and nervous system. See also CEREBRAL SYPHILIS; GENERAL PARESIS.

**syringe exchange program** see NEEDLE EXCHANGE PROGRAM.

**syringomyelia** *n.* a disorder marked by the presence of a fluid-filled cavity in the spinal cord that expands and elon-

gates over time, causing progressive damage to the spinal cord and resulting in weakness in the arms and legs and loss of temperature and pain sensation. Syringomyelia may occur as a complication of trauma, meningitis, hemorrhage, a tumor, or congenital defects.

**syrinx** *n.* (*pl.* **syringes**) see ANIMAL VOCALIZATION; VOCAL COMMUNICATION.

**system** *n.* **1.** any collective entity consisting of a set of interrelated or interacting elements that have been organized together to perform a function. **2.** an orderly method of classification or procedure (e.g., the Library of Congress Classification system). **3.** a structured set of facts, concepts, and hypotheses that provide a framework of thought or belief, as in a philosophical system. See CONCEPTUAL SYSTEM. **4.** a living organism or one of its major bodily structures (e.g., the respiratory system). —**systematic** *adj.*

**System 1** in the DUAL PROCESS THEORY of reasoning and decision making, a mode of thought comprising rapid, implicit, and automatic cognitive operations. System 1 is contrasted with the slow, explicit, and controlled processes of **System 2**. In other words, System 1 is intuitive and affective (i.e., what “feels right”), whereas System 2 is logically analytical and deliberate (i.e., what “makes sense”). Additionally, System 1 relies on ASSOCIATIVE MEMORY and thus has a high capacity and entails little effort; System 2 relies on WORKING MEMORY and thus has a limited capacity and entails greater effort. Errors of judgment arise from concurrent failures in both systems: The automatic operations of System 1 generate a faulty intuition, which the controlled operations of System 2 fail to detect and correct. For example, when deciding whether it is more dangerous to travel by car or airplane, a person may quickly recall horrific images of airline disasters and erroneously conclude that flying is more dangerous. This might then be compounded by a failure to think analytically about the total number of automobile versus airline accidents. A variety of other labels have been proposed over the years for this distinction, including *impulsive* versus *reflective*, *intuition* versus *reasoning*, *experiential* versus *rational*, *heuristic* versus *systematic*, and *Type 1* versus *Type 2*.

**systematic approach** see TOPOGRAPHIC MODEL.

**systematic behavioral universal** see PSYCHOLOGICAL UNIVERSAL.

**systematic desensitization** a form of BEHAVIOR THERAPY in which COUNTERCONDITIONING is used to reduce anxiety associated with a particular stimulus. It involves the following stages: (a) The client is trained in deep-muscle relaxation; (b) various anxiety-provoking situations related to a particular problem, such as fear of death or a specific phobia, are listed in order from weakest to strongest; and (c) each of these situations is presented in imagination or in reality, beginning with the weakest, while the client practices muscle relaxation. Since the muscle relaxation is incompatible with the anxiety, the client gradually responds less to the anxiety-provoking situations. See also COVERT DESENSITIZATION; IN VIVO DESENSITIZATION; RECIPROCAL INHIBITION. [introduced by Joseph WOLPE]

**systematic error** error in which the data values obtained from a sample deviate by a fixed amount from the true values within the population. For example, a scale that repeatedly provides readings 0.5 g lower than the true weight would be demonstrating systematic error. Systematic errors tend to be consistently positive or negative and

may occur as a result of SAMPLING BIAS or MEASUREMENT ERROR. Compare RANDOM ERROR.

**systematic multiple level observation of groups** see SYMLOG.

**systematic observation** an objective, well-ordered method for close examination of some phenomenon or aspect of behavior so as to obtain reliable data unbiased by observer interpretation. Systematic observation typically involves specification of the exact actions, attributes, or other variables that are to be recorded and precisely how they are to be recorded. The intent is to ensure that, under the same or similar circumstances, all observers will obtain the same results.

**systematic processing** see HEURISTIC-SYSTEMATIC MODEL.

**systematic random sampling** see SYSTEMATIC SAMPLING.

**systematic rational restructuring** a system of psychotherapy in which the client is encouraged to imagine anxiety-provoking situations while talking about them in a realistic manner that reduces his or her anxieties.

**systematic replication** the process of conducting a study again but with certain consistent differences, often in an attempt to extend the original research to different settings or participants. For example, a systematic replication could refine the design (e.g., by using more participants) or the methodology (e.g., by using more standardized procedures or objective measures). Compare DIRECT REPLICATION.

**systematics** *n.* see BIOLOGICAL TAXONOMY.

**systematic sampling** a type of sampling process in which all the members of a population are listed and then some objective, orderly procedure is applied to randomly choose specific cases. For example, the population might be listed alphabetically and every seventh case selected. Also called **quasirandom sampling**; **systematic random sampling**.

**systematic variance** see UNSYSTEMATIC VARIANCE.

**systematized delusion** a false, irrational belief that is highly developed and organized, with multiple elaborations that are coherent, consistent, and logically related. Compare FRAGMENTARY DELUSION.

**system flow diagram** in ergonomics, a flow chart used to illustrate the movement of materials or people within a WORK SYSTEM or to illustrate the direction of movement of information.

**systemic** *adj.* concerning or having impact on an entire system. For example, a systemic disorder affects an entire organ system or the body as a whole.

**systemic lupus erythematosus (SLE)** see LUPUS ERYTHEMATOSUS.

**systemic mucopolysaccharidosis** see MAROTEAUX-LAMY SYNDROME.

**systemic thinking** a combination of analytical and synthetic thinking that takes account of the impact of a system (or organization) and all its components together. Analytical thinking is concerned with breaking down a concept into its component parts, whereas synthetic thinking is the process of combining components to make a complete whole.

**system model of evaluation** a method of assessing

ORGANIZATIONAL EFFECTIVENESS in terms of a working model of an organization as a multifunctional social unit capable of maintaining itself. It is concerned with assessing the allocation of resources by the organization to reach an optimum level of operation, rather than with assessing the effectiveness of the organization in achieving public goals.

**systems analysis** the process—and the specialty area itself—of studying any system (e.g., the circulatory system, an organization, a family) so as to comprehend or clarify its internal workings and its purposes, often with a view to improving interrelations among constituent elements or to achieving a desired end more effectively. —**systems analyst** *n.*

**systems engineering** a discipline that adopts an integrated, multidisciplinary approach to the design and analysis of WORK SYSTEMS in order to account for the complex interdependencies of system components, people, and pro-

cesses. Its goal is to enhance efficiency and safety. See ERGONOMICS; MACROERGONOMICS; SOCIOTECHNICAL SYSTEMS APPROACH. See also ENGINEERING PSYCHOLOGY; HUMAN FACTORS ENGINEERING.

**systems of support** a framework for identifying the nature and profile of services and supports required by a person with intellectual disability. This is based on considerations of intellectual functioning and adaptive skills, psychological and emotional factors, physical health and etiological factors, and environmental or situational factors.

**systems theory** see GENERAL SYSTEMS THEORY.

**systolic blood pressure** the pressure of the blood against the arterial walls produced by the contraction of the heart muscles as the blood is forced into the aorta and the pulmonary artery. See BLOOD PRESSURE. Compare DIASTOLIC BLOOD PRESSURE.

# Tt

**T** in psychophysics, abbreviation for a transition point in judgments.

**T** symbol for the statistic obtained from the WILCOXON SIGNED-RANKS TEST.

**T<sup>2</sup>** see HOTELLING'S T<sup>2</sup> TEST.

**T<sub>3</sub>** abbreviation for TRIIODOTHYRONINE.

**T<sub>4</sub>** abbreviation for THYROXINE.

**TA** abbreviation for TRANSACTIONAL ANALYSIS.

**tabanka (tabanca)** *n.* a CULTURE-BOUND SYNDROME found in Trinidad that is precipitated by the loss of a sexual partner. Symptoms include those associated with major depression, such as sadness, feelings of worthlessness, and loss of interest in usual activities, and they may occasionally lead to suicide. It is most commonly seen in men who have been abandoned by their wives.

**tabes dorsalis** see LOCOMOTOR ATAXIA.

**table** *n.* a presentation of data in an ordered arrangement of overlaid vertical columns and horizontal rows. As with a GRAPH, the purpose of a table is to communicate information (either in words or numerical values) in a concise, space-efficient manner that can be assessed at a glance and interpreted easily. The columns have headings; the leftmost column, which usually lists the independent variable, is referred to as the **stub column**. The intersection of a column and a row is called a CELL. Tables are often accompanied by explanatory notes. —**tabular** *adj.*

**table-tilting** *n.* in SPIRITUALISM, movements of a table during a seance, ostensibly reflecting the efforts of spirits to communicate with the participants. In PARAPSYCHOLOGY, the same movements might be attributed to PSYCHOKINESIS. Table-tilting seances were very popular in the Victorian era, but the phenomenon itself was often faked. Also called **table-tipping**; **table-turning**.

**taboo (tabu)** **1.** *n.* a religious, moral, or social convention prohibiting a particular behavior, object, or person. The word derives from *tabu*, the Polynesian term for "sacred," which was used specifically in reference to objects, rites, and individuals consecrated to sacred use or service and, therefore, seen as forbidden, unclean, or untouchable in secular contexts. **2.** *adj.* prohibited or strongly disapproved.

**tabula rasa** the idea that at birth the mind is like a "blank tablet" (from Latin) and that all knowledge is subsequently derived from sensory experience. The notion of INNATE IDEAS is thus dismissed as a fiction. The phrase is mainly associated with John LOCKE, although he never in fact used it: Locke's actual phrase was "white paper." See EMPIRICISM.

**tachisme** *n.* see ACTION PAINTING.

**tachistoscope** *n.* a device that displays (usually by projecting) visual material on a screen for a specific amount of time, usually at very brief intervals. Words, numbers, pictures, and symbols can be rapidly presented in the right or left visual field. The device is used in experiments concerned with visual perception, recognition speed, and

memory. It is also widely used in market research concerned with advertising, logos, branding, and so forth. Also called **T-scope**.

**tachy-** *combining form* fast or accelerated.

**tachyathetosis** *n.* see EKBOM'S SYNDROME.

**tachycardia** *n.* see ARRHYTHMIA.

**tachypnea** *n.* speech that is characterized by persistent volubility and rapidity. See LOGORRHEA. See also PRESURED SPEECH.

**tachyphylaxis** *n.* a rapidly decreasing response to repeated administration of a drug. For example, the blood pressure of a patient might continue to rise despite repeated injections of a drug that normally would lower the blood pressure. —**tachyphylactic** *adj.*

**tachypsychia** *n.* an altered perception of time, in which time seems to speed up or slow down. See PSYCHOLOGICAL TIME. —**tachypsychic** *adj.*

**tacit knowledge** knowledge that is informally acquired rather than explicitly taught and allows a person to succeed in certain environments and pursuits. It is stored without awareness and therefore is not easily articulated. Many everyday skills are of this kind, such as the ability to recognize faces or to speak one's native language. Also called **implicit knowledge**; **unconscious knowledge**. [proposed by Hungarian-born British scientist and philosopher Michael Polanyi (1891–1976)]

**tacrine** *n.* an acetylcholinesterase inhibitor used for the treatment of mild to moderate dementia associated with Alzheimer's disease (see COGNITIVE ENHANCER). A common adverse reaction to tacrine is liver dysfunction, which limits its use. U.S. trade name: **Cognex**.

**tact-** *combining form* touch.

**tactic** *adj.* see TAXIS.

**tactile agnosia** loss or impairment of the ability to recognize and understand the nature of objects through touch. Several distinct subtypes have been identified, including **amorphagnosia**, impaired recognition of the size and shape of objects; **ahylognosia**, impaired recognition of such object qualities as weight and texture; and **finger agnosia**, impaired recognition of one's own or another person's fingers.

**tactile aid** see TACTILE SENSORY AID.

**tactile amnesia** see ASTEREOGNOSIS.

**tactile circle** an area of the skin where two tactile stimuli presented simultaneously are perceived as one. See also SENSORY CIRCLE.

**tactile communication** the use of touch as a means of communication. In dogs and wolves, the placing of one individual's head and neck on the back of another is a signal of dominance. In many nonhuman primates, ALLOGROOMING is important in maintaining social relationships and may release hormones that help provide physiological calming or a reward effect.

**tactile encoding** see VISUAL ENCODING.

**tactile extinction** see DOUBLE-SIMULTANEOUS TACTILE SENSATION.

**Tactile Finger Recognition** see FINGER LOCALIZATION TEST.

**Tactile Form Perception** a test in which participants use one hand to feel a geometric figure made of sandpaper, which is hidden from view, and then identify it from among a set of 12 drawings. There are 20 geometric figures in total; 10 are presented to one hand and 10 to the other. The test assesses nonverbal tactile information-processing ability and is scored for the number of correct identifications. [developed in 1983 by Arthur L. BENTON and colleagues]

**tactile form recognition** any test of the ability to recognize an object by touch alone. Such tests usually involve blindfolding the participants and asking them to name objects placed in their hands.

**tactile hallucination** a false perception involving the sense of touch. These sensations occur in the absence of any external stimulus and may include itching, feeling electric shocks, and feeling insects biting or crawling under the skin. Also called **haptic hallucination**; **tactual hallucination**.

**tactile illusion** an illusion involving the touch sense. Tactile illusions may occur when patterns are pressed on the skin rather than when patterns are experienced through voluntary movement to gain information about the object or surface. Compare HAPTIC ILLUSION.

**tactile perception** the ability to perceive objects or judge sensations through the sense of touch. The term often refers to judgments of spatial stimulation of the skin, patterns imposed on the skin, or sensory events involving stimulation of the skin (e.g., the thermal properties of a liquid). Some researchers restrict this term to PASSIVE TOUCH. Compare HAPTIC PERCEPTION.

**tactile perceptual disorder** a condition, due to brain damage, that is characterized by difficulty in discriminating sensations that involve touch receptors. Individuals may be unable to determine the shape, size, texture, or other physical aspects of an object merely by touching it.

**tactile receptor** any of the CUTANEOUS RECEPTORS or other receptors involved in the SOMATOSENSES.

**tactile sense** see TOUCH SENSE.

**tactile sensory aid** a device that makes use of touch to help individuals cope with a hearing or visual impairment. An example of a tactile sensory aid is a vibrator that cues a person with hearing loss that the doorbell is ringing. Other aids provide assistance with reading, and a number of electronic travel aids facilitate orientation and mobility for people with visual impairment. Although tactile sensory aids are also called **tactile aids**, the latter term is sometimes used more explicitly to refer only to devices that convert auditory information into patterns of skin stimulation—either vibratory (for a **vibrotactile aid**) or electrical (for an **electrotactile aid**)—for use in communicating with and teaching speech production to people with profound hearing loss. See also TACTUAL DISPLAY.

**tactile stimulation** activation of a sensory receptor by a touch stimulus. Also called **tactual stimulation**.

**tactual display** a device for transmitting information

that is to be read or otherwise processed through the use of touch. Tactual displays may provide BRAILLE output from a computer or information in letter shapes. They may use simple vibrators, raised pins, or electrocutaneous stimulation of the skin. Tactual displays are useful for people with visual impairment, and some are used for assisting people with hearing loss. See also TACTILE SENSORY AID.

**tactual hallucination** see TACTILE HALLUCINATION.

**tactual localization** see POINT LOCALIZATION.

**Tactual Performance Test (TPT)** a subtest of the HALSTEAD-REITAN NEUROPSYCHOLOGICAL BATTERY that requires a blindfolded individual to place wooden shapes (e.g., stars) into a formboard placed at a 45° angle to the vertical. Performances for the dominant, nondominant, and both hands simultaneously are obtained, and then the blindfold is removed and the individual is asked to draw the shapes and their relative positions on the formboard. The test measures motor skills, tactile perception, nonverbal memory, and other cognitive functions.

**tactual shape discrimination** the ability to determine the shapes of objects by touch alone, as in the case of a person differentiating between a cylinder and another object when unable to see either one of them.

**tactual size discrimination** the ability to judge the comparative size of two invisible objects through the sense of touch. It is used as a test for the possible presence of a cortical lesion that would interfere with this ability.

**tactual stimulation** see TACTILE STIMULATION.

**Tadoma method** a technique of communicating with people having both hearing and visual impairment. People with these disabilities learn to place their fingers on the cheek and neck and their thumb on the mouth of the person speaking and translate the vibrations and muscle movements into words. [originated in the 1930s by U.S. teacher Sophia Alcorn (1883–1967); the name is derived from Tad and Oma, two of her students]

**TAE** abbreviation for tilt AFTEREFFECT.

**TAF** abbreviation for THOUGHT–ACTION FUSION.

**Taft–Hartley Act** see LABOR MANAGEMENT RELATIONS ACT.

**TAG** acronym for TALENTED AND GIFTED.

**tagging** *n.* the process of attaching a RADIOACTIVE ISOTOPE to a molecule to label it and create a RADIOACTIVE TRACER. The tagging enables observation of the route and distribution of a substance through the body and also its measurement.

**tag question** in linguistics, a short INTERROGATIVE clause attached to the end of a statement to invite the agreement of a listener, as in *The bird flew away, didn't it?* or *We've not been here before, have we?* In English, the form of the tag question is determined by the structure of the main statement and a combination of linguistic rules involving pronominalization, negation, interrogation, and truncation, as seen in the examples given above. The ability of young children to form appropriate tag questions is considered a prime illustration of their early mastery of linguistic rules.

**taijin kyofusho** a phobia, similar to SOCIAL PHOBIA and unique to Japan, that is characterized by an intense fear that one's body parts, bodily functions, or facial expres-

sions are embarrassing or offensive to others (e.g., in appearance, odor, or movement).

**tail flick test** a procedure used to measure pain sensitivity in nonhuman animals (usually rodents). An intense beam of light is focused on a specific spot on the animal's tail. After a period, the animal abruptly moves its tail to avoid the beam of light. The time that elapses before this tail flick is used as an index of pain sensitivity; analgesic drugs (e.g., morphine) increase the REACTION TIME.

**TAIS** abbreviation for TEST OF ATTENTIONAL AND INTERPERSONAL STYLE.

**Takayasu's disease** a circulatory disorder involving arteries that carry blood from the aortic arch above the heart toward the brain. Occlusion of the innominate, left subclavian, and left carotid arteries results in loss of a pulse in the arms and neck, cramplike pain in the arms, and fainting spells due to CEREBRAL ISCHEMIA. The disease seems to affect mainly young females. [Michishige **Takayasu** (1872–1938), Japanese physician]

**talbot** *n.* a unit of light energy equal to one LUMEN second—that is, the energy carried by one lumen in one second.

**Talbot–Plateau law** the principle that if a light flickers so rapidly that it is perceived as continuous, its brightness will be determined by the ratio of the duration of the on period to the off period. Thus, the perceived brightness of the stimulus that appears continuous is actually an average of the brightness of the on and off periods. [William Henry Fox **Talbot** (1800–1877), British physicist; Joseph Antoine Ferdinand **Plateau** (1801–1883), Belgian physicist]

**talent** *n.* an innate skill or ability, or an aptitude to excel in one or more specific activities or subject areas. Talent cannot be accounted for by normal development patterns and is often not maximized, as its nurturance requires time, energy, sacrifice, dedication, and resources from parents, mentors, and the talented person. Ideal circumstances for the development of a talent include enjoyment of the talent for its own sake and a clear perception of how it can be exploited to fulfill the individual's long-term aspirations. —**talented** *adj.*

**talented and gifted (TAG)** describing children who display a level of intelligence significantly above average, special abilities, or both, as measured by appropriate standard assessment procedures. **Talented and Gifted Education** refers to any program that promotes education advocacy, research, and the sharing of ideas between educators and parents of such children.

**talion** *n.* retaliation, especially retaliation in kind, as in the biblical injunction “an eye for an eye, a tooth for a tooth.” The **talion principle** or **law** plays an important part in psychoanalytic theory, because it includes the general idea of retribution for defying the SUPEREGO and the specific fear (**talion dread**) that all transgressions, accidental or intentional, will be punished in kind. For example, a person wishing consciously or unconsciously for the death of another person might suffer extreme anxiety caused by the fear that he himself or she herself is dying.

**talipes** *n.* see CLUBFOOT.

**talking book** a recorded book distributed in a variety of formats (e.g., CD/DVD, memory card, Internet download) for use by individuals with visual impairment or certain learning disabilities (e.g., dyslexia). Requiring the use of

specially designed playback equipment, talking books differ from commercial audiobooks in their use of the **Digital Accessible Information System (DAISY)**, a technical standard with advanced navigation that allows listeners line-by-line access to complex material, such as a textbook, encyclopedia, or periodical. Talking books provide synchronized multimedia files that include audio and text, and they also support braille output.

**talking cure** a synonym for insight-oriented psychotherapy, sometimes used dismissively. The term is apt in that the essence of certain psychotherapeutic approaches is for the client to “talk out” his or her problems with the therapist. First used in the context of psychoanalysis, the term was coined by the landmark patient ANNA O.

**talk therapy** see PSYCHOTHERAPY.

**taming of the instinct** see NEUTRALIZATION.

**tamoxifen** *n.* see ANTIESTROGEN.

**tandem reinforcement** a SCHEDULE OF REINFORCEMENT for a single response in which two or more schedule requirements must be completed in sequence before reinforcement occurs and no stimulus change accompanies completion of each requirement. For example, in a tandem, fixed-interval 1-minute, fixed-ratio 10 schedule, the first response after 1 minute would initiate the FIXED-RATIO SCHEDULE, and the 10th response would result in reinforcement. Also called **tandem schedule of reinforcement**. Compare CHAINED SCHEDULE.

**tandem therapy** in marriage therapy, a practice in which the therapist meets individually with each partner.

**tangentiality** *n.* a thought disturbance that is marked by oblique speech in which the person constantly digresses to irrelevant topics and fails to arrive at the main point. In extreme form, it is a manifestation of LOOSENING OF ASSOCIATIONS, a symptom frequently seen in schizophrenia or delirium. Compare CIRCUMSTANTIALITY.

**tangential speech** verbal communication that repeatedly diverges from the original subject. Resulting from disorganized thought processes or a diminished ability to focus attention, these digressions may continue until the original subject is no longer the focus of the conversation.

**tangent screen** a vertical screen for plotting the location of a VISUAL RECEPTIVE FIELD for a neuron by moving a spot or bar of light across the screen and noting the regions of maximum response.

**tangible support** see SOCIAL SUPPORT.

**tangible user interface (TUI)** in computing, several experimental types of user interface that enable on-screen data to be manipulated by direct physical means. Rather than appearing in graphical form, devices such as windows, icons, and handles are embodied as graspable, physical objects that can be used to access and manipulate data. The general goal of TUI development is to find solutions that bridge the gap between the digital world and the physical environment. Areas currently under investigation include (a) the transformation of architectural surfaces such as walls, doors, and tables into active interfaces with the digital world; (b) the creation of direct links between tangible objects, such as books, pictures, or models, and related digital information; and (c) the use of ambient media, such as light and sound, to convey background information to an operator. Compare GRAPHICAL USER INTERFACE; PERCEPTUAL USER INTERFACE.

**tantric sex** an approach to sex based on the Chinese philosophical and religious system of TAOISM. The approach highly values sex, with the belief that long life and even immortality can be obtained through sexual activity. Sexual techniques are aimed at mutual and equal sexual pleasure for each partner. Prolonged love-making sessions, with much general body stroking, and techniques to prolong intercourse are stressed in the tantric approach.

**tantrum** *n.* see TEMPER TANTRUM.

**Taoism (Daoism)** *n.* a classical Chinese philosophy formulated by Laozi (Lao Tzu) in the 5th century BCE. The *Tao*, meaning “way” or “path,” is seen as the origin of all creation, unknowable in its essence but observable in its manifestations, and as the basis of a spiritual approach to living. —**Taoist** *adj.*, *n.*

**tapering** *n.* in pharmacology, a gradual reduction in the dose of a drug in order to avoid undesirable effects that may occur with rapid cessation. Such effects may be extreme (e.g., convulsions) or relatively mild (e.g., head pain, gastrointestinal discomfort). Drugs that produce physiological dependence (e.g., opiates, benzodiazepines) must be tapered to prevent a withdrawal syndrome and possible seizures (see SEDATIVE, HYPNOTIC, OR ANXIOLYTIC WITHDRAWAL). Also called **gradual withdrawal**.

**tapetum** *n.* a light-reflecting layer behind the retina of some animals, such as the domestic cat. The tapetum enhances visual sensitivity in nocturnal animals by reflecting back any photons that have passed through the retina, so that these have a second chance to interact with the photopigments in the photoreceptors.

**taphophilia** *n.* a morbid attraction to cemeteries.

**tapping test** see DOTTING TEST; FINGER TAPPING TEST.

**Taractan** *n.* a trade name for CHLORPROTHIXENE.

**Tarasoff decision** the 1976 California Supreme Court decision in *Tarasoff v. Regents of the University of California*, which placed limits on a client's right to confidentiality by ruling that mental health practitioners who know or reasonably believe that a client poses a threat to another person are obligated to protect the potential victim from danger. Depending on the circumstances, that protection may involve such actions as warning the potential victim, notifying the police of the potential threat posed by the client, or both. The decision was based on a case in which an individual confided to his therapist that he intended to kill a friend and later did so. See also DUTY TO PROTECT; DUTY TO WARN.

**tardive** *adj.* denoting delayed or late-arriving symptoms or disease characteristics, as in TARDIVE DYSKINESIA.

**tardive dyskinesia** a movement disorder associated with the use of ANTIPSYCHOTICS, particularly conventional antipsychotics that act primarily as DOPAMINE-RECEPTOR ANTAGONISTS. It is more common with prolonged use (months or years), and older patients, females, and patients with mood disorders are thought to be more susceptible. Symptoms include tremor, so-called choreoathetoid movements (see CHOREOATHETOSIS), and spasticity of muscle groups, particularly orofacial muscles and muscles in the extremities. Onset is insidious and may be masked by continued use of the antipsychotic, only appearing when the drug is discontinued or the dose lowered. Its incidence is estimated at up to 40% of long-term users of conventional

antipsychotics; the incidence is lower with atypical antipsychotics. No effective treatment is known.

**tardive dysmentia** a behavioral disorder associated with long-term use of antipsychotic drugs and characterized by changes in affect, social behavior, and level of activity. Symptoms may include an inappropriately loud voice and loquaciousness, euphoria, intrusive behavior (including invasion of others' privacy), and thought disorder. In addition, the individual may exhibit episodes of social withdrawal interspersed with episodes of hyperactivity, as well as excessive emotional reactivity and explosive hostility. The condition is considered the behavioral equivalent of TARDIVE DYSKINESIA. Also called **iatrogenic schizophrenia**; **tardive psychosis**.

**target** *n.* **1.** an area or object that is the focus of a process, inquiry, or activity. **2.** the goal object in a task. For example, the target in a VISUAL SEARCH might be to find a letter S in a randomly arranged array of letters. In some CONCEPT-DISCOVERY TASKS, the target is the rule that classifies objects as belonging or not belonging to a category. When a search has more than one item as its goal, these are known as the **target set**. **3.** a tissue, organ, or type of cell that is selectively affected by a particular hormone, neurochemical, drug, or microorganism. **4.** a neuron that attracts the growth of the DENDRITES or AXONS of other neurons toward it. **5.** in parapsychology experiments, the object or event that the participant attempts to identify in tests of CLAIRVOYANCE, the message that he or she attempts to receive or respond to in tests of TELEPATHY, or the object that he or she attempts to influence in tests of PSYCHOKINESIS.

**target behavior** the specific behavior or behavioral pattern selected for modification in BEHAVIOR THERAPY.

**target device** the appliance, furnishing, or equipment that responds to commands from a CONTROL DEVICE. See also ENVIRONMENTAL CONTROL DEVICE; FEEDBACK DEVICE; SWITCH DEVICE.

**target language** **1.** the second or additional language that a nonnative speaker is attempting to use or learn. See also INTERLANGUAGE. **2.** the language into which a translation has been or is being made. Compare SOURCE LANGUAGE.

**target patient** in STRUCTURED INTERACTIONAL GROUP PSYCHOTHERAPY, the group member who becomes the focus of attention and discussion.

**target population** the population that a study is intended to research and to which generalizations from samples are to be made. Also called **reference population**.

**target response** the response (or response class) chosen to be studied or for which consequences are to be arranged.

**target stimulus** a specific stimulus to which participants in a test or experimental procedure must attend or respond. For example, in tests of hearing, the target stimulus may be a specific tone that must be identified; in studies of MASKING, it is the stimulus obscured or altered by the masker.

**Tartini's tone** a COMBINATION TONE; more specifically, a difference tone. [first noted by Giuseppe Tartini (1692–1770), Italian Baroque composer]

**TAS** abbreviation for TELLEGEN ABSORPTION SCALE.

**task** *n.* any goal-oriented activity undertaken by an individual or a group. When such an activity is the subject of observation in an experimental setting (e.g., in problem-solving and decision-making studies), the researcher may

set particular objectives and control and manipulate those objectives, stimuli, or possible responses, thus changing task parameters to observe behavioral adjustments. See also SEARCH.

**task analysis 1.** the breakdown of a complex task into component tasks to identify the different skills needed to correctly complete the task. In education, for example, it entails the breakdown of a subject or field of study to identify the specific skills the student must possess in order to master it; in industrial and organizational settings, a job is broken down into the skills, knowledge, and specific operations required. See also JOB ANALYSIS. **2.** in ergonomics, a method of evaluating a product or system in which researchers interview actual or target users in order to find out (a) what tasks are performed; (b) which of these are most frequently performed and which are most important; (c) how and in what sequence the tasks are performed; (d) what standards of performance apply; and (e) how different categories of user vary in their answers to the above. Although some scripted questions are asked, the interviews are otherwise unstructured, the better to reflect users' actual experience. Compare COGNITIVE WALK-THROUGH METHOD; CONVERSATION ANALYSIS; HEURISTIC.

**task cohesion** the degree to which members of a team or group are attracted to a task and work together through the integration of their skills to complete the task successfully.

**task complexity** the degree to which there is a need to integrate complicated interactions among different mental and physical aspects of a task.

**task conflict** see INTRAGROUP CONFLICT.

**task demands** the effect of a task's characteristics, including its divisibility and difficulty, on the procedures that an individual or group can use to complete the task.

**task identity** a motivating characteristic of tasks specified in the JOB-CHARACTERISTICS MODEL of J. Richard HACKMAN and U.S. organizational behaviorist Greg R. Oldham (1947– ). A job is high in task identity if it entails responsibility for a complete and identifiable piece of work (see NATURAL WORK MODULE), as in writing a proposal or planning and developing a new software program from start to finish. Compare TASK SIGNIFICANCE.

**task-motivated** *adj.* denoting a LEADERSHIP STYLE in which the leader concentrates on structuring the tasks the group must complete, providing task-related feedback, and setting goals. It is assessed using the LEAST PREFERRED CO-WORKER SCALE. Also called **task-oriented**. Compare RELATIONSHIP-MOTIVATED.

**task orientation** a motivational focus on mastering a task. Task orientation is a component of the ACHIEVEMENT GOAL THEORY.

**task-oriented group** a group primarily devoted to solving a problem, providing a service, creating a product, or engaging in other goal-directed behavior. See ACTION GROUP; WORK GROUP. See also INSTRUMENTAL ORIENTATION.

**task role** a set of functional GROUP ROLES, either allocated by the leader or adopted by members through self-organization, whose performance promotes the completion of tasks and the achievement of the group's goals. Compare RELATIONSHIP ROLE.

**task significance** a motivating characteristic of tasks specified in the JOB-CHARACTERISTICS MODEL developed by

J. Richard HACKMAN and U.S. organizational behaviorist Greg R. Oldham (1947– ). Jobs high in task significance are those that are perceived to be important to the organization or to have great influence on the lives of others. Compare TASK IDENTITY.

**task specificity of language** the theory, mainly associated with Noam CHOMSKY, that language use differs from other cognitive tasks in qualitative ways and makes use of components that are specific to this purpose. The theory accords with Chomsky's ideas of AUTONOMOUS SYNTAX and intuited GRAMMATICALITY but is incompatible with the approaches taken in FUNCTIONAL GRAMMAR, COGNITIVE GRAMMAR, or behaviorist accounts of language (see VERBAL BEHAVIOR). See also MODULARITY; SPECIES SPECIFICITY OF LANGUAGE.

**task-specific tremor** see ACTION TREMOR.

**task structure** the extent to which there is a clear relationship of means to ends in the performance of a task. In a highly structured task, the procedures required to perform the task successfully are known, whereas in an unstructured task, there is uncertainty about how to proceed.

**task switching** a procedure in which the participant switches between two or more tasks, typically according to a regular schedule in experimental situations. The usual finding is that responses are slower when the task switches than when the same task is merely repeated.

**task-unrelated images and thoughts (TUITs)** see MIND WANDERING.

**task-unrelated thoughts (TUTs)** see MIND WANDERING.

**tantant** *n.* a substance that stimulates the sense of taste, such as a calorie-free sweetener.

**taste** *n.* the sense devoted to the detection of molecules dissolved in liquids (also called **gustation**), or the sensory experience resulting from perception of GUSTATORY QUALITIES. Dissolved molecules are delivered to the taste receptors—TASTE CELLS—on the tongue, soft palate, larynx, and pharynx. Of the proposed five PRIMARY TASTES, three are dedicated to detecting nutrients: SWEET (sugars), SALTY (sodium), and UMAMI (proteins); and two are for protection: SOUR (from unripe or spoiled foods) and BITTER (from toxins). Taste combines with smell, texture, and appearance to generate a sense of flavor.

**taste adaptation** a decrease in sensitivity to a stimulus that has been presented continuously to the GUSTATORY SYSTEM. The phenomenon can be complete, and the perception lost, after minutes of stimulation. Adaptation is used to determine whether two stimuli share the same receptor population by inducing adaptation to the first stimulus and then evaluating the degree to which the perception of the second stimulus is diminished.

**taste aversion** avoidance of a particular taste. See CONDITIONED TASTE AVERSION.

**taste-aversion learning** see CONDITIONED TASTE AVERSION.

**taste blindness** reduced sensitivity to the bitter taste of phenylthiocarbamide (PTC) or propylthiouracil (PROP). Originally thought to be a simple Mendelian recessive trait, taste blindness is now known to extend to other bitter tastes, as well as to salty and sweet tastes, and is associated with having fewer TASTE BUDS.



**taste bud** a goblet-shaped structure,  $30 \times 50 \mu\text{m}$ , about 6,000 of which occur in the human mouth. Each bud is a collection of about 50 TASTE CELLS arranged like sections of an orange. At its apex is a TASTE PORE through which each taste cell sends a MICROVILLUS studded with receptor proteins to sample the environment.

**taste cell** a receptor cell for GUSTATORY STIMULI. Each has a hairlike extension (see MICROVILLUS) that protrudes from the opening in the TASTE BUD. Humans have about 300,000 taste cells, though the number can vary across individuals, and there are about 50 cells per taste bud. Taste cells can be divided into four anatomical types: TYPE I CELLS comprise 60% of the total, TYPE II CELLS 20%, TYPE III CELLS 15%, and TYPE IV CELLS 5%. All but Type IV cells may be involved in TASTE TRANSDUCTION. See also GUSTATORY NEURON TYPES.

**taste cortex** the area of the cerebral cortex responsible for the perception of taste. The **primary taste cortex** (or **primary gustatory cortex**) is the first cortical relay for taste. Located along the sharp bend that includes the frontal operculum laterally and the anterior INSULA medially, it receives taste, touch, visceral, and other sensory inputs from the thalamus and permits an integrated evaluation of a chemical. Its output goes to regions that control oral and visceral reflexes in response to foods. The **secondary taste cortex** (or **secondary gustatory cortex**) is the area of cerebral cortex, located in the ORBITOFRONTAL CORTEX, that is the second cortical relay for taste. It identifies GUSTATORY STIMULI as either pleasant and rewarding or unpleasant and undesirable. This information from the secondary taste cortex interacts with analyses from visual, touch, and olfactory cells to permit an integrated appreciation of flavor.

**taste pore** a  $6 \mu\text{m}$  opening at the top of each taste bud through which the MICROVILLI of its 50 taste cells project to sample the chemical environment.

**taste stimulus** see GUSTATORY STIMULUS.

**taste system** see GUSTATORY SYSTEM.

**taste transduction** the sequence of events involved in converting the detection of chemical molecules into taste signals. GUSTATORY STIMULI interact with the MICROVILLUS of a taste cell, which results in changes in activity in the ion channels within taste receptors. The subsequent DEPOLARIZATION within these receptors triggers the release of neurotransmitters that stimulate sensory neurons in the peripheral nervous system (see GREATER SUPERFICIAL PETROSAL NERVE). The mechanisms of transduction vary with the type of gustatory stimulus, although each taste cell is capable of transducing different stimuli. Also called **gustatory transduction**.

**TAT** abbreviation for THEMATIC APPERCEPTION TEST.

**tau effect** **1.** the effect of the timing of stimuli on their perceived spatial location. For example, if three equidistant lights are flashed in succession, but the time interval between the first two is shorter than that between the second and third, then the first two lights are perceived to be closer together than the second and third. **2.** the invariant that the time to contact between an object and an observer moving at a constant speed toward each other is inversely proportional to the rate of expansion of the observer's retinal image of the object, regardless of the size of the object or the speed at which it travels. Research suggests that the tau effect is used in a variety of situations involving the control of movements, for example, by a ballplayer when

preparing to catch a ball and by a diving gull in retracting its wings before hitting the surface of the water to catch a fish.

**taurine** *n.* a sulphur-containing amino acid, found in the tissue of many animals, that plays a role in numerous biological processes such as bile-salt formation, OSMOREGULATION, and fat digestion and that may act as a neuromodulator of neurotransmitters such as GLYCINE, GAMMA-AMINOBUTYRIC ACID (GABA), ACETYLCHOLINE, and GLUTAMATE. Although taurine can be endogenously synthesized in the body (in the pancreas), it must also be obtained from diet (e.g., through foods in which it occurs naturally, such as meat, fish, and eggs). Its deficiency has been associated with various conditions ranging from cardiovascular disease and hypertension to epilepsy, depression, and anxiety. Research into the potential benefits or adverse effects of taurine as a dietary supplement for the treatment of these and other conditions is ongoing but inconclusive.

**tau test** see KENDALL'S TAU.

**tautology** *n.* **1.** in logic, a statement that is always and necessarily true by virtue of the meaning of its component terms and that therefore has no propositional content, as *Either he is alive or he is not alive*. See also CIRCULAR REASONING. **2.** in general use, needless repetition of an idea in a different word, phrase, or sentence, as in *necessary essential* or *individual person*. —**tautological** *adj.*

**Tavistock Clinic** a major British provider of clinical mental health services, set up in Tavistock Square, London, in 1919. It became a part of the National Health Service in 1947, when the separate **Tavistock Institute of Human Relations** was founded to relate the psychological and social sciences to the needs of society. In 1994, the Tavistock Clinic and the PORTMAN CLINIC became a trust of the National Health Service and its leading organization for providing postgraduate training in mental health.

**taxis** *n.* (*pl.* **taxes**) active movement of motile organisms in response to a stimulus. Taxis can be a negative response, marked by movement away from the stimulus, or positive, in which case the organism moves toward the stimulus. Taxis differs from TROPISM, which refers to a simple orientation to or from a natural force (e.g., light or gravity) without changing place, as in plants. Kinds of taxes include PHOTOTAXIS, in which movement is toward or away from a light source; GEOTAXIS, marked by a movement toward the earth; and **chemotaxis**, in which the movement is in response to chemicals in the environment. **Tropotaxis** indicates a direct path toward a source, such as a food smell; **klinotaxis** is a movement interrupted by pauses to evaluate the sources of stimuli. Also called **taxic behavior**. Compare KINESIS. —**taxic** or **tactic** *adj.*

**taxonomic assumption** in language development, the tendency of children to suppose that a novel word that refers to one thing also refers to similar things (rather than thematically related things). For example, a child will infer that if the word *dog* refers to a collie it can also refer to a poodle, but not to a thematically related thing, such as a dog bone. Compare MUTUAL EXCLUSIVITY ASSUMPTION; WHOLE OBJECT ASSUMPTION.

**taxonomic classification** see CONCEPTUAL CLASSIFICATION.

**taxonomy** *n.* the science of classification (e.g., BIOLOGICAL TAXONOMY) or any scheme of classification itself. —**taxonomic** *adj.* —**taxonomist** *n.*

**taxonomy of educational objectives** see BLOOM'S TAXONOMY.

**Taylorism** *n.* see SCIENTIFIC MANAGEMENT.

**Taylor Manifest Anxiety Scale** a 65-item self-report scale, derived from the MINNESOTA MULTIPHASIC PERSONALITY INVENTORY, that was first developed in 1951 and modified and shortened to 50 items in 1953. The scale, consisting of statements (e.g., "I cannot keep my mind on one thing") to which participants respond *true* or *false*, formerly had frequent use in research as a general measure of anxiety symptoms. It correlates with other anxiety measures and with physiological indicators of anxiety. Also called **Manifest Anxiety Scale**. See CHILDREN'S MANIFEST ANXIETY SCALE. [devised by U.S. psychologist Janet **Taylor** Spence (1923– )]

**Tay-Sachs disease (TSD)** an autosomal recessive disorder primarily affecting Ashkenazi Jews of central and eastern European origin. The disease is due to a deficiency of the enzyme hexosaminidase A, resulting in the accumulation of G<sub>M2</sub> gangliosides in all tissues (see GANGLIOSIDOSIS). This process gradually destroys the brain and nerve cells by altering the shape of neurons. Development is normal until the 6th month of infancy, after which there is a deterioration of motor, visual, and cognitive abilities. Death usually occurs between 3 and 5 years of age. Also called **G<sub>M2</sub> gangliosidosis**. [Warren **Tay** (1843–1927), British physician; Bernard **Sachs** (1858–1944), U.S. neurologist]

**TBI** abbreviation for TRAUMATIC BRAIN INJURY.

**TBR items** abbreviation for TO-BE-REMEMBERED ITEMS.

**TCA** abbreviation for TRICYCLIC ANTIDEPRESSANT.

**TCD** abbreviation for TRANSCRANIAL DOPPLER ULTRASONOGRAPHY.

**T cell** see LYMPHOCYTE.

**TCI** abbreviation for TEMPERAMENT AND CHARACTER INVENTORY.

**T data** test data: information about an individual gathered from formal scientific measurement and objective testing. See also L DATA; O DATA; Q DATA.

**TDD** abbreviation for TELECOMMUNICATION DEVICE.

**t distribution** a theoretical PROBABILITY DISTRIBUTION that plays a central role in testing hypotheses about population means, among other parameters. It is the sampling distribution of the statistic  $(M - \mu_0)/s$ , where  $\mu_0$  is the mean of the population from which the sample is drawn,  $M$  is the estimate of the mean of the population as obtained from sample data, and  $s$  is the standard deviation of the data set. Also called **Student's t distribution**.

**teacher-effectiveness evaluation** an assessment of specific criteria for instructors, including classroom management, curriculum, parental communication, and the effectiveness of the instructor as shown by student progress. See also STUDENTS' EVALUATION OF TEACHING.

**teaching games** classroom instruction in the form of games designed to engage students' active interest as they work on specific skills (e.g., vocabulary, mathematics). Teaching games can provide a unique opportunity to give students incentives, such as specific rewards or the pleasure of winning.

**teaching machine** an instrument that (a) automatically presents programmed material to the learner, (b) pro-

vides an opportunity to check understanding at each step through problems or questions, and (c) provides feedback as to whether the response is right or wrong. One equivalent of the teaching machine is PROGRAMMED INSTRUCTION, which B. F. SKINNER advocated. The modern-day equivalent of teaching machines is the personal computer, which is widely accepted as a supplement for teaching complex tasks, concepts, or skills, in addition to specific content areas. See BRANCHING.

**teaching model** see DEVELOPMENTAL TEACHING MODEL.

**teaching style** the personal attributes that define a teacher's classroom methods and behavior. Qualities associated with teacher effectiveness include mastery of subject matter, pedagogical thinking, organizational ability, enthusiasm, warmth, calmness, and rapport with students.

**team** *n.* an organized task-focused group. Members of such groups combine their individual inputs in a deliberate way in the pursuit of a common goal and are typically cohesive and united.

**team building** a structured intervention designed to increase the extent to which a group functions as an organized, coherent whole. Such interventions often involve assessing the current level of GROUP DEVELOPMENT, clarifying and prioritizing goals, and increasing group cohesiveness.

**team mental model** see SHARED MENTAL MODEL.

**technical** *adj.* 1. relating to specialized skills, abilities, or techniques. 2. relating to skills or abilities that are mechanical, industrial, or technological. 3. denoting scientific specialization or character.

**technical eclecticism** in INTEGRATIVE PSYCHOTHERAPY, the use of techniques from various theoretical frameworks to deal with the complex issues of a client. Technical eclecticism uses a systematic and carefully thought out approach that balances theoretical perspectives and treatment processes. [developed by South African-born U.S. psychologist Arnold Allan Lazarus (1932–2013)]

**technical term** a word or phrase used in a specialized field to refer to objects or concepts that are particular to that field and for which there are no adequate terms in ordinary language. See also JARGON.

**technical gatekeeper** an organizational or GROUP ROLE that involves channeling information about technological innovations into the organization from the outside. People occupying this role communicate with professionals inside and outside the organization, serving as the conduit for acquiring, translating, and disseminating new technical information.

**technostress** *n.* a form of OCCUPATIONAL STRESS that is associated with information and communication technologies such as the Internet, mobile devices, and social media. Technostress is seen in many organizations at all levels, with affected employees becoming anxious or overwhelmed by working in computer-mediated environments in which there is a constant flow of new information. This relatively new phenomenon has significant detrimental effects on individuals' health, productivity, and work satisfaction and has been proposed as an important predictor of overall job strain. Academic literature, the popular press, and anecdotal evidence suggest that technostress is directly related to ROLE AMBIGUITY, ROLE CONFLICT, supervisor lack of support, and work overload, whereas age and SELF-EFFICACY appear to play more indirect, buffering roles.

**tectal nucleus** any of certain nuclei located in the SUPERIOR COLLICULUS and INFERIOR COLLICULUS in the dorsal part of the midbrain. They perform relay functions for the visual and auditory systems and integrate reflex functions. Some neurons in these nuclei are bimodal, responding to both visual and auditory stimuli.

**tectorial membrane** part of the ORGAN OF CORTI in the cochlea. It consists of a semigelatinous membrane in which the stereocilia of the outer HAIR CELLS are embedded.

**tectospinal tract** a tract of nerve fibers that starts at the SUPERIOR COLLICULUS, crosses the midline at the midbrain, and descends through the midbrain, pons, and medulla oblongata to terminate in the cervical (neck) region of the spinal cord. It functions in turning the head in response to visual, auditory, and somatosensory stimuli. See also VENTROMEDIAL PATHWAY.

**tectum** *n.* (*pl.* **tecta**) the roof of the MIDBRAIN, dorsal to the CEREBRAL AQUEDUCT. The tectum contains the SUPERIOR COLLICULI, which act as relay and reflex centers for the visual system, and the INFERIOR COLLICULI, which are sensory centers for the auditory system. —**tectal** *adj.*

**teenage pregnancy** see ADOLESCENT PREGNANCY.

**teeth grinding** see BRUXISM.

**teething** *n.* the process in which the teeth erupt through the gums, typically occurring between 4 and 9 months of age. During this process, the infant may exhibit several accompanying symptoms, such as an increase in irritability, sleep disturbance, temporary rejection of bottle or breastfeeding, gum inflammation, and excessive drooling.

**tegmentum** *n.* (*pl.* **tegmenta**) the central core of the MIDBRAIN and PONS. It contains sensory and motor tracts passing through the midbrain and also several nuclei, including the OCULOMOTOR NUCLEUS, RED NUCLEUS, and SUBTHALAMIC NUCLEUS. —**tegmental** *adj.*

**Tegretol** *n.* a trade name for CARBAMAZEPINE.

**tele-** (**tel-**) *combining form* **1.** distant or over a distance (e.g., TELEPATHY). **2.** television or telephone (e.g., TELECONFERENCING).

**telecommunication device (TDD)** a device used by individuals with hearing loss or speech impairments to communicate via telephone lines. It typically consists of a keyboard, a letter display, and a cradle for the telephone receiver and may also include a printer. An individual types a message and sends it, and another individual with a telecommunication device receives the message, views it on the display, and then types and sends a response. Also called **text telephone (TTY)**.

**telecommuting** *n.* working from home using a computer, telephone, or other technology to communicate with people at the central workplace or at other locations. It is the most common alternative work schedule used in public organizations, often offered as a means to recruit and retain employees, boost productivity, and trim facility costs. Also called **teleworking**. —**telecommute** *vb.* —**telecommuter** *n.*

**teleconferencing** *n.* the use of telecommunications links (e.g., video systems or webcams) to enable real-time group meetings of individuals who are physically distant from one another. Also called **video conferencing**. —**teleconference** *n., vb.*

**telegnosis** *n.* in parapsychology, alleged knowledge of distant events without direct communication, as by CLAIRVOYANCE or TELEPATHY. See EXTRASENSORY PERCEPTION.

**telegraphic speech** **1.** condensed or abbreviated speech in which only the most central words, carrying the highest level of information, are spoken. Nouns and verbs are typically featured, whereas adjectives, adverbs, articles, and connective parts of speech are omitted. **2.** the speech of children roughly between the ages of 18 and 30 months. This is usually in the form of two-word expressions up to the age of about 24 months (see TWO-WORD STAGE) and thereafter is characterized by short but multiword expressions (e.g., *dog eat bone*). Also called **telegraphic stage**.

**telehealth** *n.* the use of telecommunications and information technology to provide access to health assessment, diagnosis, intervention, and information across a distance, rather than face to face. Also called **telemedicine**.

**telekinesis** *n.* a form of PSYCHOKINESIS in which solid matter is purportedly moved or manipulated solely by the power of the mind.

**telemedicine** *n.* see TELEHEALTH.

**telemetry** *n.* the process of measuring and transmitting quantitative information to a remote location, where it can be recorded and interpreted. For example, a small radio transmitter may be implanted inside a nonhuman animal to measure general activity level as well as a variety of physiological variables, including body temperature, heart rate, and blood pressure. The transmitter sends signals to a receiver located outside the animal. —**telemetric** *adj.*

**telencephalon** *n.* see CEREBRUM.

**teleologic regression** see PROGRESSIVE TELEOLOGIC REGRESSION.

**teleology** *n.* **1.** the position that certain phenomena are best understood and explained in terms of their purposes rather than their causes. In psychology, its proponents hold that mental processes are purposive, that is, directed toward a goal. The view that behavior is to be explained in terms of ends and purposes is frequently contrasted with explanations in terms of causes, such as INSTINCTS and CONDITIONED RESPONSES. See also HORMIC PSYCHOLOGY; PURPOSIVE PSYCHOLOGY. **2.** the concept that the universe or human history or both have purpose and direction and are moving toward a particular goal. This position is usually, but not exclusively, a religious one. —**teleologic** or **teleological** *adj.*

**teleonomy** *n.* **1.** the property of being goal-directed in terms of structures, functions, and behaviors, which is a fundamental characteristic of living organisms. **2.** the apparently directional or “purposeful” character of evolutionary adaptation. The term is used in this context in order to avoid the metaphysical implications of TELEOLOGY. **3.** the scientific study of living organisms in terms of evolutionary adaptation. —**teleonomic** *adj.*

**teleoperator** *n.* a remote-controlled device or system that augments the operator's physical capabilities while remaining immediately responsive to his or her control (unlike fully automated robotics). Some teleoperators are designed to imitate the body movements of the operator. Teleoperators are used in space, underwater, on high buildings or other inaccessible structures, and in dangerous tasks, such as landmine clearance.

**teleopsia** *n.* a VISUAL ILLUSION in which an object appears to be more distant than it is in reality. In some cases, this is caused by lesions in the parietal temporal area of the brain. See also METAMORPHOPSIA.

**telepathic dream** a dream in which one appears to gain insight or information about a person or event despite not having access to the relevant information in waking life. [described by Sigmund FREUD]

**telepathy** *n.* the alleged direct communication of information from one mind to another, in the absence of any known means of transmission. It is a form of EXTRASENSORY PERCEPTION. See also MIND READING; THOUGHT TRANSFERENCE. —**telepath** *n.* —**telepathic** *adj.*

**telephone counseling** **1.** a method of treating and managing the problems of clients by telephone. The skills for telephone counseling include (a) careful selection of problems that lend themselves to the medium, (b) ACTIVE LISTENING for cues to issues and ramifications of the problems, (c) good verbal skills that guide the client appropriately, and (d) the ability to respond quickly to avoid gaps and awkward silences. **2.** free HOTLINE telephone services that provide listening and referral services rather than formal counseling. Hotline volunteers are trained to provide emotional support in serious situations, especially those involving suicidal callers, but not to give formal advice. See also DISTANCE THERAPY.

**telephone scatologia** a PARAPHILIA in which an individual obtains sexual pleasure by making obscene telephone calls. See SCATOPHILIA.

**telephone theory** see FREQUENCY THEORY.

**teleplasm** *n.* see ECTOPLASM. —**teleplasmic** *adj.*

**telepresence** *n.* the sense of being at a remote site when provided with sensory information (e.g., sights, sounds, textures) from that distant place using modern communications technology. See also REMOTE PERCEPTION.

**telepsychotherapy** *n.* see DISTANCE THERAPY.

**telergy** *n.* in parapsychology, the alleged ability of a SENSITIVE to confer paranormal abilities to or influence another person's thoughts via TELEPATHY.

**telesis** *n.* purposeful, planned efforts directed toward achieving a particular goal.

**telesthesia** (**telaesthesia**) *n.* see CRYPTESTHESIA. —**tel-esthetic** *adj.*

**telesupervision** *n.* see SUPERVISION.

**Telfaire instructions** cautionary instructions read to juries in cases in which eyewitness identification may be the most critical evidence against the defendant. The instructions address issues that are suspected to lead to eyewitness misidentification and were originally proposed by the judge hearing the appeal in the case *United States v. Telfaire* (1972), in which the defendant had been convicted solely on the evidence of an identifying witness who was of a different race.

**telic** *adj.* purposeful or goal directed in nature, as in **telic behavior**. See also TELEOLOGY.

**telic continuum** a typically J-shaped curve that describes purposeful behavior.

**Tellegen Absorption Scale (TAS)** a measure of a person's ability to become deeply involved in a task or an aspect of the environment. Consisting of 34 statements (e.g.,

"I like to watch cloud shapes change in the sky") to which participants respond *true* or *false*, it is considered to be a reliable indication of the ease with which an individual can be hypnotized. [devised in 1974 by Dutch-born U.S. psychologist Auke **Tellegen** (1930– )]

**telodendron** *n.* see END BRUSH.

**telomere** *n.* a structure found at the ends of chromosomes that protects fragments from rejoining after a chromosome has divided. Telomeres become progressively shorter with each cell division, and after a certain number of cell divisions, they become so short that they trigger the cell to stop dividing or to undergo PROGRAMMED CELL DEATH. Telomeres are said to act as a **genetic clock** that ticks down the number of times the cell can divide safely. See also HAYFLICK LIMIT.

**temazepam** *n.* an intermediate-acting BENZODIAZEPINE used for the short-term treatment of insomnia. Temazepam is readily processed in the liver to form an inactive metabolic product; it therefore has a relatively predictable HALF-LIFE and does not accumulate in the body with repeated doses. As with other benzodiazepine HYPNOTICS, however, tolerance can occur with repeated use. U.S. trade name: **Restoril**.

**temper** *n.* **1.** a display of irritation or anger, or a tendency to be quick to anger. See also TEMPER TANTRUM. **2.** a personality characteristic, disposition, or mood.

**temperament** *n.* the basic foundation of personality, usually assumed to be biologically determined and present early in life, including such characteristics as energy level, emotional responsiveness, demeanor, mood, response tempo, behavioral inhibition, and willingness to explore. In animal behavior, temperament is defined as an individual's constitutional pattern of reactions, with a similar range of characteristics. Studies of animals ranging from fish to nonhuman primates have documented differences in temperament, particularly along the SHY–BOLD CONTINUUM. Within each population, there are individuals that show high levels of exploratory behavior toward novel features and others that appear to display NEOPHOBIA.

**Temperament and Character Inventory (TCI)** a 240-item, true–false self-report inventory derived from CLONINGER'S PSYCHOBIOLOGICAL MODEL OF PERSONALITY that measures four dimensions of temperament (**harm avoidance**, **novelty seeking**, **reward dependence**, and **PERSISTENCE**) and three dimensions of character (**self-directedness**, **cooperativeness**, and **self-transcendence**). The seven main dimensions comprise 25 subscales or facets of personality. Originally developed in 1987 with 100 items and called the **Tridimensional Personality Questionnaire (TPQ)**, the TCI has been updated and revised twice since that time. The most recent version, the **Temperament and Character Inventory–Revised (TCI–R)**, was published in 1999. It has been utilized in research on the genetic heritability of personality, on personality variability in psychopathology, and on the effect of personality on psychotherapy outcome. [developed by U.S. psychiatrist and geneticist C. Robert Cloninger (1944– )]

**temperament theory** the theory that behavioral tendencies are biologically based and present from birth, forming the DISPOSITION of the individual.

**temperament trait** **1.** a biologically based, inherited personality characteristic. **2.** a personality trait that involves emotional qualities and affective styles of behavior. It is one of three classes of SOURCE TRAITS in CATTELL'S PER-

SONALITY TRAIT THEORY, the other two being ABILITY TRAITS and DYNAMIC TRAITS.

**temperance** *n.* any form of auspicious self-restraint, manifested as self-regulation in monitoring and managing one's emotions, motivation, and behavior and as self-control in the attainment of adaptive goals.

**temperature illusion** a misinterpretation of a temperature stimulus. PARADOXICAL COLD is an example: A very hot shower may cause goose bumps and a feeling of cold. Also called **thermal illusion**.

**temperature sense** a part of the SOMATOSENSORY SYSTEM concerned with the perception of hotness and coldness, with receptors at various depths in the skin and other body surfaces (e.g., the tongue) that may be exposed to the environment. Also called **thermesthesia**; **thermoesthesia**.

**temperature spot** an area of the skin that contains temperature-sensitive receptors.

**temper tantrum** a violent outburst of anger commonly occurring between the ages of 2 and 4 and involving such behavior as screaming, kicking, biting, hitting, and head banging. The episodes are usually out of proportion to immediate provocation and sometimes regarded as an expression of accumulated tensions and frustrations. Also called **tantrum**. See also OPPOSITIONAL DEFIANT DISORDER.

**template-matching theory** the hypothesis that PATTERN RECOGNITION proceeds by comparing an incoming sensory stimulation pattern to mental images or representations of patterns (templates) until a match is found. This theory is largely considered too simplistic, because the same stimulus can be viewed from multiple perspectives, thereby altering the input pattern, and because a particular stimulus can have many different variations (e.g., a letter of the alphabet can be printed in numerous styles, sizes, orientations); it is impossible to store a template for each specific perspective or variation.

**temporal** *adj.* **1.** of or pertaining to time or its role in some process, as in TEMPORAL CONDITIONING or TEMPORAL SUMMATION. **2.** relating or proximal to the temple, as in TEMPORAL LOBE. —**temporally** *adv.*

**temporal appraisal theory** a model stating that people's evaluations of their past selves tend to be more negative than their evaluations of their current selves.

**temporal arteritis** see ARTERITIS.

**temporal aspects of consciousness** those properties of consciousness relating to time and duration, including the SPECIOUS PRESENT, the length of time necessary for sensory stimulation to come to awareness, and the subjective perception of time intervals. See PROTENSITY.

**temporal bone** the bone, located toward the side and base of the skull, that contains the MIDDLE EAR and the INNER EAR.

**temporal coding** a type of neural plotting of the precise timing of the points of maximum intensity (spikes) between ACTION POTENTIALS. It can provide valuable additional detail to information obtained through simple RATE CODING.

**temporal coherence** see COHERENCE.

**temporal conditioning** a procedure in CLASSICAL CONDITIONING in which the unconditioned stimulus is pre-

sented at regular intervals but in the absence of an accompanying conditioned stimulus. Compare TRACE CONDITIONING.

**temporal consistency** the correlation between measurements obtained from the same test or instrument when administered to the same sample on two different occasions. Temporal consistency is an index of the RETEST RELIABILITY of an instrument. It assumes that there is no substantial change in the construct being measured between the two occasions. The longer the time gap, the greater the likelihood of a lower correlation. Also called **temporal stability**.

**temporal construal theory** a model stating that people rely on largely abstract representations (high-level construals) of future situations when making decisions for the distant future but on more concrete representations (low-level construals) when making decisions for the near future.

**temporal discounting** see BEHAVIORAL ECONOMICS.

**temporal discrimination** in conditioning, a differential response made according to the duration of a stimulus or circumstance.

**temporal frequency** the number of occurrences of a repeating event per unit of time. For example, if 80 repeating events occur within 20 seconds, the frequency (*f*) is  $80/20 = 4$ .

**temporal-frequency discrimination** the ability to distinguish different temporal patterns in visual, auditory, or other types of stimuli (e.g., different pulse rates by touch). See also PATTERN DISCRIMINATION.

**temporal gradient** a pattern of retrograde amnesia characterized by greater loss of memory for events from the recent past (i.e., close to the onset of the amnesia) than for events from the remote past. See also RIBOT'S LAW.

**temporal hallucinations** see TEMPORAL LOBE ILLUSIONS.

**temporal lobe** one of the four main subdivisions of each CEREBRAL HEMISPHERE in the brain, lying immediately below the LATERAL SULCUS on the outer surface of each hemisphere. It contains the auditory projection and auditory association areas and also areas for higher order visual processing. The MEDIAL TEMPORAL LOBE contains regions important for memory formation.

**temporal lobe amnesia** a memory disorder, secondary to injury of the temporal lobe (particularly medial structures, such as the hippocampus), that prevents the formation of new memories.

**temporal lobectomy** the surgical excision of a temporal lobe or a portion of the lobe. It may be performed in the treatment of temporal lobe epilepsy, the location and size of the lesion determining which tissues and related functions may be affected.

**temporal lobe epilepsy** a type of epilepsy characterized by recurrent COMPLEX PARTIAL SEIZURES of temporal lobe origin.

**temporal lobe illusions** distorted perceptions that may be associated with COMPLEX PARTIAL SEIZURES arising from abnormal discharge of neurons in the temporal lobe. They often include distortions of the sizes or shapes of objects, recurrent dreamlike thoughts, or sensations of déjà vu. Hallucinations, such as the sound of threatening

voices, may also be experienced. Also called **temporal hallucinations**; **temporal lobe hallucinations**.

**temporal lobe syndrome** a group of personality and behavioral disturbances associated with temporal lobe epilepsy in some individuals. These may include a profound sense of righteousness, preoccupation with details, compulsive writing or drawing, religiosity, and changes in sexual attitudes.

**temporal modulation transfer function (TMTF)** a formula describing the ability to follow changes in the magnitude of a stimulus over time. In PSYCHOACOUSTICS, a TMTF is usually obtained by measuring the amount of sinusoidal amplitude MODULATION that is necessary to detect the modulation (a **modulation threshold**) as a function of the frequency of that modulation. TMTFs are similarly measured in other modalities. The utility of the TMTF is grounded in linear systems theory, specifically the principle that the transfer function of a LINEAR SYSTEM provides a complete description of the system.

**temporal perceptual disorder** a condition, observed in some individuals with lesions in the left hemisphere of the brain, that is characterized by difficulty in perceiving visual and auditory stimuli over time. For example, individuals may be unable to identify a sequence of vowels repeated at measured time intervals.

**temporal precedence** in establishing cause–effect relationships between two variables, the principle that the cause must be shown to have occurred before the effect. Two other requirements are those of COVARIATION and nonspuriousness (i.e., there are no plausible alternative explanations for the observed relationship).

**temporal stability** see TEMPORAL CONSISTENCY.

**temporal summation** a neural mechanism in which an impulse is propagated by two successive POSTSYNAPTIC POTENTIALS (PSPs), neither of which alone is of sufficient intensity to cause a response. The partial DEPOLARIZATION caused by the first PSP continues for a few milliseconds and is able, with the additive effect of the second PSP, to produce an above-threshold depolarization sufficient to elicit an ACTION POTENTIAL. Compare SPATIAL SUMMATION.

**temporal validity** a type of EXTERNAL VALIDITY that refers to the generalizability of a study's results across time. Also called **temporal external validity**.

**temporary commitment** emergency INVOLUNTARY HOSPITALIZATION of a patient with a mental disorder for a limited period of observation or treatment.

**temporary lesion** a nonpermanent disruption of the normal functioning of a specific brain area in an organism, typically produced by an injection of drugs into that brain area or by electromagnetic stimulation of the area.

**temporary threshold shift (TTS)** a brief alteration or disruption of the normal level of hearing. For example, after relatively prolonged exposure to very loud noise, one's absolute threshold may shift so that minimal sound intensities that could normally be detected are temporarily inaudible. A similar shift can occur in vision.

**temporomandibular joint syndrome** see TMJ SYNDROME.

**temptation** *n.* a desire, or a stimulus that facilitates a desire, to behave in a certain way, especially in a way contrary to one's own or society's standards of behavior.

**tend-and-befriend response** a proposed physiological and behavioral stress regulatory system that is an alternative to the classic FIGHT-OR-FLIGHT RESPONSE and that is stronger in females than in males. Tending involves nurturant activities designed to protect the self and offspring, to promote a sense of safety, and to reduce distress, and befriending is expressed in the creation and maintenance of social networks that aid in this process. Neuroendocrinal evidence from research on both human and nonhuman animals suggests an underlying physiological mechanism mediated by OXYTOCIN and moderated by female sex hormones and opioid peptide mechanisms. [proposed in 2000 by U.S. social psychologist Shelley E. Taylor (1946– ) and colleagues]

**tendentious apperception** the tendency to perceive what one wishes to perceive in an event or situation. See also PERCEPTUAL SET.

**tender-mindedness** *n.* a personality trait characterized by intellectualism, idealism, optimism, dogmatism, religiousness, and monism. Compare TOUGH-MINDEDNESS. [first described by William JAMES] —**tender-minded** *adj.*

**tender years doctrine** the assumption in CHILD CUSTODY cases that mothers should be awarded custody of their children during the formative years of development. See also PRIMARY CARETAKER STANDARD.

**tendinitis** *n.* see REPETITIVE STRAIN INJURY.

**tendon** *n.* a strong band of tissue that connects a muscle to a bone.

**tendon reflex** the automatic contraction of a muscle elicited by stretching a tendon. Such reflexes are mediated by tendon stretch detectors, called GOLGI TENDON ORGANS. An example of a tendon reflex is the PATELLAR REFLEX, elicited by tapping or stretching the patellar tendon just below the kneecap. Also called **deep reflex**.

**tendon sensation** the kinesthetic sensation produced by stimulating the receptors in a tendon, such as by stretching it.

**Tenex** *n.* a trade name for GUANEFACINE.

**Tennessee Self-Concept Scale (TSCS)** a self-report assessment consisting of descriptive statements to which participants respond using a 5-point scale, ranging from *always false* to *always true*. It is available in two forms—Adult, containing 82 items for use with individuals 13 years and older, and Child, containing 76 items for use with individuals 7 to 14 years old—and yields measurements on six substantive dimensions of SELF-CONCEPT (Physical, Moral, Personal, Family, Social, Academic/Work) within three domains (Identity, Satisfaction, Behavior). The TSCS was originally published in 1964; the most recent version is the **TSCS–2**, published in 1996. [originally developed by U.S. psychologist William H. Fitts (1918– )]

**TENS** transcutaneous electrical nerve stimulation; a procedure in which mild electrical pulses are delivered through small electrodes attached to the skin. TENS is most commonly used to relieve or reduce chronic pain: The pulses stimulate nerves that supply the region in which the pain is felt and thus inhibit transmission of pain signals.

**tense** **1.** *adj.* in a state of nervous activity. **2.** *n.* in linguistics, one of a set of forms taken by a verb to mark the relation between the time of the reported action (or state or condition) and the time of the utterance. In addition to the simple present (*I run*) and simple past (*I ran*), English has a

future tense formed using the AUXILIARY VERBS *shall* and *will*; additional aspects of the verb, expressing completed or continuous action, can be formed using the auxiliary verbs *be*, *have*, and *do* (*I did run*, *I am running*, etc.).

**tension** *n.* **1.** a feeling of physical and psychological strain accompanied by discomfort, uneasiness, and pressure to seek relief through talk or action. **2.** the force resulting from contraction or extension of a muscle or tendon.

**tension headache** a persistent headache produced by acute or prolonged emotional or physical strain and usually accompanied by insomnia, irritability, and painful contraction of the neck muscles.

**tension law** a concept that any deviation from an organism's optimal level of external conditions (e.g., temperature, atmospheric pressure) produces a state of tension. Compare HOMEOSTASIS.

**tension reduction** alleviation of feelings of tension. A variety of techniques may be used for this purpose, including RELAXATION THERAPY, tranquilizing drugs, muscle relaxants, hypnotic suggestion, periods of MEDITATION, verbal CATHARSIS, or MOVEMENT THERAPY.

**tensor tympani** a middle ear muscle that controls the movement of the TYMPANIC MEMBRANE (eardrum). Its activation (the **tympanic reflex**) is part of the ACOUSTIC REFLEX.

**tenth cranial nerve** see VAGUS NERVE.

**tenting** *n.* lengthening and expansion of the inner two thirds of the vagina and elevation of the uterus during the excitement and plateau phases of the female SEXUAL-RESPONSE CYCLE. Tenting may facilitate conception by allowing pooling of the semen near the cervix.

**tentorial herniation** see TRANSTENTORIAL HERNIATION.

**tentorium cerebelli** a fold of DURA MATER that separates the upper (dorsal) surface of the cerebellum from the lower (basal) surfaces of the occipital and temporal lobes of the cerebrum. The tentorium cerebelli is attached at the midline to the falx cerebri, a vertical fold of dura mater that lines the inner (medial) surface of each cerebral hemisphere.

**ten–twenty system** a standardized system of imaginary lines on the head that allows for placement of electrodes during ELECTROENCEPHALOGRAPHY.

**Tenuate** *n.* a trade name for DIETHYLPROPION.

**tenure** *n.* see JOB TENURE.

**teratogen** *n.* an agent that induces developmental abnormalities in a fetus. The process that results in these abnormalities is called **teratogenesis**; a **teratomorph** is a fetus or offspring with these abnormalities.

**teratological defect** a structural or functional abnormality in offspring caused by hereditary factors or an environmental influence, such as maternal exposure to drugs or X-rays during pregnancy. Examples of such defects include Down syndrome, associated with abnormal genetic factors, and THALIDOMIDE syndrome, marked by deformed arms and legs and caused by thalidomide taken during the mother's pregnancy.

**teratology** *n.* the study of developmental abnormalities and their causes. —**teratological** *adj.*

**term** *n.* the point in a pregnancy at which childbirth is

normally expected to occur. In humans, this is defined as 37 to 42 weeks after the woman's last menstruation. See also GESTATION PERIOD; PRETERM VIABILITY.

**Terman–McNemar Test of Mental Ability** an early group intelligence test designed for students in Grades 7 through 12 and consisting of 162 four- or five-option multiple-choice items within seven types of verbal subtest: synonyms, classification, logical selection, information, analogies, opposites, and best answer. It was a modification and replacement of the 1920 **Terman Group Test of Mental Ability**, which was also a group-administered test but consisted of two-option multiple-choice items within 10 subtests: classification, logical selection, information, analogies, best answer, word meaning, sentence meaning, mixed sentences, arithmetic, and number series. [developed in 1942 by Lewis M. TERMAN and Quinn McNemar (1900–1986), U.S. psychologists]

**Terman's giftedness study** a longitudinal study of 1,528 gifted children in California. The participants—3 to 19 years old—had IQs above 135. The study suggested that individuals who are gifted as children tend to exhibit greater success throughout their lifetimes, as measured by conventional societal standards, than those who are not. It also suggested that 2% of the population is gifted and that gifted children have better health and happier lives than their counterparts. [initiated in 1921 by Lewis M. TERMAN]

**terminal** **1.** *adj.* referring to the end. **2.** *n.* the end of a structure, such as an AXON terminal.

**terminal assessment** see SUMMATIVE EVALUATION.

**terminal behavior** **1.** relatively unvaried behavior that is predominant in the period shortly before reinforcement occurs during operant or instrumental conditioning. Compare ADJUNCTIVE BEHAVIOR. **2.** a response that either is not part of an organism's current behavioral repertoire or is not occurring at a desired rate, strength, or magnitude. Increasing terminal behavior is the aim of specific behavioral interventions.

**terminal button (terminal bouton)** see AXON.

**terminal care** services for people with terminal illness, now usually provided by HOSPICES, which may be either freestanding units or associated with hospitals, nursing homes, or extended care facilities. The emphasis is on PALLIATIVE CARE, pain control, supportive psychological services, and involvement in family and social activities, with the goal of enabling patients to live out their lives in comfort, peace, and dignity.

**terminal decline** a rapid deterioration in cognitive abilities immediately before death. The cognitive abilities that appear to be most prone to terminal decline are those least affected by normal aging (see HOLD FUNCTIONS). Also called **terminal drop**.

**terminal event** in a series of related events, an event that can occur only once and after which no other event of interest can occur. In many clinical and observational studies, the terminal event is death, whereas nonterminal or recurrent events include hospitalizations, relapses, recurrence of behaviors and symptoms, and the like.

**terminal insomnia** a chronic problem in which an individual habitually awakens very early, feels unrefreshed, and cannot go back to sleep. It is a common symptom of a MAJOR DEPRESSIVE EPISODE. Also called **early-morning awakening insomnia**. Compare INITIAL INSOMNIA; MIDDLE INSOMNIA.

**terminal link** see CONCURRENT-CHAINS PROCEDURE.

**terminal threshold** the stimulus intensity above which no further changes in sensation occur.

**termination** *n.* in therapy, the conclusion of treatment. Termination may be suggested by the client or therapist or may be by mutual agreement. It can be immediate or prolonged; in the latter case, a date for the final session is established and sessions are sometimes scheduled less frequently over the intervening period. In **premature termination**, treatment is ended before either the therapist or client considers the therapy complete. This may result, for example, from difficulties in the therapeutic relationship, misunderstanding of the required length of treatment, a change in the client's financial circumstances, or departure of the client or therapist to another location.

**TerraNova CAT** see CALIFORNIA ACHIEVEMENT TESTS.

**territorial aggression** the act of defending a defined space (a territory) by fighting or threatening intruders of the same species. See also TERRITORIALITY.

**territorial dominance** **1.** in animal behavior, the ability of resident animals to protect a defined space (their territory) as well as to drive out intruders that may be larger and stronger. Residents typically have a competitive advantage over intruders that they would not have in a neutral environment. See TERRITORIALITY. **2.** the tendency of people to dominate interpersonal interactions to a greater extent when in their own homes or offices.

**territoriality** *n.* **1.** the defense by a nonhuman animal of a specific geographic area (its **primary territory**) against intrusion from other members of the same species. Territory differs from HOME RANGE in being an area that is actively defended and from PERSONAL SPACE in being a geographic area. Territoriality is observed in a wide range of animals and is found most often where there are specific defensible resources, such as a concentration of food or shelter. It is maintained through singing in birds and through SCENT MARKING in many mammals (e.g., antelope, dogs), as well as by active patrolling of territory boundaries. **2.** in humans, behavior associated with the need or ability to control and regulate access to a space, which reflects feelings of identity derived from use of and attachment to a familiar place. See also PUBLIC TERRITORY.

**territorial marking** the use of SCENT MARKING to indicate territory boundaries.

**terror** *n.* intense and overwhelming fear.

**terrorism** *n.* systematic intimidation or coercion to attain political or religious objectives using unlawful and unpredictable force or violence against property, persons, or governments. See also BIOTERRORISM. —**terrorist** *adj.*, *n.*

**terror management theory** a theory proposing that control of DEATH ANXIETY is the primary function of society and the main motivation in human behavior. Accordingly, awareness of the inevitability of death (MORTALITY SALIENCE) motivates people to maintain faith in the absolute validity of the cultural worldviews (i.e., beliefs and values) that give their lives meaning and to believe that they are living up to those standards, thus attaining a sense of personal value or self-esteem that buffers them against the frightening recognition of their own mortality. See also ONTOLOGICAL CONFRONTATION. [based on the work of U.S. cultural anthropologist Ernest Becker (1925–1974) and developed by U.S. psychologists Jeff Greenberg (1954– ),

Sheldon Solomon (1953– ), and Tom Pyszczynski (1954– )]

**tertiary care** highly specialized care given to patients who are in danger of disability or death. Tertiary care often requires sophisticated technologies provided by highly specialized practitioners and facilities, such as neurologists, neurosurgeons, thoracic surgeons, and intensive care units. Compare PRIMARY CARE; SECONDARY CARE.

**tertiary circular reaction** in PIAGETIAN THEORY, an infant's action that creatively alters former SCHEMES to fit the requirements of new situations. Tertiary circular reactions emerge toward the end of the SENSORIMOTOR STAGE, at about the beginning of the 2nd year; they differ from earlier behaviors in that the child can, for the first time, develop new schemes to achieve a desired goal. Also called **discovery of new means through active experimentation**. See also PRIMARY CIRCULAR REACTION; SECONDARY CIRCULAR REACTION.

**tertiary prevention** intervention for individuals or groups with already established psychological or physical conditions, disorders, or diseases. Tertiary interventions include attempts to minimize negative effects, prevent further disease or disorder related to complications, prevent relapse, and restore the highest physical or psychological functioning possible. Compare PRIMARY PREVENTION; SECONDARY PREVENTION.

**tertiary suggestibility** the easy, uncritical acceptance by an individual of another person's recommendation because of social pressure or the prestige of the person making the recommendation. Compare PRIMARY SUGGESTIBILITY; SECONDARY SUGGESTIBILITY. [proposed by Hans EYSENCK]

**test** **1.** *n.* any procedure or method used to examine or determine the presence of some factor or phenomenon. **2.** *n.* a standardized set of questions or other items designed to assess knowledge, skills, interests, or other characteristics of an examinee. See PSYCHOLOGICAL TEST. **3.** *n.* a set of operations, usually statistical in nature, designed to determine the VALIDITY of a hypothesis. **4.** *vb.* to administer a test.

**testability** *n.* the degree to which a hypothesis or theory is capable of being evaluated empirically.

**test age** see AGE EQUIVALENT.

**testamentary capacity** the mental competence to make a will. It involves being able to understand and remember the nature and extent of one's property and knowing who or what will receive that property.

**test analysis** a detailed statistical assessment of a test's PSYCHOMETRIC properties, including an evaluation of the quality of the test items and of the test as a whole. It usually includes information such as the MEAN and STANDARD DEVIATION for the test scores in the population used to develop the test, as well as data on the test's RELIABILITY; it may also include data on such factors as item difficulty value, ITEM DISCRIMINABILITY, and the effect of item DISTRACTORS.

**test anxiety** tension and apprehensiveness associated with taking a test, frequently resulting in a decrease in test performance. See PERFORMANCE ANXIETY.

**test battery** a group, series, or set of several tests designed to be administered as a unit in order to obtain a comprehensive assessment of a particular factor or phe-



nomenon. For example, a researcher may administer a battery of health surveys to a group of individuals diagnosed with a particular disease to assess multiple facets of the disease. Depending on the purpose of testing, individual tests may measure the same or different areas (or both) and may be scored separately or combined into a single score.

**test bias** the tendency of scores on a test to systematically over- or underestimate the true performance of individuals to whom that test is administered, particularly because they are members of specific groups (e.g., ethnic minorities, one or the other gender). See also CULTURAL TEST BIAS.

**test cutoff** **1.** the prearranged ending point or limit for an assessment. The limit may be in terms of time, number of incorrect answers given, or number of questions administered. **2.** a predetermined score performance standard for a given test. Those who perform at or above this score will be considered, for example, for admittance to certain programs or colleges; those who perform below this score will not.

**test for contrasts** any procedure used to determine which of the specific groups examined in an ANALYSIS OF VARIANCE are significantly different from each other, whether this takes the form of a POST HOC COMPARISON carried out after the data have been observed or an A PRIORI COMPARISON formulated before observation. For example, suppose one wished to analyze the outcomes from three different modes of training: (a) video-based instruction, (b) live lecture by an instructor, and (c) text reading only. After conducting an analysis of variance and obtaining results indicating there is a significant difference between the three modes, one could use a test for contrasts to evaluate various combinations of modes to identify where exactly the differences lie. Examples of specific tests for contrasts include the SCHEFFÉ TEST, TUKEY'S HONESTLY SIGNIFICANT DIFFERENCE TEST, and the FISHER LEAST SIGNIFICANT DIFFERENCE TEST.

**test for equality of variance** any procedure used to test for HOMOGENEITY OF VARIANCE. The assumption that the VARIANCES in the populations sampled are substantially equal is basic to many statistical procedures. If this assumption is violated, it may be necessary to transform the data or use NONPARAMETRIC TESTS. Also called **test of homogeneity**.

**test for independence** a procedure used to test the hypothesis of association or relationship between two variables. The observed frequencies of a variable are compared with the frequencies that would be expected if the NULL HYPOTHESIS of no association (i.e., statistical independence) were true. The CHI-SQUARE TEST is often used for this purpose.

**test for normality** any procedure used to test whether a data set follows a NORMAL DISTRIBUTION. Many statistical procedures are based on the assumption that the RANDOM VARIABLE of interest is normally distributed. When this assumption is violated, interpretation and inference from the statistical tests may not be warranted. Often, normality is most conveniently assessed using graphical methods, such as a STEM-AND-LEAF PLOT, to visualize the differences between an empirical distribution and the standard normal distribution. Alternatively, there are statistical tests of normality, such as the KOLMOGOROV-SMIRNOV GOODNESS-OF-FIT TEST and the SHAPIRO-WILK TEST.

**testicle** *n.* a TESTIS and its surrounding structures, in-

cluding the system of ducts within the scrotum. —**testicular** *adj.*

**testicular atrophy** reduction in size or loss of function of a testis as a result of obstruction of its blood supply, injury, infection, or surgical repair of an inguinal hernia. Pressure testicular atrophy may result from failure of a testis to descend normally from the abdominal cavity during sexual development.

**testicular feminization syndrome** see ANDROGEN-INSSENSITIVITY SYNDROME.

**testimony** *n.* evidence given in court by an individual who is under oath. See EXPERT TESTIMONY; EYEWITNESS TESTIMONY; OPINION TESTIMONY; ULTIMATE OPINION TESTIMONY.

**testing effect** the finding that taking a test on previously studied material leads to better retention than does restudying that material for an equivalent amount of time. Although testing is often conceptualized as an assessment tool, this finding suggests that testing (or retrieval practice) can also be considered a learning tool. Indeed, exams or tests seem to activate retrieval processes that facilitate the learning of study material and cause knowledge to be stored more effectively in long-term memory.

**testing the limits** **1.** in psychological testing, allowing a participant to proceed beyond time limits (or waiving other standardized requirements) to see if he or she can complete an item or do better under alternate conditions. **2.** attempts by an individual to see how far he or she can test rules before the rules are enforced. An example would be seeing how much talking one can get away with in a class before being reprimanded by the teacher. **3.** a method used to study adult age differences in cognition in which research participants are required to perform a task to the best of their ability and are then tested after extensive practice on the task. See also RESERVE CAPACITY. [developed by Paul B. BALTES and his associates]

**test interpretation** the clinical, educational, vocational, or other practical inferences given to a particular test result. Such conclusions are typically drawn by an expert in testing or by suitable computer software.

**testis** *n.* (*pl.* testes) the principal male reproductive organ, a pair of which is normally located in the scrotum. The testes produce sperm in the SEMINIFEROUS TUBULES (see SPERMATOGENESIS) and male sex hormones (ANDROGENS) in INTERSTITIAL CELLS. See TESTICLE. See also CRYPTORCHIDISM; HYPERMOBILE TESTES.

**testis-determining factor** see SEX DIFFERENTIATION.

**test marketing** research undertaken to assess consumer reactions to new or altered products. Companies often try to carry out this research discreetly so that competitors are unaware of any potential changes. On the basis of the results, products may be introduced into the general market, introduced after changes, or withdrawn.

**test norm** the typical standard of performance on a test, as established by testing a large group of people (the STANDARDIZATION GROUP) and analyzing their scores. In NORM-REFERENCED TESTING, subsequent test takers' scores are compared with the test norm to estimate the position of the tested individuals in a predefined population with respect to the trait being measured.

**Test of Attentional and Interpersonal Style (TAIS)** a self-report inventory used to determine an individ-

ual's dominant attentional style (see ATTENTIONAL FOCUS) and profile his or her style of interacting with others. Widely used in sports to predict and enhance athletic performance and in business to select and train individuals for particular jobs, the TAIS consists of 144 items (e.g., "All I need is a little information and I can come up with a large number of ideas") grouped into 17 subscales. [developed in 1976 by U.S. psychologist Robert M. Nideffer (1942– )]

**Test of Nonverbal Intelligence (TONI)** a language-free test of intelligence, abstract reasoning, and problem solving for individuals ages 6 through 89 years. The test items present problems of progressively increasing difficulty, with each item consisting of a stimulus figure and a set of choices below the stimulus that have up to eight abstract characteristics (i.e., shape, position, direction, rotation, contiguity, shading, size, and movement). Due to its language-free and motor-reduced format, the test can be used with individuals who have linguistic, hearing, or motor impairments or who are not proficient in English. First published in 1982, the test is now in its fourth edition (**TONI-4**), published in 2010. [developed by Linda Brown, Rita J. Sherbenou, and Susan K. Johnsen]

**test of significance** any statistical test or procedure, such as a T TEST, Z TEST, F TEST, or CHI-SQUARE TEST, used in SIGNIFICANCE TESTING.

**test of simple effects** in an ANALYSIS OF VARIANCE, a test used to determine the effect of one INDEPENDENT VARIABLE on the DEPENDENT VARIABLE at a single level of a second independent variable; that is, the test is used to examine the effects of one of the independent variables with the other independent variable held constant. For example, consider a researcher who finds a statistically significant interaction between two independent variables,  $A$  and  $B$ , that each have two levels,  $A_1$  and  $A_2$  and  $B_1$  and  $B_2$ . In this case, a test of simple effects involves two statistical tests: one of the difference between  $A_1$  and  $A_2$  at  $B_1$  and a second of the difference between  $A_1$  and  $A_2$  at  $B_2$ . The comparisons can also be undertaken by examining the difference between  $B_1$  and  $B_2$  at  $A_1$  and the difference between  $B_1$  and  $B_2$  at  $A_2$ .

**Test of Variables of Attention (TOVA)** a computerized CONTINUOUS PERFORMANCE TEST of sustained attention and impulsivity, typically used as a screening tool for attention-deficit/hyperactivity disorder. The test involves brief stimulus presentations at a fast rate and has both visual and auditory versions for individuals ages 6 and older, as well as a screening preschool version. The task for the visual version is to press a button in response to monochromatic targets (e.g., a small square at the top of a large square), ignoring nontargets (e.g., a small square at the bottom of a large square). In the first half of the test, targets are infrequent (they appear on 22.5% of the trials, eliciting errors of omission), whereas in the second half, targets are more frequent (they appear on 77.5% of the trials with an increased rate of presentation, eliciting errors of commission). Thus, the first half of the test is sensitive to problems with sustained attention, whereas the second half taps problems with inhibitory control. Test performance yields a number of other variables reflecting various behavioral features (e.g., consistency of response time). Developed in the 1960s by U.S. psychiatrist Lawrence M. Greenberg, the test was initially used with a mechanical device; the computerized version was introduced in 1991, and the most recent version (**TOVA-8**) has been available since 2011.

**test-operate-test-exit (TOTE)** see FEEDBACK LOOP.

**testosterone** *n.* a male sex hormone and the most potent of the ANDROGENS produced by the testes. It stimulates the development of male reproductive organs, including the prostate gland, and secondary SEX CHARACTERISTICS, such as beard, bone, and muscle growth. Women normally secrete small amounts of testosterone from the adrenal cortex and ovaries.

**test profile** an overall description or summary of an individual's relative standing or characteristics obtained by collating the findings from a series of tests or subtests. For example, a personality profile may show the data gathered on personality and other tests of interest and be used to evaluate the individual in areas related to his or her personal, educational, and professional lives, including temperament, decision-making methods and communication style, and general attitude toward work and life.

**test-retest correlation** the degree of association between measurements of the same variable obtained when the same test is administered on separate occasions. It is a simple estimator of the RELIABILITY of a test or instrument and is indexed by the **test-retest coefficient**.

**test-retest reliability** see RETEST RELIABILITY.

**test selection** the process of choosing the most useful test or set of assessment instruments to provide accurate diagnostic or other psychological information. Test selection is made on the basis of psychological history (often in conjunction with medical history), interviews, other pretest knowledge of the individual or group to be tested, or some combination of these.

**test sensitization** the design of a classification test so that it achieves optimum accuracy in identifying those participants who fall into particular categories. For example, a test may be sensitized by including certain items that are designed specifically to identify the highest performing students or employees.

**test sophistication** familiarity with a particular test or type of test, which might affect the score attained. See TESTWISE.

**test statistic 1.** the numerical result of a STATISTICAL TEST, which is used to determine STATISTICAL SIGNIFICANCE and evaluate the viability of a hypothesis. **2.** any of the statistics relating to a test or its components, such as indices of item difficulty, item RELIABILITY, ITEM DISCRIMINABILITY, and so on. See TEST ANALYSIS.

**test-study-test method** an approach to the teaching of spelling (and other similar content-acquisition subjects) that involves a pretest to determine the words a child knows, study of the words the child did not know, and then a retest.

**test theory** the body of theory underlying the interpretation and use of test scores. Of central concern is the definition and measurement of RELIABILITY. Theoretical frameworks include CLASSICAL TEST THEORY, GENERALIZABILITY THEORY, and ITEM RESPONSE THEORY.

**test-tube baby** a colloquial term for a baby born after IN VITRO FERTILIZATION.

**testwise** *adj.* describing a test taker who has developed skills and strategies that are not related to the construct being measured on the test but that facilitate an increased test score. Experience with similar tests, coaching, or the ability to respond advantageously to items that contain ex-

traneous clues and suggestions may yield a score that is higher than the true ability of the test taker.

**testwise alpha level** in HYPOTHESIS TESTING, the SIGNIFICANCE LEVEL (i.e., the level of risk of a TYPE I ERROR) selected for each individual test within a larger experiment. This is in contrast to EXPERIMENT-WISE ALPHA LEVEL, which sets the total risk of Type I error for the experiment. As more significance tests are conducted, the experiment-wise alpha level goes up, unless there is an adjustment to lower the testwise alpha level.

**testwise error rate** in a test involving MULTIPLE COMPARISONS, the probability of making a TYPE I ERROR on any specific test or comparison. FACTORIAL DESIGNS allow for the possibility of performing many such individual contrasts, and the related FAMILY-WISE ERROR RATE reflects the possibility of Type I error across the entire set of comparisons. Also called **comparison-wise error rate**; **per-comparison error rate**. See also EXPERIMENT-WISE ERROR RATE.

**tetanic contraction** a sustained contraction of a muscle, usually induced by repeated, rapid stimuli.

**tetanizing shock** an electric shock that produces sustained muscular contractions.

**tetanoid paraplegia** see SPASTIC PARAPLEGIA.

**tetany** *n.* see CALCIUM-DEFICIENCY DISORDERS.

**tetartanopia** *n.* an extremely rare form of partial color blindness marked by difficulty in discriminating between yellow and blue. Luminosity perception is normal, but the yellow and blue perception processes have confused or possibly merged connections. Its existence is considered controversial. See DICHROMATISM.

**tetra-** (**tetr-**) *combining form* four.

**tetrabenazine** *n.* a drug used in the treatment of Huntington's disease and other hyperkinetic movement disorders. It acts by depleting brain stores of the monoamine neurotransmitters dopamine, norepinephrine, and serotonin and produces such side effects as PARKINSONISM, sedation, and depression. U.S. trade name: **Xenazine**. Canadian trade name: **Nitoman**.

**tetrachoric correlation coefficient** (symbol:  $r_{tet}$ ) an index reflecting the degree of relationship between two continuous variables that have both been dichotomized. For example, a researcher may need to correlate pass-fail on a test and graduate-nongraduate from school, wherein pass-fail is the dichotomization of continuous scores on a test and graduate-nongraduate is a dichotomization of grade-point average.

**tetrachromatism** *n.* **1.** the color vision of organisms that have four different types of cone cells that respond to different wavelengths. Such organisms (e.g., zebrafish, many birds) are called **tetrachromats**. **2.** the theory that normal color vision in humans is based upon perception of the four colors red, green, blue, and yellow.

**tetrahydrocannabinol** (THC; **delta-9-tetrahydrocannabinol**) *n.* one of a number of CANNABINOIDS principally responsible for the psychoactive properties of CANNABIS. THC is available in a synthetic pharmaceutical preparation (also called a **synthetic cannabinoid**) known as **dronabinol** (U.S. trade name: **Marinol**) for use in the treatment of chemotherapy-induced nausea and vomiting and as an appetite stimulant for the treatment of HIV-related anorexia. Research suggests it may also be effective in re-

ducing intraocular pressure and as an analgesic. See also NABILONE.

**tetraparesis** *n.* see QUADRIPARESIS.

**tetraplegia** *n.* see QUADRIPLÉGIA.

**tetrasomy X** see XXXX SYNDROME.

**tetrodotoxin** (TTX) *n.* a toxin from puffer fish ovaries that blocks the voltage-gated sodium channels in neuron plasma membranes (see VOLTAGE-GATED ION CHANNEL), thus preventing the conduction of action potentials.

**textons** *pl. n.* elemental features of visual stimuli that provide the basis for preattentive segmentation of a visual scene, prior to the direction of focused attention on any one object within the scene (see FEATURE-INTEGRATION THEORY). There are three categories of textons: elongated blobs, with their attendant color, orientation, and width; terminators, which convey the end of a line segment; and crossings of line segments. [proposed in the 1980s by Béla JULESZ]

**text telephone** (TTY) see TELECOMMUNICATION DEVICE.

**textual narrative** see VERBAL NARRATIVE.

**texture gradient** the progressive decline in the resolution of textures as the viewer moves away from them. See GRADIENT OF TEXTURE.

**texture perception** perception of the surface characteristics of an object or substance, typically using touch or VISUAL TEXTURE.

**texture segregation task** any detection task in which the figure to be detected is defined by textural elements so that it must be distinguished from some background pattern of a different texture.

**TFT strategy** abbreviation for TTT-FOR-TAT STRATEGY.

**TGA** abbreviation for TRANSIENT GLOBAL AMNESIA.

**T-group** *n.* training group: a type of experiential group, usually of a dozen or so people, concerned with fostering attitude change and the development of "basic skills," such as effective leadership and communication. **T-group training** was developed by the National Training Laboratory in Group Development in the late 1940s and grew out of Kurt LEWIN's work in the area of small-group dynamics. Although the term is sometimes used synonymously with ENCOUNTER GROUP, the emphasis in a T-group is less on personal growth and more on SENSITIVITY TRAINING and practical interpersonal skills (e.g., as stressed in management training). One of the goals of T-groups is to foster greater understanding of group dynamics and of the individual members' roles within the group or organization.

**thalamic lesion** a loss of structure or function of a part of the THALAMUS, resulting in such effects as deficits in avoidance learning and other types of new learning. For example, experimental animals with a thalamic lesion take much longer to learn to avoid an electric shock. Effects vary somewhat with the part of the thalamus affected.

**thalamic nucleus** any of the various nuclei of the THALAMUS.

**thalamic pacemaker** a group of nuclei in the THALAMUS that trigger waves of electrical activity in the cerebral cortex. Several thalamic nuclei have been found to initiate cortical discharges, including the intralaminar, midline, reticular, and ventralis anterior nuclei. Pacemaker neurons

in the reticular nucleus excite cortical cells to fire synchronously in the pattern of SLOW-WAVE SLEEP.

**thalamic sensory gating** adjustment by the THALAMUS of the brain's responses to stimuli. The thalamus functions as a conduit, but it also serves as a gatekeeper for most of the sensory input flowing into the brain. This gate is managed by alterations in various neurotransmitter systems, thereby restricting or expanding the flow of afferent stimuli back to the rest of the brain. For example, if the brain is getting more than it needs of a stimulus, the thalamus makes adjustments to reduce the stimulation.

**thalamic taste area** the area of the THALAMUS that relays taste information from the SOLITARY NUCLEUS to the primary TASTE CORTEX. About one third of its neurons respond to taste; others are activated by touch or temperature stimulation of the mouth or even by the anticipation of an approaching taste stimulus.

**thalamic theory of Cannon** see CANNON-BARD THEORY.

**thalamocortical system** the THALAMUS and CEREBRAL CORTEX collectively. These parts of the brain are so closely and reciprocally interconnected—especially in mammals—that they are often treated as a single system. Normal functioning of this system appears to be necessary for conscious experiences and voluntary actions. During waking states, groups of neurons in this system exhibit a pattern of continuous firing. During states of reduced consciousness, such as deep sleep, the entire system goes into an oscillatory mode characterized by neuronal BURST-PAUSE FIRING.

**thalamotomy** *n.* a neurosurgical technique in which a portion of the THALAMUS is destroyed. It is used primarily to relieve tremors in patients with Parkinson's disease and to relieve pain. Developed in the 1940s for the treatment of severe, intractable mental illness (e.g. schizophrenia, depression), the technique is sometimes used for that purpose today as well.

**thalamus** *n.* (*pl.* **thalami**) a mass of gray matter, forming part of the DIENCEPHALON of the brain, whose two lobes form the walls of the THIRD VENTRICLE. It consists of a collection of sensory, motor, autonomic, and associational nuclei, serving as a relay for nerve impulses traveling between the spinal cord and brainstem and the cerebral cortex. Specific areas of the body surface and cerebral cortex are related to specific parts of the thalamus. Many structural and functional regions of the thalamus have been identified, including the DORSOMEDIAL NUCLEUS, the LATEROVENTRAL NUCLEUS, and the VENTROPOSTERIOR NUCLEUS. See also EPI-THALAMUS; SUBTHALAMUS. —**thalamic** *adj.*

**thalidomide** *n.* a drug reintroduced into the United States in 1998 as an immunosuppressant for treatment of cutaneous manifestations of erythema nodosum leprosum (a severe, acute form of leprosy). A derivative of the sedative GLUTETHIMIDE, it was originally (in the late 1950s and early 1960s) used to treat anxiety and morning sickness in pregnancy until its association with severe, life-threatening birth defects became apparent. Numerous fetal abnormalities—including abnormal limb development (see PHOCOMELIA) and gastrointestinal, cardiac, and neurological deficits—were common and the drug was withdrawn. Prescription requires special training by prescribers and pharmacists, and thalidomide must not be taken by women who are pregnant; both women and men who are taking thalidomide must comply with various conditions and con-

traceptive measures. Its mechanism of action is unclear. U.S. trade name: **Thalomid**.

**thanato-** (**thanat-**) *combining form* death.

**thanatology** *n.* the study of death and death-related behaviors, thoughts, feelings, and phenomena. Death was mostly the province of theology until the 1960s, when existential thinkers and a broad spectrum of care providers, educators, and social and behavioral scientists became interested in death-related issues. —**thanatologist** *n.*

**thanatomania** *n.* see VODOO DEATH.

**thanatomimesis** *n.* behavior that bears a strong resemblance to death and that may serve as a survival strategy. Examples can be seen in death-feigning spiders and opossums in response to a predator. —**thanatomimetic** *adj.*

**thanatophobia** *n.* a persistent and irrational fear of death or dying. This fear may focus on the death of oneself or of loved ones and is often associated with HYPOCHONDRIASIS. —**thanatophobic** *adj.*

**Thanatos** *n.* the personification of death and the brother of Hypnos (sleep) in Greek mythology, whose name was chosen by Sigmund FREUD to designate a theoretical set of strivings oriented toward the reduction of tension and life activity (see DEATH INSTINCT). In Freud's DUAL INSTINCT THEORY, Thanatos is seen as involved in a dialectic process with EROS (love), the striving toward sexuality, continued development, and heightened experience (see LIFE INSTINCT). See also NIRVANA PRINCIPLE.

**that's-not-all technique** a two-step procedure for enhancing COMPLIANCE that consists of (a) presenting an initial large request and then, before the person can respond, (b) immediately making the request more attractive by reducing it to a more modest target request or by offering some additional benefit. Compliance with the target request is greater following the initial request than would have been the case if the target request had been presented on its own. See also DOOR-IN-THE-FACE TECHNIQUE; FOOT-IN-THE-DOOR TECHNIQUE; LOW-BALL TECHNIQUE.

**THC** abbreviation for TETRAHYDROCANNABINOL.

**theater of consciousness** a metaphor in which the objects of conscious experience are likened to the actors in an attentional spotlight on a stage, whereas nonconscious psychological functions are likened to the darkened audience and the invisible backstage crew. See also CARTESIAN THEATER.

**Theater of Spontaneity** an experimental theater established in Vienna in 1921 by Jacob L. MORENO. The process of playing unrehearsed, improvised parts in the theater not only proved to be effective training for actors but also frequently had a beneficial effect on their interpersonal relationships. This technique evolved into PSYCHODRAMA, which Moreno brought to the United States in 1925.

**thebaine** *n.* an OPIUM alkaloid that is chemically similar to morphine but has stimulatory effects. It comprises about 0.2% of natural opium. Although thebaine lacks the analgesic effect of morphine, it can be converted to several important opioid agonists and antagonists (e.g., buprenorphine, naloxone).

**theism** *n.* belief in God, especially a personal God considered to be the creator and sustainer of the universe, who cares for and intervenes in creation but is distinct from it. Theism is central to orthodox Judeo-Christian be-

lief and may be distinguished from both DEISM and PANTHEISM. —**theist** *adj.*, *n.*

**thema** *n.* in the PERSONOLOGY of Henry Alexander MURRAY, a unifying theme, or unit of interplay, between an individual and the environment in which a need and a PRESS interact to yield satisfaction.

**thematic analysis** a qualitative research strategy for identifying, analyzing, and reporting identifiable patterns or themes within data. There are multiple phases to this process: The researcher (a) familiarizes himself or herself with the data; (b) generates initial codes or categories for possible placement of themes; (c) collates these codes into potential themes; (d) reviews the chosen themes and checks that these work in relation to the coded extracts and the entire data set, effectively generating a thematic “map” of the analysis; (e) defines and names the themes; and (f) produces the report. See also GROUNDED THEORY; THEORETICAL SAMPLING.

**Thematic Apperception Test (TAT)** a projective test, developed by Henry Alexander MURRAY and his associates, in which participants are held to reveal their attitudes, feelings, conflicts, and personality characteristics in the oral or written stories they make up about a series of ambiguous black-and-white pictures. Prior to administering the test, the examiner assures the participant that there are no right or wrong answers and indicates that the narratives should have a beginning, middle, and ending. At the end, the stories are discussed to elucidate themes and patterns. Systematic coding schemes, with demonstrated reliability and validity, have been developed to assess different aspects of personality functioning derived from TAT stories, including motivation for achievement, power, affiliation, and intimacy; gender identity; DEFENSE MECHANISMS; and mental processes influencing interpersonal relations. The TAT is one of the most frequently used and researched tests in psychology, particularly in clinical settings for diagnosing disorders, describing personality, and assessing strengths and weaknesses in personality functioning. See also CHILDREN’S APPERCEPTION TEST.

**thematic classification** see COMPLEMENTARY CLASSIFICATION.

**thematic paralogia** a speech characteristic marked by incessant, distorted dwelling on a single theme or subject.

**thematic paraphasia** incoherent speech that wanders from the theme or subject.

**thematic test** any examination in which a participant is required to tell a story from which interpretations are made about the individual’s psychological functioning, especially his or her nonconscious wishes and needs.

**theobromine** *n.* a METHYLXANTHINE alkaloid that occurs naturally in the seeds of *Theobroma cacao*, the cocoa plant. Theobromine is structurally similar to caffeine in coffee and theophylline in tea but has less pharmacological potency than either of these methylxanthines.

**theomania** *n.* a delusion in which the person believes himself or herself to be inspired by or possessed of divinity.

**theophagy** *n.* literally, the eating of God. In most uses, the term refers to the symbolic consumption of the body or blood of a deity, as in the Christian eucharist, as a means of communing more fully with the divine. However, it can also refer to certain rites in which adherents attempt to absorb the attributes of a deity by consuming the body or

blood of a slaughtered animal or human considered to be its representative.

**theophylline** *n.* see METHYLXANTHINE.

**theorem** *n.* in mathematics and logic, a statement or formula that can be deduced from previously established or accepted statements.

**theoretical construct** an explanatory concept that is not itself directly observable but that can be inferred from observed or measured data. In psychology, many hypothesized internal processes are of this kind, being presumed to underlie specific overt behaviors. For example, a personality dimension, such as neuroticism, might be described as a theoretical construct measurable by means of a questionnaire.

**theoretical distribution** a DISTRIBUTION that is derived from certain principles or assumptions by logical and mathematical reasoning, as opposed to one derived from real-world data obtained by empirical research. Examples include the NORMAL DISTRIBUTION, BINOMIAL DISTRIBUTION, and POISSON DISTRIBUTION. In general, the procedures of INFERENCE STATISTICS involve taking one or more empirically observed distributions and referring these to an appropriate theoretical distribution. When there is correspondence between an empirical and a theoretical distribution, the latter may be used to make inferences (predictions) about the probability of future empirical events. Also called **reference distribution**.

**theoretical integration** combining concepts from different therapeutic approaches to produce meaningful FRAMES that may help explain the dynamics or causes of problems in the functioning of an individual when any single traditional theoretical approach by itself fails to explain the behavior adequately.

**theoretical orientation** an organized set of assumptions or preferences for given theories that provides a counselor or clinician with a conceptual framework for understanding a client’s needs and for formulating a rationale for specific interventions.

**theoretical prediction** see PREDICTION.

**theoretical probability** the mathematical likelihood of a particular event occurring, as determined by dividing the number of positive outcomes by the total number of possible outcomes. For example, when flipping a coin, the theoretical probability that a tail will occur is 1 divided by 2 (the number of possible outcomes), giving a probability of .5 or 50%.

**theoretical sampling** a strategy, often adopted in QUALITATIVE RESEARCH, that involves the PURPOSEFUL SAMPLING of further data while a theoretical framework is still under construction. To gain a deeper understanding of the constructs involved, the researcher samples new research sites, cases, incidents, time periods, or data sources to compare with those that have already been studied. In this way, he or she seeks to build a theory from the emerging data while continuing to select new samples to examine and elaborate on the theory. See GROUNDED THEORY.

**theoretical statistics** the study of statistics from a mathematical and theoretical perspective, involving PROBABILITY THEORY, descriptive methods, inferences, and model building. For example, a researcher could use theoretical statistics to describe a set of achievement data, conduct HYPOTHESIS TESTING, and create models assessing

possible predictors of achievement. Also called **mathematical statistics**. Compare APPLIED STATISTICS.

**theory** *n.* **1.** a principle or body of interrelated principles that purports to explain or predict a number of interrelated phenomena. See CONSTRUCT; MODEL. **2.** in the philosophy of science, a set of logically related explanatory hypotheses that are consistent with a body of empirical facts and that may suggest more empirical relationships. See SCIENTIFIC EXPLANATION. **3.** in general usage, abstract or speculative thought as opposed to practice. —**theoretical** *adj.*

**theory begging** an informal FALLACY in which evidence for the truth of a theory is derived from a logical or empirical process that already assumes the truth, language, or perspective of that same theory. An example might be citing instances of stimulus–response connections established in empirical studies to verify that behavioristic accounts of learning are true, when the terminology *stimulus–response connection* was generated by a behavioristic account in the first place. Theory begging is thus a form of CIRCULAR REASONING.

**theory-laden** *adj.* **1.** describing a term or expression that can be understood only in the context of a particular theory. For example, some specialized vocabulary used in accounts of behavioral phenomena can be understood only in the context of the theory that generated the vocabulary and in the context of other constructs that are part of the theory's explanatory accounts. **2.** describing a proposition or observation that reflects theoretical presuppositions on the part of the person who deploys it. Often these presuppositions, which may be a source of bias, are nonconscious or unacknowledged. Some claim that all observations are theory-laden and thus that objectivity is impossible.

**theory of aging** any of several hypotheses about the biological, psychological, or social causes of the aging process.

**theory of evolution** see EVOLUTIONARY THEORY.

**theory of forms** the doctrine of PLATO that all things have a real, permanent existence as ideas or forms independent of one's senses and of the impoverished examples that one can perceive. Also called **theory of ideas**. See ANALOGY OF THE CAVE; PLATONIC IDEALISM; REMINISCENCE THEORY OF KNOWLEDGE.

**theory of mental self-government** a model of COGNITIVE STYLES that proposes several dimensions to describe the preferred ways in which individuals think or express their cognitive abilities. The dimensions include (a) governmental—preferences for the legislative, executive, and judicial functions of cognition (i.e., in planning, implementing, and evaluating); (b) problem solving—styles labeled monarchic (a tendency to pursue one goal at a time), hierarchic (multiple goals with different priorities), oligarchic (multiple equally important goals), and anarchic (unstructured, random problem solving); (c) global versus local thinking—preferring to think about large, abstract issues on the one hand or concrete details on the other; (d) internal versus external thinking—related to introversion–extraversion, social skills, and cooperativeness; and (e) conservative or progressive—rule-based leanings versus those that are creative and change oriented. [proposed in 1988 by U.S. psychologist Robert J. Sternberg (1949– )]

**theory of mind** the understanding that others have intentions, desires, beliefs, perceptions, and emotions different from one's own and that such intentions, desires, and so forth affect people's actions and behaviors. Children

show the rudiments of theory of mind as toddlers, have a limited understanding of the relation between belief and action by age 3, and can begin to infer false beliefs in others by around age 4 (see FALSE-BELIEF TASK). There has been considerable controversy about whether nonhuman animals have this ability. See also BELIEF–DESIRE REASONING; MINDBLINDNESS.

**theory of misapplied constancy** a theory of illusions proposing that the underlying cause is the inappropriate use of cues that normally allow accurate perception of such properties as size and shape. For example, depth might be misestimated if a display has converging lines that do not actually recede in depth: An object inside the lines would be seen as farther away than it actually is, and thus its size would also be misperceived.

**theory of personal investment** a motivational theory stating that the degree to which an individual will invest personal resources of time and effort in an activity, in anticipation of benefits, is a function of personal incentives (mastery orientation, competitive orientation, affiliation, status); beliefs about oneself (sense of competence, self-reliance, goal-directedness, identity); and perceived options (behavioral choices seen as available in the specific situation). [proposed in 1986 by U.S. psychologists Martin L. Maehr (1932– ) and Larry A. Braskamp]

**theory of planned behavior** a model that resembles the THEORY OF REASONED ACTION but also incorporates the construct of PERCEIVED BEHAVIORAL CONTROL. Perceived behavioral control is added to attitude toward behavior and SUBJECTIVE NORMS as the antecedents influencing both the intention to perform a behavior and the performance of the behavior itself. [originally proposed by U.S. social psychologist Icek Ajzen (1942– )]

**theory of reasoned action** the theory that attitudes toward a behavior and SUBJECTIVE NORMS (perceived expectations) regarding a behavior determine a person's intention to perform that behavior. Intentions are in turn assumed to cause the actual behavior. Also called **reasoned action model**. See also THEORY OF PLANNED BEHAVIOR. [originally proposed by U.S. social psychologists Martin Fishbein (1936–2009) and Icek Ajzen (1942– )]

**theory theory** a model proposing that children naturally construct theories to explain what they experience and that cognitive development occurs as they generate, test, and change theories about the physical and social world through ongoing observation, learning, and adaptation.

**Theory X and Y** two contrasting types of managerial philosophy: Theory X managers assume that workers are passive, lazy, and motivated only by money and security, whereas Theory Y managers assume that workers want to grow psychologically and desire autonomy and responsibility. It is hypothesized that these assumptions are self-fulfilling, so that workers who are subjected to Theory X management will act in a lazy and untrustworthy manner, and those who are subjected to Theory Y management and are provided with a workplace that encourages psychological growth will show creativity and initiative. A Theory X manager is authoritarian in leadership style, whereas a Theory Y manager is participative and democratic. [described by Douglas McGregor (1906–1964), U.S. management consultant and social psychologist]

**Theory Z** a managerial philosophy that emphasizes PARTICIPATIVE DECISION MAKING by employees, the encouragement of team spirit, and the use of measures to develop

greater respect between managers and employees. See also DEMING MANAGEMENT METHOD; TOTAL QUALITY MANAGEMENT. [identified by U.S. management theorist William G. Ouchi (1943– )]

**therapeutic** **1.** *adj.* pertaining to **therapeutics**, the branch of medical science concerned with the treatment of diseases and disorders and the discovery and application of remedial agents or methods. **2.** *adj.* having beneficial or curative effects. **3.** *n.* a compound that is used to treat specific diseases or medical conditions.

**therapeutic abortion** an abortion that is performed for medical reasons, such as to preserve the mother's health or save her life.

**therapeutic alliance** a cooperative working relationship between client and therapist, considered by many to be an essential aspect of successful therapy. Derived from the concept of the psychoanalytic working alliance, the therapeutic alliance comprises bonds, goals, and tasks. Bonds are constituted by the core conditions of therapy, the client's attitude toward the therapist, and the therapist's style of relating to the client; goals are the mutually negotiated, understood, agreed upon, and regularly reviewed aims of the therapy; and tasks are the activities carried out by both client and therapist. See THERAPIST–PATIENT RELATIONSHIP. [concept developed by U.S. psychologist Edward S. Bordin (1913–1992)]

**therapeutic atmosphere** an environment of acceptance, empathic understanding, and UNCONDITIONAL POSITIVE REGARD in which clients feel free to verbalize and consider their thoughts, behaviors, and emotions and make constructive changes in their attitudes and reactions.

**therapeutic camp** a camp that provides part-time care, therapeutic treatment, rehabilitation, or a combination of these for individuals, often children and adolescents, with a variety of conditions. Examples include camps for children with learning disabilities, for children and adolescents with HIV or AIDS, and for individuals with head injuries.

**therapeutic communication** any comment or verbalized observation by the therapist that increases the client's awareness or self-understanding.

**therapeutic community** a setting for individuals requiring therapy for a range of psychosocial problems and disorders that is based on an interpersonal, socially interactive approach to treatment, both among residents and among residents and staff (i.e., community as method or therapy). The term covers a variety of short- and long-term residential programs as well as day treatment and ambulatory programs. The staff is typically multidisciplinary and may consist of human services professionals and clinicians providing mental health, medical, vocational, educational, fiscal, and legal services, among others. Originating as an alternative to conventional psychiatric approaches, therapeutic communities have become a significant form of psychosocial treatment. See MILIEU THERAPY. [developed by British psychiatrist Maxwell Shaw Jones (1907–1990)]

**therapeutic crisis** a turning point in the treatment process, usually due to sudden insight or a significant revelation on the part of the client or patient. The crisis may have positive or negative implications and may lead to a change for the better or the worse, depending on how it is handled.

**therapeutic exercise** a regimen of movement exer-

cises prescribed to an individual by a clinician, physical therapist, or other practitioner as part of the individual's postsurgical convalescence, treatment for a chronic condition, or rehabilitation from disease or injury. Therapeutic exercises are recommended for numerous physical reasons, including to alleviate pain (e.g., postsurgical pain, chronic back pain); to increase cardiopulmonary function following a heart attack or heart surgery; to decrease muscle rigidity caused by movement disorders such as Parkinson's disease; or to improve mobility impaired by stroke, spinal cord injury, multiple sclerosis, or other neurological conditions. A wide variety of exercises is available, but broadly speaking, most are designed to increase physical endurance, flexibility, or strength (e.g., CIRCUIT RESISTANCE TRAINING). Those used for a given individual are determined according to his or her needs and abilities. Therapeutic exercises also promote psychological health and may be prescribed to reduce stress, induce relaxation, improve mood, increase energy levels, or otherwise enhance psychological function and well-being in individuals, with or without physical challenges, who are susceptible to depression, anxiety, agitation, or other mental health problems.

**therapeutic factors** factors in GROUP THERAPY that bring about therapeutic change. These include altruism, catharsis, cohesion, family reenactment, feedback, hope, identification, interpersonal learning, reality testing, role flexibility, universality, and vicarious learning. Therapeutic factors are often confused with COMMON FACTORS because both delineate effective change factors across theoretical models and techniques of therapy; however, common factors refer to individual psychotherapy, whereas therapeutic factors refer to group psychotherapy. Formerly called **curative factors**. [identified by U.S. psychologist Irwin Yalom (1931– )]

**therapeutic group** a group of individuals who meet under the leadership of a therapist for the express purpose of working together to improve the mental and emotional health of the members.

**therapeutic group analysis** see GROUP-ANALYTIC PSYCHOTHERAPY.

**therapeutic index** any of several indices relating the clinical effectiveness of a drug to its safety factor, the most common being the THERAPEUTIC RATIO. Other therapeutic indices include the ratio of the minimum toxic dose to the minimum EFFECTIVE DOSE and the difference between the minimum effective dose and the minimum toxic dose.

**therapeutic jurisprudence** the study of law as a therapeutic agent. Therapeutic jurisprudence involves the examination of how laws, procedures, and people who play an active role within the legal system (e.g., judges, law enforcement agents) may either help or harm the various other individuals involved (e.g., defendants, victims).

**therapeutic matrix** in COUPLES THERAPY, the specific combination of therapists and clients that is used in the sessions, such as a different therapist for each partner in COLLABORATIVE THERAPY or one or more therapists seeing the couple together in CONJOINT THERAPY.

**therapeutic process** see PSYCHOTHERAPEUTIC PROCESS.

**therapeutic ratio** an index relating the clinical effectiveness of a drug to its safety factor, calculated by dividing the median LETHAL DOSE (LD<sub>50</sub>) by the median EFFECTIVE DOSE (ED<sub>50</sub>). A drug is often considered safe only if its thera-

peutic ratio is at least 10. [introduced by German bacteriologist and immunologist Paul Ehrlich (1854–1915)]

**therapeutic relaxation** see RELAXATION THERAPY.

**therapeutic role** the function of the therapist or other agent in treating psychological disorders, alleviating painful responses or symptoms resulting from a distressing condition, or altering maladaptive thinking or behavior.

**therapeutic soliloquy** a procedure in which clients speak about themselves to a group without interruption. [developed by Jacob L. MORENO]

**therapeutic storytelling** see STORYTELLING.

**therapeutic touch** see TOUCH THERAPY.

**therapeutic window** the range of plasma levels of a drug within which optimal therapeutic effects occur. Sub-optimal effects may occur both below and above the therapeutic window. Evidence for true therapeutic windows was never well established; perhaps the best evidence existed for the tricyclic antidepressant NORTRIPTYLINE. Few modern psychotropic drugs require therapeutic monitoring, although LITHIUM is a notable exception; it has a very narrow therapeutic range below which it has no therapeutic effect and above which adverse effects and toxicity dominate.

**therapist** *n.* a former name for a THERAPIST.

**therapist** *n.* an individual who has been trained in and practices one or more types of therapy to treat mental or physical disorders or diseases. In the context of mental health, the term is often used synonymously with *psychotherapist* (see PSYCHOTHERAPY).

**therapist–patient relationship** the relationship developed in therapy between a psychotherapist and the patient (client) receiving therapy. There has been much theory and research concerning this interaction, particularly how it varies and changes over time and the significant implications that the dynamic has for the way in which treatment is offered and for its outcomes. The relationship has ethical dimensions that are often specified in PRACTICE GUIDELINES. See also THERAPEUTIC ALLIANCE.

**Theraplay** *n.* a short-term ATTACHMENT-BASED INTERVENTION in which elements of play therapy (e.g., games, playful interaction) are used to strengthen parent–child bonds and to promote secure attachments, self-regulation, and communication skills in children. The intervention has been used primarily to help families at high risk for dysfunctional parent–child (or caregiver–child) relationships, including families with foster or adopted children who are struggling with attachment problems and families with children who have autism, social anxiety, language disorders, or other conditions affecting a child’s ability to establish or maintain relationships with others. [originated in the late 1960s for Head Start preschoolers by German-born U.S. psychologist Ann M. Jernberg (1928–1993) and colleagues]

**therapy** *n.* 1. remediation of physical, mental, or behavioral disorders or disease. 2. see PSYCHOTHERAPY.

**therapy group climate** see GROUP CLIMATE.

**therapy outcome research** research that investigates the end results of therapy or other interventions to which patients are exposed. The focus is primarily on the “cure” (or not) of patients, but the research also evaluates their experiences, preferences, and values, as well as the wider influence on society. The aim is to identify shortfalls in

practice and to develop strategies to prevent or mitigate problems and improve care. See also TREATMENT OUTCOME RESEARCH; TREATMENT PROCESS RESEARCH.

**therapy puppet** a puppet used for ROLE PLAY in therapy with children. The use of a therapy puppet is sometimes more effective in revealing a child’s thoughts and feelings than is direct communication by the child with the therapist.

**therapy supervision** see SUPERVISION.

**therblig** *n.* a unit of movement sometimes used to describe and record industrial operations for the purposes of TIME AND MOTION STUDIES. It represents any one of the 18 fundamental, standardized activities involved in such operations: search, find, select, grasp, hold, position, assemble, use, disassemble, inspect, transport loaded, transport unloaded, pre-position for next operation, release load, unavoidable delay, avoidable delay, plan, and rest to overcome fatigue. [coined by U.S. engineer and efficiency expert Frank B. Gilbreth (1868–1924) and Lillian Moller GILBRETH, from a backward spelling of their surname]

**there-and-then approach** a historical approach to therapy, focusing on the roots of the client’s difficulties in past experience, as opposed to the HERE-AND-NOW approach.

**thermal comfort** the subjective evaluation of feelings with respect to temperature. Major contributing factors include humidity, air velocity, clothing, and level of physical exertion. Contrary to widespread belief, the range of thermal comfort is remarkably stable cross-culturally.

**thermal discrimination** the ability to detect differences in temperature among stimuli. Some animals (e.g., snakes) are able to locate prey by differences of a fraction of a degree between the temperature of the environment and that produced by the body heat of potential prey. Humans, however, are much less sensitive to temperature change.

**thermalgesia** *n.* an abnormal reaction to heat in which a warm stimulus produces pain.

**thermalgia** *n.* a condition characterized by intense, burning pain.

**thermal illusion** see TEMPERATURE ILLUSION.

**thermal sensitivity** the ability to detect temperature, which is generally perceived relative to the body’s temperature. See TEMPERATURE SENSE.

**thermal stimulation** stimulation of the skin with heat or cold.

**thermistor** *n.* a device used to measure temperatures according to their effects on the electrical resistance of semiconducting materials. Tiny thermistors can be implanted in neurons of nonhuman animals to measure such data as the energy of metabolic activity during nervous-system functions.

**thermo-** (therm-) combining form heat.

**thermoanesthesia** *n.* 1. loss or absence of the ability to distinguish between heat and cold by touch. 2. insensitivity to heat. Also called **thermanesthesia**.

**thermode** *n.* a device made of copper through which water can be circulated at a controlled temperature. A thermode can be implanted in an organ of a nonhuman animal in order to determine the effects of temperature



changes on surrounding tissues. Much information about thermal receptors has been obtained in this manner.

**thermoesthesia (thermesthesia)** *n.* see TEMPERATURE SENSE.

**thermography** *n.* a diagnostic technique in which thermally sensitive liquid crystals or infrared photography are used to detect temperature changes over the surface of the body. Thermography functions on the basis that diseased tissues, such as tumors, produce more heat than surrounding tissues and the heat can be measured in terms of infrared radiation.

**thermoreceptor** *n.* **1.** a receptor or sense organ that is activated by cold or warm stimuli. **2.** a part of the central nervous system that monitors and maintains the temperature of the body core and its vital organs. There is evidence for separate thermoregulatory regions in the spinal cord, brainstem, and hypothalamus.

**thermoregulation** *n.* the behavioral and physiological processes, collectively, that maintain normal body temperature. These processes include sweating and shivering. See also HOMEOSTASIS.

**thesis** *n.* (*pl.* **theses**) **1.** in logic, a proposition to be subjected to logical analysis in the interest of proof or disproof. **2.** more generally, any idea or proposition put forward in argumentation. **3.** in philosophy, the first stage of a dialectical process: a proposition that is opposed by an ANTITHESIS, thereby generating a new proposition referred to as a SYNTHESIS. The synthesis serves as the thesis for the next phase of the ongoing process. This use of the term is associated particularly with the work of German philosopher Georg Wilhelm Friedrich Hegel (1770–1831). See also DIALECTICAL MATERIALISM. **4.** a dissertation based on original research, especially one required for an advanced academic degree.

**theta feedback** NEUROFEEDBACK involving theta waves, of a frequency between 4 Hz and 7 Hz.

**theta wave** in electroencephalography, a type of regular BRAIN WAVE with a frequency of 4 Hz to 7 Hz. Theta waves occur during REM SLEEP in nonhuman animals, Stage 2 NREM SLEEP in humans, and the drowsy state prior to sleep onset in newborn infants, adolescents, and adults. Such waves are also recorded in TRANCES, HYPNOSIS, and DAYDREAMS. The hippocampus and frontal lobes are sources of theta activity. Also called **theta rhythm**.

**they-group** *n.* see OUTGROUP.

**thiamine (thiamin)** *n.* a vitamin of the B complex present in various foods and also normally present in blood plasma and cerebrospinal fluid. Deficiency of thiamine results in neurological symptoms, as occurs in BERIBERI, ALCOHOLIC NEUROPATHY, and KORSAKOFF'S SYNDROME. In severe cases, WERNICKE'S ENCEPHALOPATHY may result. Also called **vitamin B<sub>1</sub>**.

**thiazide diuretic** any of a group of synthetic chemicals developed in the 1950s and widely used in the treatment of hypertension. Thiazides cause the excretion of approximately equal amounts of sodium and chloride with an accompanying volume of water, thereby lowering blood pressure. Also called **benzothiadiazide**.

**thick description** in QUALITATIVE RESEARCH, the delineation and interpretation of observed behavior within its particular context so that the behavior becomes meaningful to an outsider. The context may be a small unit (a family

or work environment) or a larger unit (a community or general culture). The researcher not only accurately describes observed behavior or social actions but also assigns purpose, motivation, and intentionality to these actions by explaining the context within which they took place; thick description conveys the thoughts and feelings of participants as well as the complex web of relationships among them. In contrast, a **thin description** is a superficial account that does not explore underlying meanings. [introduced in 1973 by U.S. anthropologist Clifford Geertz (1926–2006)]

**thick stripes** broad bands of increased CYTOCHROME OXIDASE activity in the region of the prestriate cortex known as V2. The thick stripes receive input from layer IVb of V1 and analyze signals carried by the MAGNOCELLULAR SYSTEM.

**thienobenzodiazepine** *n.* any member of a class of chemically related compounds that include OLANZAPINE, an ATYPICAL ANTIPSYCHOTIC introduced into the U.S. market in 1996.

**thigmesthesia** *n.* sensitivity to pressure. See TOUCH SENSE.

**think-aloud protocol** a transcript of ongoing mental activity, as reported by a participant engaged in some task. The participant thinks aloud while performing the task, thus creating a record of his or her cognitive processing for later analysis. See PROTOCOL ANALYSIS.

**thinking** *n.* cognitive behavior in which ideas, images, MENTAL REPRESENTATIONS, or other hypothetical elements of thought are experienced or manipulated. In this sense, thinking includes imagining, remembering, problem solving, daydreaming, FREE ASSOCIATION, concept formation, and many other processes. Thinking may be said to have two defining characteristics: (a) It is covert—that is, it is not directly observable but must be inferred from actions or self-reports; and (b) it is symbolic—that is, it seems to involve operations on mental symbols or representations, the nature of which remains obscure and controversial (see SYMBOLIC PROCESS).

**thinking style** see COGNITIVE STYLE.

**thinking through** a typically multistage, multilayered thought process in which the individual attempts to understand and achieve insight into his or her own reactions, thought processes, or behavior, such as through consideration and analysis of cause and effect.

**thinking type** in the ANALYTIC PSYCHOLOGY of Carl JUNG, a FUNCTIONAL TYPE exemplified by the individual who evaluates information or ideas rationally and logically. The thinking type is one of Jung's two RATIONAL TYPES, the other being the FEELING TYPE. See also INTUITIVE TYPE; SENSATION TYPE.

**thinning** *n.* in conditioning, a gradual increase in the intermittency of reinforcement.

**thin slices of behavior** extremely small samples of behavior upon which people are able to base relatively accurate judgments about others. In research, thin slices are brief video or aural clips usually lasting from 1 second to 5 minutes, sampled from longer streams of behavior, from which raters are able to make better than chance accuracy judgments about the person being shown or heard. Such findings are thought to demonstrate humans' remarkable ability to process social information quickly, automatically, and efficiently, an ability that likely has evolutionary signif-

icance. Thin slices have been shown to have predictive validity in such areas as teacher evaluations, doctor–patient interactions, and dating. See PERSON PERCEPTION.

**thin stripes** thin bands of increased CYTOCHROME OXIDASE activity in the region of the prestriate cortex known as V2. The thin stripes receive input from the CYTOCHROME OXIDASE BLOBS of V1 and contain neurons from the PARVOCELLULAR SYSTEM that are sensitive to color.

**thiopental** *n.* an ultrashort-acting BARBITURATE used primarily as an anesthetic that can be administered intravenously to produce almost immediate loss of consciousness. It may also be used as an antidote for an overdose of stimulants or convulsants. At one time, it was occasionally used in psychotherapy to induce a state of relaxation and suggestibility. In nonmedical circles, it gained notoriety as a TRUTH SERUM. U.S. trade name: **Pentothal**.

**thioridazine** *n.* a low-potency antipsychotic of the piperidine PHENOTHIAZINE class that, like others of its class, causes sedation and significant anticholinergic effects. Adverse effects unique to thioridazine include the potential to cause retinal changes possibly leading to blindness (retinitis pigmentosa) at doses exceeding 800 mg per day. It can also cause severe disturbances in heart rhythm: Its ability to prolong the Q-T interval may cause fatal arrhythmias (see ELECTROCARDIOGRAPHIC EFFECT). It should not be taken by patients who have cardiac arrhythmias or who are taking other drugs that may prolong the Q-T interval. U.S. trade name: **Mellaril**.

**thioxanthene** *n.* any of a group of antipsychotic drugs, generally of intermediate potency, that resemble the PHENOTHIAZINES in pharmacological activity and molecular structure. Like the phenothiazines, they are associated with cardiovascular and anticholinergic side effects, as well as EXTRAPYRAMIDAL SYMPTOMS common to all dopamine-blocking agents. Their use has largely been supplanted by newer antipsychotics. Thioxanthenes include **thiothixene** (U.S. trade name: **Navane**), flupenthixol, and ZUCLOPENTHIXOL. Only thiothixene is currently available in the United States.

**third cranial nerve** see OCULOMOTOR NERVE.

**third moment** see MOMENT.

**third-party administrator (TPA)** in health insurance, a fiscal intermediary organization that provides administrative services, including claims processing and underwriting, for other parties (e.g., insurance companies, employers) but does not carry any insurance risk.

**third-party payer** an organization, usually an insurance company, prepayment plan, or government agency, that pays for the health expenses incurred by the insured. The third party (to the agreement) is distinguished from the first party, which is the individual receiving the services, and the second party, which is the individual or institution providing the services.

**third-person effect** a tendency for a person to expect that others will be more strongly influenced by (i.e., will respond to and take action as a result of) a persuasive communication in the mass media than he or she would be. The third-person effect has been studied extensively and is of particular interest in politics, social policy, and health psychology. It generally is explained in terms of a desire for self-enhancement: People are motivated to reinforce their positive self-images and thus are unrealistically optimistic in comparing themselves to others. Negative attitudes to-

ward the media generally (i.e., believing newspaper, television, and radio communications to be manipulative or otherwise deceitful) may also play a role. Also called **third-person perception**. [coined in 1983 by U.S. sociologist W. Phillips Davison (1918–2012)]

**third-person perspective** a public, external, and objective point of view on human behavior and experience. Compare FIRST-PERSON PERSPECTIVE; SECOND-PERSON PERSPECTIVE.

**third-person perspective memory** see OBSERVER MEMORY.

**third quartile** see QUARTILE.

**third variable** see HIDDEN VARIABLE.

**third-variable problem** the fact that an observed correlation between two variables may be due to the common correlation between each of the variables and a third variable rather than any underlying relationship (in a causal sense) of the two variables with each other. In other words, when two variables, *a* and *b*, are found to be positively or negatively correlated, it does not necessarily mean that one causes the other: It may be that changes in an unmeasured or unintended third variable, *c*, are causing a random and coincidental relationship between the two variables by independently changing *a* and *b*. For example, as the sales of air conditioners increase, the number of drownings also increases: The unintended third variable in this case would be the increase in heat. See HIDDEN VARIABLE.

**third ventricle** a cavity of the brain, filled with CEREBROSPINAL FLUID, that forms a cleft between the two lobes of the THALAMUS beneath the cerebral hemispheres. It communicates with the LATERAL VENTRICLES and caudally with the fourth ventricle through the CEREBRAL AQUEDUCT.

**thirst** *n.* the sensation caused by a need for increased fluid intake to maintain an optimum balance of water and electrolytes in body tissues. Water is lost from the body mainly in urine, through sweat, and via the lungs. Dehydration causes a reduced production of saliva and the feeling of a dry mouth. In addition, a specialized area of the hypothalamus in the brain detects and responds to the changes in OSMOTIC PRESSURE that result from increased concentration of electrolytes in extracellular fluid subsequent to water loss (see OSMORECEPTOR). See also HYPOVOLEMIC THIRST; OSMOMETRIC THIRST.

**Thomas S. class action** a class action lawsuit in North Carolina that recognized a special class of people in state psychiatric hospitals. Many class members had both mental retardation and severe and persistent or recurring mental illness (MR/MI). The court order required specific services and supports for those members. Although the class was dissolved in 1998, the case resulted in the establishment of a division that administers MR/MI services within the state-led agency for mental retardation services.

**Thomistic psychology** the psychological principles found in the writings of Thomas AQUINAS and revived in the early 20th century by a number of Roman Catholic thinkers. Aquinas emphasized ARISTOTELIAN logic, the compatibility of reason with faith, human free will, and the knowledge of God as ultimate happiness. See also SCHOLASTICISM.

**thoracic** *adj.* pertaining to the **thorax**—the portion of the mammalian body cavity bounded by the ribs, shoulders, and diaphragm—or to a structure contained within this

region, such as the thoracic vertebrae or the thoracic segments of the SPINAL CORD.

**thoracic nerve** see SPINAL NERVE.

**thoracolumbar system** a less common name for the SYMPATHETIC NERVOUS SYSTEM.

**Thorazine** *n.* a trade name for CHLORPROMAZINE.

**Thorndike–Lorge list** an early and influential list of word frequencies in the English language, compiled in 1944. There have been many subsequent updated lists, but this term is still sometimes used generically to mean an empirical list of word frequencies in a language. [Edward L. THORNDIKE and Irving D. Lorge (1905–1961), U.S. psychologists]

**Thorndike Puzzle Box** see PUZZLE BOX.

**thought** *n.* **1.** the process of THINKING. **2.** an idea, image, opinion, or other product of thinking. **3.** attention or consideration given to something or someone.

**thought–action fusion (TAF)** **1.** the belief that if one thinks about an unpleasant event or disturbing act, it is more likely to occur. **2.** the belief that thinking about an act is morally equivalent to carrying it out. TAF is often considered to be a feature particularly of OBSESSIVE-COMPULSIVE DISORDER. See also MAGICAL THINKING.

**thought avoidance** the evasion of unwanted mental events, typically those that are unpleasant or dissonant. Thought avoidance may function as a psychological DEFENSE MECHANISM as well as a means of therapeutic change.

**thought broadcasting** the delusion that one's thoughts are being disseminated throughout the environment (e.g., by means of television, radio, or other media) for all to hear.

**thought deprivation** see BLOCKING.

**thought derailment** disconnected thought processes, as manifested by a tendency to shift from one topic to another that is indirectly related or completely unrelated to the first. Thought derailment is a symptom of schizophrenia; the term is essentially equivalent to COGNITIVE DERAILMENT.

**thought disorder** a cognitive disturbance that affects communication, language, or thought content, including POVERTY OF IDEAS, NEOLOGISMS, PARALOGIA, WORD SALAD, and DELUSIONS. A thought disorder is considered by some to be the most important mark of schizophrenia (see also SCHIZOPHRENIC THINKING), but it is also associated with mood disorders, dementia, mania, and neurological diseases (among other conditions). Also called **thought disturbance**. See CONTENT-THOUGHT DISORDER; FORMAL THOUGHT DISORDER.

**thought echoing** see ÉCHO DES PENSÉES.

**thought experiment** a mental exercise in which a hypothesis or idea is put to the test without actually conducting an experiment or research project. The purpose is to explore the logical consequences of the hypothesis or idea. Thought experiments often involve arguments about events of a hypothetical or counterfactual nature, which nevertheless have implications for the actual world. They can be used to challenge the intellectual status quo, correct misinformation, identify flaws in an argument, or generate ideas as part of a problem-solving exercise. Thought experiments are most familiar in philosophy (e.g., CHINESE ROOM

ARGUMENT) but are also used in the physical sciences, generally as a step toward designing a physical experiment.

**thought insertion** a delusion in which the individual believes that thoughts have been irresistibly forced into his or her mind and ascribes these thoughts to outside sources.

**thought intrusion** see INTRUSIVE THOUGHTS.

**thought monitoring** the process of tracking and noticing one's own thoughts.

**thought obstruction** see BLOCKING.

**thought pressure** see PRESSURE OF IDEAS.

**thought process** any of the COGNITIVE PROCESSES involved in such mental activities as reasoning, remembering, imagining, problem solving, and making judgments. See THINKING. See also HIGHER MENTAL PROCESS; MEDIATION PROCESS; SYMBOLIC PROCESS.

**thought record** a common COGNITIVE RESTRUCTURING tool used to help individuals identify and change negative, unrealistic, and maladaptive thinking. Individuals record events that triggered distress, list any AUTOMATIC THOUGHTS that were elicited by each event, and cite evidence to support or disprove these thoughts. They then use their evaluation of the evidence to form more balanced, realistic, or objective thoughts. Thought records can be used during therapy sessions to recall past events or as SELF-MONITORING homework. [introduced by Aaron T. BECK]

**thought reform** see COERCIVE PERSUASION.

**thought sampling** typically, the making of audio recordings or written notes on the stream of one's thoughts, feelings, and so forth for therapeutic or scientific purposes.

**thought stopping** the skill of using a physical or cognitive cue to stop negative thoughts and redirect them to a neutral or positive orientation. This skill is taught in some behavior therapies, when the therapist shouts "Stop!" to interrupt a trend toward undesirable thoughts and trains clients to apply this technique to themselves.

**thought suppression** the attempt to control the content of one's mental processes and specifically to rid oneself of undesired thoughts or images. Ironically, engaging in thought suppression often only serves to make the unwanted thoughts more intrusive.

**thought transference** a supposed phenomenon in which the mental activities of one person are transmitted without physical means to the mind of another person. With MIND READING, it is one of the two main forms of TELEPATHY.

**thought withdrawal** the delusion that one's thoughts are being removed from one's mind by other people or forces outside oneself.

**threat** *n.* **1.** a condition that is appraised as a danger to one's self or well-being or to a group. **2.** an indication of unpleasant consequences that is used as a means of coercion for failure to comply with a given request or demand. **3.** any event, information, or feedback that is perceived as conveying negative information about the self. —**threaten** *vb.* —**threatening** *adj.*

**threat appraisal** the cognitive and emotional processes involved in assessing the potentiality and level of threat.

**threat display** any of various ritualized communication signals used by nonhuman animals to indicate that attack or aggression might follow. Examples are fluffed-out fur or

feathers, certain facial expressions or body postures, and low-frequency vocalizations (e.g., growls). Animals faced with a threat display can submit or flee before an attack begins. The use of ritualized threat displays can minimize direct physical aggression to the benefit of both individuals.

**threat to self-esteem model** the idea that help from another may be perceived as a threat to one's self because it implies that one is incapable or inferior. In these circumstances, the recipient of help may respond negatively to it. [proposed in 1986 by psychologists Arie Nadler and Jeffrey D. Fisher]

**three-burst pattern** see TRIPHASIC PATTERN.

**three-component theory** see TRICHROMATIC THEORY.

**360-degree feedback system** a procedure for evaluating JOB PERFORMANCE and providing feedback to employees. It involves asking supervisors, peers, subordinates, and clients of an employee, as well as the employee, to evaluate the employee's performance. A comparison of the employee's self-rating with the ratings of the others is then provided as feedback. Also called **360-degree appraisal system**; **360-degree evaluation**.

**three-mountains test** a PIAGETIAN TASK used to assess visual perspective taking in children. A doll is placed at various locations around a three-dimensional display of three mountains, and children must indicate how the doll sees the display. Children younger than 8 years old have difficulty performing this test correctly, although they are able to understand that others have a visual perspective that is different from their own when less complicated tasks are used.

**three-parameter model** in ITEM RESPONSE THEORY, a model that specifies three parameters affecting an individual's response to a particular test item: (a) the difficulty level of the item; (b) the DISCRIMINATING POWER of the item; and (c) in multiple-choice items, the effect of guessing. The probability of a correct response to the item is held to be a mathematical function of these parameters.

**three-stage model** see INFORMATION-PROCESSING MODEL.

**three-stage sampling** see MULTISTAGE SAMPLING.

**three-stage theory** the view that skill acquisition (e.g., of motor skills) proceeds through three stages that progressively require less attention and become more automatic. According to U.S. psychologists Paul Morris Fitts (1912–1965) and Michael I. Posner (1936– ), the stages are cognitive (understanding what needs to be done and how to do it), associative (improvement through practice and feedback), and autonomous (automatic performance). See also MOTOR LEARNING; SKILL LEARNING.

**three-stratum model of intelligence** a psychometric model of intelligence based on a factorial reanalysis of several hundred data sets available in the literature. It is considered by some researchers to be the most thoroughly supported of the various PSYCHOMETRIC THEORIES OF INTELLIGENCE. The three strata correspond to (a) minor group factors at the first (lowest) level; (b) major group factors at the second level (fluid intelligence, crystallized intelligence, general memory and learning, broad visual perception, broad auditory perception, broad retrieval ability, broad cognitive speediness, and processing speed); and (c) the general factor at the third (highest) level. [proposed in the 1990s by U.S. psychologist John B. Carroll (1916–2003)]

**three-term contingency** specification of the stimulus

circumstances, the response, and the outcome in a REINFORCEMENT CONTINGENCY. It is formulated as  $S^D:R \rightarrow S^R$  or denoted ABC (for antecedent, behavior, and consequence).

**three-way analysis of variance** an ANALYSIS OF VARIANCE that isolates the MAIN EFFECTS of three independent variables,  $a$ ,  $b$ , and  $c$ , on a dependent variable and their INTERACTION EFFECTS—one three-way interaction,  $a \times b \times c$ , and three two-way interactions,  $a \times b$ ,  $a \times c$ , and  $b \times c$ .

**three-way design** an experimental design in which three independent variables are examined simultaneously to observe their separate MAIN EFFECTS and their joint INTERACTION EFFECTS on a dependent variable of interest. Data from such designs often are evaluated with a THREE-WAY ANALYSIS OF VARIANCE.

**three-way interaction** in a THREE-WAY ANALYSIS OF VARIANCE, the joint effect of all three independent variables,  $a$ ,  $b$ , and  $c$ , on a dependent variable. A statistically significant three-way interaction indicates that one or more of the three possible two-way interactions ( $a \times b$ ,  $a \times c$ , and  $b \times c$ ) differ across the levels of a third variable. For example, the  $a \times b$  interaction may differ for one level of  $c$  compared to another level of  $c$ . A three-way interaction is a type of HIGHER ORDER INTERACTION.

**threshold** *n.* 1. in psychophysics, the magnitude of a stimulus that will lead to its detection 50% of the time. 2. the minimum intensity of a stimulus that is necessary to evoke a response. For example, an AUDITORY THRESHOLD is the slightest perceptible sound; an excitatory threshold is the minimum stimulus intensity that triggers an ACTION POTENTIAL in a neuron; and a renal threshold is the concentration of a substance in the blood required before the excess is excreted. Also called **limen**; **response threshold**. See also ABSOLUTE THRESHOLD; DIFFERENCE THRESHOLD.

**threshold effect** an effect in a dependent variable that does not occur until a certain level, or threshold, is reached in an independent variable. For example, a drug may have no effect at all until a certain dosage level (the threshold value) is reached. The change in the dependent variable can be an irreversible dichotomous change (e.g., from functional to not functional), or it can be continuous, such that the dependent variable changes each time the independent variable crosses the threshold in either direction.

**threshold model** any model specifying that there is a value within a range of values for an independent variable at which the dependent variable (e.g., the behavior or action of a participant) changes from one state (e.g., unwilling to buy a product) to another (e.g., willing to buy the product).

**threshold of consciousness** the minimum above which stimuli enter awareness, characterized in terms of stimulus intensity, duration, and relevance. The threshold concept has been applied to memory and mood as well as to sensory stimulation.

**threshold shift** a change in threshold as a result of a change in such variables as level of adaptation or context.

**threshold theory** the hypothesis in GROUP DYNAMICS that conflict is beneficial provided it does not exceed the tolerance threshold of the group members for too long. [developed by U.S. communication theorist Ernest G. Bormann (1925–2008)]

**threshold traits analysis (TTA)** in personnel selection, a method of identifying the traits required for acceptable performance in a given position. Subject-matter

experts (usually supervisors or current holders of a position) rate the importance, uniqueness, relevance, level, and practicality of 33 traits for a particular position. [proposed by industrial and organizational psychologist Felix Manuel Lopez (1917– )]

**thrombosis** *n.* the presence or formation of a blood clot (THROMBUS) in a blood vessel, including vessels in the heart (**coronary thrombosis**). Thrombosis is likely to develop where blood flow is impeded by disease, injury, or a foreign substance. Formation of a blood clot in a vein is called **venous thrombosis** (see DEEP VEIN THROMBOSIS). A thrombosis in the brain (**cerebral thrombosis**) can cause a THROMBOTIC STROKE or CEREBROVASCULAR ACCIDENT. See also AUDITORY THROMBOSIS. —**thrombotic** *adj.*

**thrombotic stroke** the most common type of stroke, occurring when blood flow to the brain is blocked by a cerebral THROMBOSIS. A thrombotic stroke typically results from the narrowing and eventual occlusion of a large blood vessel in the brain, especially the carotid or middle cerebral artery, by ATHEROSCLEROSIS.

**thrombus** *n.* a blood clot that forms in a blood vessel (see THROMBOSIS). A thrombus that becomes detached from its point of origin and is carried in the blood to obstruct another site is called an **embolus** (see EMBOLISM).

**thumb opposition** the ability to coordinate the thumb and forefinger in PINCH GRIP movements. Thumb opposition begins to develop around the 3rd or 4th month of infancy, although it is not fully achieved until the second half of the 1st year, as eye–hand coordination grows more skillful.

**thumb sucking** a common habit among infants and young children, formerly classified as a habit disturbance when persisting beyond 3 or 4 years. It is often explained as a basic sucking impulse from which the child derives pleasure as well as comfort and relaxation.

**Thurstone attitude scales** a DIRECT ATTITUDE MEASURE that involves generating a large set of statements designed to reflect varying levels of negativity or positivity toward an ATTITUDE OBJECT. A group of judges are then asked to rate how positive or negative each statement is, usually on a 9- or 11-point scale. The central tendency and dispersion of the judges' ratings for each statement are computed, and a set of statements with low dispersions is selected. This set contains two statements reflecting each of the scale points on the rating scale (i.e., two statements having an average rating of 1, two statements having an average rating of 2, and so on) and makes up the final attitude scale. When the scale is administered, respondents are instructed to indicate which statements they endorse, and their attitude score is the median of the scale values for these statements. See also LIKERT SCALE; SEMANTIC DIFFERENTIAL. [Louis L. THURSTONE]

**thymine** (symbol: T) *n.* a pyrimidine compound in the nucleotides of living organisms. It is one of the four bases in DNA that constitute the GENETIC CODE, the others being adenine, cytosine, and guanine. In RNA, uracil replaces thymine.

**thymus** *n.* an organ, located in the lower neck region, that is part of the IMMUNE SYSTEM. The thymus reaches maximum size at puberty, then shrinks. During infancy, it is the site of formation of T LYMPHOCYTES.

**thyro-** *combining form* of or relating to the thyroid gland.

**thyroid gland** an endocrine gland forming a shieldlike

structure on the front and sides of the throat, just below the thyroid cartilage. It produces the iodine-containing THYROID HORMONES (thyroxine and triiodothyronine) in response to THYROID-STIMULATING HORMONE from the anterior pituitary gland. C cells (parafollicular cells) in the thyroid produce the hormone CALCITONIN, which controls levels of calcium and phosphate in the blood.

**thyroid hormone** any of the hormones synthesized and released by the THYROID GLAND. The primary thyroid hormone, THYROXINE (T<sub>4</sub>), is metabolized to TRIIODOTHYRONINE (T<sub>3</sub>) within target tissues. Plasma levels of T<sub>4</sub> are much higher than those of T<sub>3</sub>, but T<sub>3</sub> has the more potent physiological activity. Both hormones play a central role in regulating basic metabolic processes and the early development of the brain, and their excess secretion has major effects on functioning (see CONGENITAL HYPOTHYROIDISM; MYXEDEMA; THYROTOXICOSIS). CALCITONIN, a hormone released by parafollicular cells of the thyroid gland, plays a crucial role in calcium and phosphate metabolism.

**thyroid-stimulating hormone (TSH)** a hormone produced by the anterior PITUITARY GLAND that stimulates production and release of thyroxine and triiodothyronine from the THYROID GLAND. Its secretion is controlled by THYROTROPIN-RELEASING HORMONE from the hypothalamus. Injections of TSH are used in the differential diagnosis of disorders of the thyroid gland. Also called **thyrotropic hormone**; **thyrotropin**.

**thyroplasty** *n.* any surgical procedure performed on the cartilages of the LARYNX to alter the length or position of the VOCAL CORDS in order to improve voice and sound production. Also called **laryngeal framework surgery**.

**thyrotoxicosis** *n.* a condition caused by an excess of THYROID HORMONES, which may be produced by an overactive thyroid gland or administered therapeutically. **Endogenous thyrotoxicosis** may be familial and can involve an autoimmune reaction in which the patient's antibodies stimulate rather than destroy the cells producing thyroid hormone. Thyrotoxicosis is characterized by nervousness, tremor, palpitation, weakness, heat sensitivity with sweating, and increased appetite with weight loss. There may be EXOPHTHALMOS associated with GOITER. Thyrotoxicosis is frequently associated with HYPERTPLASIA (enlargement) of the thyroid gland, as in GRAVES' DISEASE, or the development of thyroid nodules (**Plummer's disease**), which occurs in older people. See also HYPERTHYROIDISM.

**thyrotropin** *n.* see THYROID-STIMULATING HORMONE.

**thyrotropin-releasing hormone (TRH)** a hormone produced by the HYPOTHALAMUS that regulates the release of THYROID-STIMULATING HORMONE.

**thyroxine (T<sub>4</sub>)** *n.* an iodine-containing hormone produced by the thyroid gland. It is the principal THYROID HORMONE, and it helps regulate metabolism by controlling oxidation rate in cells. See also TRIIODOTHYRONINE.

**TIA** abbreviation for TRANSIENT ISCHEMIC ATTACK.

**tianeptine** *n.* a novel antidepressant compound with a modified tricyclic structure thought to act by increasing BRAIN-DERIVED NEUROTROPHIC FACTOR via glutamatergic mechanisms, which in turn decreases serotonin neurotransmission. Its efficacy compares favorably to currently used antidepressants. French trade name: **Stablon**.

**tic** *n.* a sudden, involuntary vocalization (**vocal tic**) or contraction of a small group of muscles (**motor tic**) that is recurrent and nonrhythmic. Tics may be simple (e.g., eye

blinking, shoulder shrugging, grimacing, throat clearing, grunting, yelping) or complex (e.g., hand gestures, touching, jumping, ECHOLALIA, COPROLALIA). They may be psychogenic in origin, or they may occur as an adverse effect of a medication or other substance or result from a head injury, neurological disorder, or general medical condition.

**tic disorder** any one of a group of disorders characterized by the occurrence many times a day of motor tics, vocal tics, or both that is not due to a general medical condition or the effects of a medication. The group includes TOURETTE'S DISORDER, CHRONIC MOTOR OR VOCAL TIC DISORDER, and TRANSIENT TIC DISORDER.

**tic douloureux** see TRIGEMINAL NEURALGIA.

**tickle experience** a sensation produced by impulses from adjacent skin receptors that are stimulated lightly in rapid succession. It is assumed that the receptors involved are also responsible for the sensations of itch and pain and that the method of stimulation accounts for the different sensations.

**tight culture** a homogeneous social group whose members have the same cultural attributes (e.g., language, social customs, religion) and tend toward a rigid adherence to the collective norms of their group. Compare LOOSE CULTURE. [defined by Greek-born U.S. psychologist Harry C. Triandis (1926– )]

**tightrope test** a test of the ability of rats to maintain their balance while climbing a sloping wire in order to obtain food.

**tigroid bodies** see NISSL BODIES.

**tilt aftereffect (TAE)** see AFTEREFFECT.

**timbre** *n.* the perceptual attribute relating to the quality of a sound. Two perceptually different sounds with the same pitch and loudness differ in their timbre. Timbre is determined primarily by the SOUND SPECTRUM but also is affected by temporal and intensive characteristics. Also called **tone color**. —**timbral** *adj.*

**time** *n.* a concept by which events are ordered into past, present, and future. Through the observation of recurrent phenomena, such as the rotation of the earth, time is divided into periods and used to measure the duration of events and rates of change. Time appears to be so abstract, and at the same time so fundamental, that no universally satisfactory definition has been formulated. It is a matter of debate whether time is a construct arising from humanity's marking of change or some sort of medium through which change occurs. Although classical mechanics regarded time as absolute, the special theory of relativity maintains that time is relative to motion. Philosophers have also differed over whether time is absolute or relative to particular perspectives and conditions.

**time agnosia** an inability to perceive the passage of time, usually due to a disorder involving the temporal area of the brain. Individuals are unable to estimate short time intervals and believe long periods of time to be much shorter than they actually are. Their awareness of the existence of time, however, is retained. Causes may include a stroke, alcoholic coma, or a head injury; soldiers have experienced time agnosia after a combat trauma.

**time and motion study** an analysis of industrial operations or other complex tasks into their component steps, observing the time required for each. Common in the early years of SCIENTIFIC MANAGEMENT, such studies may serve a

number of different purposes, enabling an employer to set performance targets, increase productivity, rationalize pay rates and pricing policy, reduce employee fatigue, and prevent accidents. Also called **motion and time study**. See also THERBLIG. [devised by U.S. engineer and efficiency expert Frank B. Gilbreth (1868–1924) and Lillian Moller GILBRETH]

**time and rhythm disorders** speech and language problems related to the timing of sounds and syllables, including repetitions, prolongations, and stuttering. The disorders are often functional and may be complicated by stress. They may be treated with a combination of psychotherapy and speech therapy, using such techniques as cancellation (interrupted stuttering), voluntary stuttering, or rewarding or reinforcing fluent speech.

**time-compressed speech** words and phrases presented to the ear with small elements removed, which has the effect of increasing the rate of presentation. Time-compressed speech is used to measure auditory perceptual abilities. Also called **time-altered speech**. See also DISTORTED SPEECH TEST.

**time discounting** giving less weight or importance to future events than to present events, often in connection with the utility values associated with these events.

**time distortion** a type of perceptual transformation, sometimes experienced in altered states of consciousness, in which time appears to pass either with great rapidity or with extreme slowness. Perception of past and future may also be transformed.

**timed test** any test in which the participant's speed contributes to the final score.

**time error** in psychophysics, a misjudgment due to the relative position of stimuli in time. For example, the first of two identical tones sounded consecutively tends to be judged as louder than the second.

**time estimation** the ability to monitor elapsed time. In operant conditioning studies using FIXED-INTERVAL SCHEDULES, nonhuman animals can estimate the time between one reward and the occurrence of the next reward. In nature, time estimation is important for finding prey that emerge at a fixed time of day or season and is essential for navigation when sun or star cues are used (see SUN COMPASS).

**time-extended therapy** a form of GROUP THERAPY in which prolonged sessions replace or alternate with sessions of normal length. The experience is usually highly emotional and revealing because the participants become fatigued and have insufficient energy for defensive games. See also MARATHON GROUP.

**time-lag design** a type of QUASI-EXPERIMENTAL RESEARCH in which participants of the same age are compared at different time periods. It is typically used in developmental, educational, and social psychological contexts to study whether there are differences in a given characteristic for samples of equal age but drawn from different cohorts measured at different times. For example, a time-lag study of intelligence might compare a group of people who were 20 years old in 2005 with groups who were 20 years old in 2006, 2007, and 2008. Time-lag designs have the benefit of controlling for time-of-testing effects. However, there are drawbacks of low INTERNAL VALIDITY and difficulty in separating COHORT EFFECTS from AGE EFFECTS.

**time-lagged correlation** the correlation of a measure

at one point in time with the value of that same measure at a different point in time. An example is the correlation of IQ scores of individuals when they are 5 years old with their IQ scores when they are 10 years old. See STABILITY COEFFICIENT.

**timeless moment 1.** the infinitely small dimension of the present instant as conceptualized by traditional linear time. See PSYCHOLOGICAL MOMENT; SPECIOUS PRESENT. **2.** an experience in which one's normal awareness of time dissolves and one feels a sense of holistic involvement with another person or thing or with the universe as a whole. Such PEAK EXPERIENCES are of particular interest in HUMANISTIC PSYCHOLOGY. See BEING COGNITION.

**time-limited day treatment** an outpatient all-day therapeutic community approach used with clients diagnosed with personality disorders that capitalizes on the positive attributes of the clients as a group. [developed by Canadian psychologist William E. Piper (1945– )]

**time-limited psychotherapy (TLP)** therapy that is limited to a predetermined number of sessions over a specified period of time. See also BRIEF PSYCHOTHERAPY.

**time–location sampling** a method of finding research participants in which members of a hard-to-reach target population (e.g., homeless people, migrant workers) are recruited from specific locations at which they may be found during specific time periods. The sample is selected in stages: (a) the SAMPLING FRAME is determined, comprising all of the locations at which there is sufficient attendance by persons in the population of interest to make sampling worthwhile; (b) a random sample of locations is chosen from this frame; and (c) a sample of participants is chosen, usually randomly, during each sampling event. Also called **venue sampling**.

**time-of-measurement effect** an effect that is due to the social and historical influences present at the time a measurement is made. These effects are difficult to separate from AGE EFFECTS in longitudinal designs.

**time out (TO) 1.** a technique, originating from BEHAVIOR THERAPY, in which undesirable behavior is weakened and its occurrence decreased, typically by moving the individual away from the area that is reinforcing the behavior. The technique is used by teachers in schools and by parents to decrease undesirable behavior in a child. Also called **time out from reinforcement**. **2.** in OPERANT CONDITIONING, a time interval during which a behavior does not occur. A time-out procedure may be used to eliminate the stimulus effects of earlier behaviors or as a marker in a series of events.

**time-out theory** a theory to explain the positive effect of exercise as a stress-management technique. It proposes that when exercising, the individual is taking a time out from the real world and its stress inducers, thereby allowing the body to shut down the physical and mental manifestations of stress.

**time sampling** in DIRECT OBSERVATION, a data collection strategy that involves noting and recording the occurrence of a target behavior whenever it is seen during a stated time interval. The process may involve fixed time periods (e.g., every 5 minutes) or random time intervals. For example, a researcher may observe a group of children for 10 seconds every 5 minutes for a specific 30-minute period each day, noting the occurrence or nonoccurrence of particular behaviors (overt actions). Observations taken dur-

ing these periods are known as **time samples**. An individual score is assigned on the basis of one or more of the following: (a) the number of time units in which the defined behavior occurs, (b) the total frequency of occurrence of the defined behavior in the total observational time, and (c) the average frequency of the defined behavior per unit of time. See PARTIAL-INTERVAL RECORDING; WHOLE-INTERVAL RECORDING.

**time score** a score based on the amount of time used to complete a particular task. An example is the number of minutes a 3-year-old child requires to solve a simple puzzle.

**time sense** the ability to estimate time intervals or the time of day without information from clocks. Numerous external and internal stimuli contribute to a sense of time, including the position of the sun in the sky, regular daily events (e.g., mealtimes, school classes), and internal body rhythms (see BIOLOGICAL CLOCK). However, one's estimation of the passage of time can be influenced and distorted by many factors (see PSYCHOLOGICAL TIME).

**time-sequential design** an experimental design to separate AGE EFFECTS from time-of-measurement and COHORT EFFECTS (i.e., to determine if the results obtained are age-related only). In a time-sequential design, a second age group is added to a TIME-LAG DESIGN, and two or more cross-sectional comparisons are made at different times of testing.

**time series** a set of measures on a single attribute, variable, or construct obtained repeatedly over time.

**time-series analysis** a branch of statistics that involves the analysis of changes in a single variable recorded repeatedly over time. The data may have an internal structure (e.g., AUTOCORRELATION, trend, seasonal variation) that should be accounted for and that provides input allowing for the prediction of future values of the variable. Compare CROSS-SECTIONAL ANALYSIS.

**time-series design** an experimental design that involves the observation of units (e.g., people, countries) over a defined time period. Data collected from such designs may be evaluated with TIME-SERIES ANALYSIS.

**time sharing** the process of rapidly switching attention from one task to another when two or more tasks are performed concurrently. An individual's time-sharing ability can be used to predict his or her performance in complex tasks.

**time–space synesthesia** see SYNESTHESIA.

**timidity** *n.* **1.** the tendency to take great caution in approaching a perceived risk or to avoid the risk altogether. **2.** see SHYNESS. —**timid** *adj.*

**timing-of-events model** a paradigm that describes adult psychosocial development as influenced by the expected or unexpected occurrence and timing of particular life events. See OFF-TIME LIFE EVENTS; ON-TIME LIFE EVENTS. [initially described in the 1950s by Bernice Levin NEUGARTEN]

**tinnitus** *n.* noises in one or both ears, including ringing, buzzing, or clicking, due to acute ear problems, such as MÉNIÈRE'S DISEASE, disturbances in the receptor mechanism, side effects of drugs (especially tricyclic antidepressants), or epileptic aura. Occasionally, tinnitus is due to psychogenic factors (see SENSORY CONVERSION SYMPTOMS).

**tip node** see GRAPH.

**tip-of-the-tongue phenomenon (TOT phenomenon)** the experience of attempting to retrieve from memory a specific name or word but not being able to do so. Usually, the name or word is eventually retrieved, but while on the TOT, it seems to hover tantalizingly on the rim of consciousness. See also FEELING OF KNOWING; RETRIEVAL BLOCK.

**tissue** *n.* a structure composed of identical or similar cells with the same or similar function, as in ADIPOSE TISSUE, erectile tissue, or muscle tissue.

**tissue damage** injury to body tissue causing impairment of function, such as nerve damage in multiple sclerosis or damage caused by radiation. Tissue damage is a common cause of pain. Cuts, pinpricks, or other painful experiences are accompanied by the release of HISTAMINE or other substances known to excite pain receptors.

**Titchener circles** see EBBINGHAUS ILLUSION. [Edward Bradford TITCHENER]

**tit-for-tat strategy (TFT strategy)** a bargaining method in which a party initially cooperates with another party but thereafter imitates the other party's behavior: Cooperation is met with cooperation, competition with competition.

**titration** *n.* a technique used in determining the optimum dose of a drug needed to produce a desired effect in a particular individual. The dosage may be either gradually increased until a noticeable improvement is observed in the patient or adjusted downward from a level that is obviously excessive because of unwanted adverse effects or toxicity. To avoid unpleasant side effects when starting pharmacotherapy, some drugs must be slowly titrated upward to a therapeutic dose. Likewise, many drugs should be slowly titrated downward upon cessation of therapy both to avoid discontinuation side effects and to monitor for the recurrence of symptoms. See TAPERING.

**TLP** abbreviation for TIME-LIMITED PSYCHOTHERAPY.

**T lymphocyte** see LYMPHOCYTE.

**TM** abbreviation for TRANSCENDENTAL MEDITATION.

**TMA 1.** abbreviation for TRANSCORTICAL MOTOR APHASIA.  
**2.** abbreviation for TRIMETHOXYAMPHETAMINE.

**T maze** a maze shaped like the letter T, consisting of a start box and a stem that leads to a choice between left and right arms, one being incorrect and the other leading to the goal box. More complicated mazes can be formed by joining several T mazes in sequence. A variant of this apparatus is the Y MAZE; both are used in experiments on animal cognition.

**TMI** abbreviation for TRANSMARGINAL INHIBITION.

**TMJ syndrome** a disorder of muscles operating the lower jaw at the temporomandibular joint (TMJ) just in front of the ear. The condition—which may be due to tension or stress, arthritis, dislocation or other injury, or a tumor—is often marked by facial pain, limited jaw movement, and clicking of the jaw during movement.

**TMS** abbreviation for TRANSCRANIAL MAGNETIC STIMULATION.

**TMTF** abbreviation for TEMPORAL MODULATION TRANSFER FUNCTION.

**TO** abbreviation for TIME OUT.

**tobacco** *n.* the dried leaves of the plant *Nicotiana tabacum*

and other *Nicotiana* species (native to tropical America), which are smoked, chewed, or sniffed for their stimulant effects. The main active ingredient is NICOTINE. The leaves also contain volatile oils, which give tobacco its characteristic odor and flavor. Tobacco was used by the native tribes of North and South America when the first European explorers arrived and was quickly transplanted to gardens and plantations throughout the world. It has no therapeutic value but is of great commercial and medical importance because of its widespread use and associated detrimental cardiovascular, pulmonary, and carcinogenic effects. Indeed, smoking tobacco cigarettes was first identified by the U.S. Surgeon General in the 1960s as a major preventable cause of death and disability.

**tobacco dependence** an informal name for NICOTINE DEPENDENCE.

**tobacco use disorder** see NICOTINE DEPENDENCE.

**tobacco withdrawal** see NICOTINE WITHDRAWAL.

**to-be-remembered items (TBR items)** in experiments on memory, the specific items presented to the participant for recall, such as a list of letters, numerals, or words.

**Tobit analysis** a type of REGRESSION ANALYSIS used when a DEPENDENT VARIABLE with values above or below a certain threshold takes on the value of that threshold; that is, the exact value of the variable is unknown or ignored (see CENSORED DATA). For example, in an analysis of aptitude in college students, the dependent variable could be a score on a standardized aptitude test that has an upper limit of 500 (the threshold value). Students who answer all questions on the test correctly receive a score of 500, even though these students may not have equal aptitude. In such a case, the influence of INDEPENDENT VARIABLES, such as reading and math scores, on the dependent variable of academic aptitude is more appropriately studied with Tobit regression analysis than with ordinary LEAST SQUARES REGRESSION because the threshold values would bias the slope of the obtained REGRESSION LINE. Also called **censored regression**; **Tobit model**. [named by analogy with PROBIT ANALYSIS, after James Tobin (1918–2002), U.S. economist]

**toe drop** a loss of muscular control of the toes. It is a sign of the onset of CHARCOT–MARIE–TOOTH DISEASE, in which the peripheral nerves of the extremities gradually degenerate and cease transmitting impulses. Toe drop progresses to FOOT DROP.

**Tofranil** *n.* a trade name for IMIPRAMINE.

**toilet training** the process of teaching a child to control the emptying of the bowel and bladder by learned inhibition of natural reflexes and to excrete in the appropriate place and manner. Although defecation and urination involve functions of the autonomic nervous system, toilet training conditions the individual to override the reflex action with voluntary nerve control. See DEFECATION REFLEX; MICTURITION REFLEX. See also ENCOPRESIS; ENURESIS.

**token economy** in BEHAVIOR THERAPY, a program, sometimes conducted in an institutional setting (e.g., a hospital or classroom), in which desired behavior is reinforced by offering tokens that can be exchanged for special foods, television time, passes, or other rewards. See also BACKUP REINFORCER; BEHAVIOR MODIFICATION; OPERANT CONDITIONING THERAPY.

**token identity theory** see IDENTITY THEORY.



**tokenism** *n.* the making of a perfunctory or symbolic gesture that suggests commitment to a practice or standard, particularly by hiring or promoting a single member of a previously excluded group to demonstrate one's benevolent intentions. For example, an all-White company may hire a token Black employee to give the appearance of organizational parity as opposed to actually eliminating racial inequality in the workplace. Tokenism depends on the prevailing norms, structures, and conceptualizations (e.g., of ideal INGROUP and OUTGROUP members) of the cultural context in which it is embedded.

**token reinforcer** an object that has no inherent reinforcing value in itself but that can be exchanged for a REINFORCER. The best known example is money. Also called **token reward**.

**Token Test** a test of auditory language processing in which participants are asked to manipulate tokens of different shapes, sizes, and colors in response to increasingly complex instructions. The Token Test is used to identify and evaluate receptive language dysfunction associated with APHASIA. [originally developed in 1962 by Italian neuropsychologists Ennio De Renzi and Luigi A. Vignolo]

**tolerance** *n.* **1.** a condition, resulting from persistent use of a drug, characterized by a markedly diminished effect with regular use of the same dose of the drug or by a need to increase the dose markedly over time to achieve the same desired effect. Tolerance is one of the two prime indications of PHYSICAL DEPENDENCE on a drug, the other being a characteristic withdrawal syndrome (see SUBSTANCE WITHDRAWAL). Development of drug tolerance involves several mechanisms, including pharmacological ones (i.e., metabolic tolerance and PHARMACODYNAMIC TOLERANCE) and a behavioral one (i.e., a behavioral conditioning process). Also called **drug tolerance**. See SUBSTANCE DEPENDENCE. **2.** acceptance of others whose actions, beliefs, physical capabilities, religion, customs, ethnicity, nationality, and so on differ from one's own. **3.** a fair and objective attitude toward points of view different from one's own. **4.** permissible or allowable deviation from a specified value or standard. —**tolerant** *adj.*

**tolerance interval** a range of values within which, with some probability, a specified proportion of a population falls. For instance, a researcher may be 95% confident that 90% of the population of interest in a particular study will fall within the range specified by the tolerance interval. It differs from a CONFIDENCE INTERVAL, which bounds a single population parameter (e.g., the mean or variance).

**tolerance limit** the uppermost or lowermost value of a TOLERANCE INTERVAL.

**toloache** *n.* a plant, *Datura innoxia*, belonging to the nightshade family and closely related to JIMSONWEED, that contains numerous alkaloids with powerful ANTICHOLINERGIC EFFECTS. The plant has been used by indigenous peoples of North and Central America in religious ceremonies and adolescent rituals.

**toluene** *n.* a volatile solvent that, when chronically inhaled, can cause kidney failure and death. See INHALANT.

**Tolvon** *n.* a trade name for MIANSERIN.

**tomato effect** the rejection of an effective treatment because it does not fit an established medical model or because it does not make sense in light of currently accepted medical theories. It has been applied to BIOFEEDBACK training. The tomato effect is so named because in America the

tomato—known to be a member of the nightshade family—was originally thought to be poisonous; for this reason, tomatoes were not consumed in America until 1820, even though Europeans had been eating them for generations without harm.

**tomboyism** *n.* the tendency of girls to adopt behavior traditionally associated with boys. See also ROLE CONFUSION; SISSY BEHAVIOR. —**tomboy** *n.*

**tomography** *n.* a technique for revealing the detailed structure of a tissue or organ through a particular plane that involves the compilation of a series of images taken from multiple perspectives. Examples include COMPUTED TOMOGRAPHY and POSITRON EMISSION TOMOGRAPHY. —**tomographic** *adj.*

**tomomania** *n.* a compulsive urge to undergo surgery. See also MÜNCHAUSEN SYNDROME.

**-tomy (-otomy)** *suffix* surgical cutting (e.g., LOBOTOMY). See also -ECTOMY.

**ton-** *combining form* see TONO-.

**tonal attribute** a perceptual characteristic of a sound. The primary tonal attributes are PITCH, LOUDNESS, and TIMBRE.

**tonal chroma** see TONALITY.

**tonal fusion** the blending of two or more tones into a single tonal experience.

**tonal gap** a range of pitches to which a person may be partially or totally insensitive (**island deafness**), although the individual is able to perceive tones on either side of the gap.

**tonal island** a region of normal pitch acuity surrounded by TONAL GAPS.

**tonality** *n.* the musical PITCH of a sound. Also called **tonal chroma**.

**tonal language** see TONE.

**tonal sensation** an auditory sensation that produces PITCH. The term is sometimes loosely used to describe any auditory sensation.

**tonal spectrum** see SOUND SPECTRUM.

**tonal volume** the extensity or space-filling quality of a sound.

**tone** *n.* **1.** a PURE TONE. **2.** a sound that has PITCH. **3.** in linguistics, a phonetic variable along the dimension of pitch. In a **tonal language**, such as Mandarin or Thai, tone has a phonemic function (see PHONEME) in that differences in tone are sufficient to mark a distinction between words that are otherwise pronounced identically. In English, tone is an important SUPRASEGMENTAL feature of speech, with different patterns of **intonation** serving to distinguish different types of utterance, such as statements and questions. —**tonal** *adj.*

**tone color** see TIMBRE.

**tone deafness** inability to distinguish differences in pitch. Also called **asonia**.

**tongue kiss** see FRENCH KISS.

**tongue tie** see ANKYLOGLOSSIA.

**TONI** abbreviation for TEST OF NONVERBAL INTELLIGENCE.

**tonic** *adj.* of or relating to muscle tone, especially a state

of continuous muscle tension or contraction, which may be normal (see **TONUS**) or abnormal. For example, a tonic phase of facial muscles prevents the lower jaw from falling open, a normal function. Abnormally, in the tonic phase of a **TONIC-CLONIC SEIZURE**, the muscles controlling respiration may undergo spasm, resulting in a temporary suspension of breathing.

**tonic activation** a form of arousal mediated by the RETICULAR FORMATION and identified as tonic because of its persistent effect. Compare **PHASIC ACTIVATION**.

**tonic-clonic seizure** a seizure characterized by both **TONIC** and **CLONIC** motor movements. In the tonic phase, the muscles go into spasm and the individual falls to the ground unconscious; breathing may be suspended. This is followed by the clonic phase, marked by rapidly alternating contraction and relaxation of the muscles, resulting in jaw movements (the tongue may be bitten) and urinary incontinence. Formerly called **grand mal seizure**.

**tonic contraction** the sustained contraction of different groups of fibers within a muscle to maintain continual muscular tension (tonus).

**tonic epilepsy** a type of epilepsy in which only **TONIC** muscle contractions occur.

**tonic immobility** see **DEATH FEIGNING**.

**tonic labyrinth reflex** a reflex, occurring normally during infancy and pathologically thereafter, that involves contraction of **FLEXOR** muscles (those that bend limbs) if the head is tilted forward and contraction of **EXTENSOR** muscles (those that straighten limbs) if the head is tilted backward.

**tonic pupil of Adie** a unilateral eye defect, caused by damage to the nerves supplying the intrinsic **EYE MUSCLES**, in which the pupil responds poorly to light and very slowly to convergence. [William John **Adie** (1886–1935), Australian-born British physician and neurologist]

**tonic receptor** a receptor cell whose frequency of discharge of nerve impulses declines slowly or not at all as stimulation is maintained. Compare **PHASIC RECEPTOR**.

**tonic reflex** **1.** any reflex involving a significant delay between muscle contraction and relaxation. **2.** any reflex that enables a muscle or group of muscles to maintain a certain level of tension, or tonus. Signals from stretch receptors in muscles and tendons are integrated within the spinal cord, and the signals in the efferent motor neurons are adjusted accordingly. Such reflexes are crucial for maintaining posture and for movement.

**tonic spasm** see **SPASM**.

**tono- (ton-)** combining form **1.** sound or tone (e.g., **TONOTOPIC ORGANIZATION**). **2.** tension or pressure (e.g., **TONOMETRY**).

**tonometer** **n. 1.** a device that can produce a tone of a given pitch or can measure the pitch of other tones. **2.** see **TONOMETRY**.

**tonometry** *n.* a method of measuring **INTRAOCULAR PRESSURE** that is used in the diagnosis of glaucoma and ocular hypertension. Tonometry is usually performed with a device (called a **tonometer**) that blows a puff of air against the eyeball and automatically measures the amount of indentation (resistance of the surface of the eye), which indicates the intraocular pressure.

**tonotopic organization** the fundamental principle that different frequencies stimulate different places within structures of the mammalian auditory system. This organization begins in the **COCHLEA**, where different frequencies tend to cause maximal vibration at different places along the **BASILAR MEMBRANE** and thus stimulate different **HAIR CELLS**. The hair cells are discretely innervated, so different auditory nerve fibers respond to a relatively limited range of frequencies, with the maximal response at the **best frequency** of the fiber. This frequency-to-place mapping is preserved in the **AUDITORY CORTEX**.

**tonus** *n.* a continuous, slight stretching tension or contraction in muscles when they are at rest. For example, the jaw muscles exhibit tonus when not used for eating or talking. Tonus serves to keep the muscles ready for action. See also **TONIC**.

**tool design** in **HUMAN ENGINEERING**, an approach to the design of instruments and tools that addresses **HUMAN FACTORS** concerns, such as the avoidance of muscle fatigue or injury. See also **EQUIPMENT DESIGN**; **WORKSPACE DESIGN**.

**tools of intellectual adaptation** methods of thinking, learning, or remembering or strategies for problem solving that children internalize from their interactions with more competent members of society. [defined by Lev **vygotsky**]

**tool-using behavior** the ability of nonhuman animals to use objects as tools. For example, a finch may use a cactus spine to probe for insects, and an antlion may hurl grains of sand at prey to make them fall into a pit. Chimpanzees frequently use sticks to push into termite mounds, use leaves as sponges for drinking or cleaning themselves, and use stones of different sizes as hammers and anvils to break open nuts. Distinctive patterns of tool use are found in different populations of chimpanzees across Africa, suggesting “cultural traditions” of tool-using behavior. Chimpanzees, orangutans, and capuchin monkeys in captivity also demonstrate the ability to use novel objects as tools to reach otherwise inaccessible food. This behavior requires a capacity to generalize relationships between the presence of an object in the environment and its usefulness in extending the animal’s reach.

**topagnosis** *n. 1.* loss of the ability to localize touch. Individuals can feel tactile stimuli but cannot recognize the site of stimulation. See **TACTILE AGNOSIA**. **2.** loss of the ability to recognize familiar surroundings.

**topalgia** *n.* pain that is localized in a small area without any lesion or trauma to account for it. Topalgia often is a symptom of a **SOMATOFORM DISORDER**, particularly in cases in which the pain seems to occur in unlikely segments of nerve or circulatory patterns.

**Topamax** *n.* a trade name for **TOPIRAMATE**.

**topdog** *n.* a set of internal moral standards or rules of conduct that produce anxiety and conflict in the individual when they are not fulfilled or carried out. The topdog is an ego state of superiority over the **UNDERDOG**. [defined by German-born U.S. psychiatrist Frederick (Fritz) S. Perls (1893–1970)]

**top-down design** a deductive approach in which the design of a system or product is driven by conceptual guidelines rather than by empirical data (e.g., test results or user feedback). For example, menus or other displays of functions on a computer interface generally follow a hierarchical structure from basic function categories to group-

ings or specific tasks via a series of submenus. Compare BOTTOM-UP DESIGN.

**top-down processing** INFORMATION PROCESSING in which an overall hypothesis about or general conceptualization of a stimulus is applied to and influences the analysis of incoming stimulus data. For example, in reading, knowledge about letter and word frequencies, syntax, and other regularities in language guides recognition of incoming information. In this type of processing, a person's higher level knowledge, concepts, or expectations influence the processing of lower level information (see PROOFREADER'S ILLUSION). Typically, perceptual or cognitive mechanisms use top-down processing when information is familiar and not especially complex. Also called **conceptually driven processing**; **top-down analysis**. Compare BOTTOM-UP PROCESSING. See also DEEP PROCESSING; SEMANTIC ENCODING.

**topectomy** *n.* a former psychosurgical procedure in which selected areas of the frontal cortex were excised in cases of mental illness (e.g., schizophrenia) that had not responded to electroconvulsive therapy or other types of treatment.

**topical application** the administration of a drug by applying it to the surface of the skin or other tissue surface, such as a mucous membrane. The drug is absorbed through the surface and produces its effects on underlying tissues. Some therapeutic drugs that are poorly absorbed through the skin are formulated with inert substances with better penetrating powers, which act as carriers.

**topiramate** *n.* an ANTICONVULSANT that is also used as a MOOD STABILIZER in the treatment of bipolar disorders, although not with well-established efficacy. Additionally, it is used for weight loss and for migraine prevention. Topiramate works by slowing neurotransmission through blockade of sodium channels (see ION CHANNEL); it also may facilitate the activity of the neurotransmitter GAMMA-AMINOBUTYRIC ACID (GABA) and limit activity at GLUTAMATE RECEPTORS. Psychomotor slowing and somnolence are commonly reported adverse effects. U.S. trade name: **Topamax**.

**topo- (top-)** *combining form* place or position.

**topoanesthesia** *n.* loss of touch LOCALIZATION. Individuals with topoanesthesia cannot feel tactile stimuli at all.

**topographagnosia** *n.* see TOPOGRAPHICAL DISORIENTATION.

**topographic** *adj.* pertaining to a detailed description of a structural entity, including its surface features and the spatial relations among its parts. Also called **topographical**. See also TOPOGRAPHIC ORGANIZATION. —**topographically** *adv.* —**topography** *n.*

**topographical amnesia** impairment of memory for places and spatial layouts.

**topographical disorientation** a disorder of spatial visualization exemplified by difficulty in recalling the arrangement of rooms in one's house or of the furniture in a room within that house. Individuals with topographical disorientation also may be unable to recall or describe the location of landmarks or other familiar objects in their neighborhoods. The condition is typically associated with impairment of the right parietal lobe. Also called **topographagnosia**.

**topographical memory** memory for the arrangement and relationships of objects in a spatial environment.

**topographical psychology** any system of mapping the mind by locating the various mental processes in different regions of the mind. Carl JUNG, for example, divided the mind into the conscious ego, the PERSONAL UNCONSCIOUS, and the COLLECTIVE UNCONSCIOUS; Sigmund FREUD divided the mind into the conscious, preconscious, and unconscious (see TOPOGRAPHIC MODEL). Also called **mental topography**.

**topographic model** the original division of the psyche into three regions or systems as proposed by Sigmund FREUD in 1900. The divisions are (a) the UNCONSCIOUS (Ucs), made up of unconscious impulses clustering around specific drives or instincts, such as hunger, thirst, and sex, as well as any repressed childhood memories associated with them; (b) the CONSCIOUS (Cs), which enables the individual to adapt to society, distinguish between inner and outer reality, delay gratification, and anticipate the future; and (c) the PRECONSCIOUS (Pcs), which stands between the conscious and unconscious and is made up of logical, realistic ideas intermingled with irrational images and fantasies. Also called **descriptive approach**; **systematic approach**; **topographic hypothesis**. Compare DYNAMIC MODEL; ECONOMIC MODEL. See also STRUCTURAL MODEL.

**topographic organization** the arrangement of components in a structure, particularly the orderly spatial relationship between the distribution of neural receptors in an area of the body and a related distribution of neurons representing the same functions in cortical sensory regions of the brain. Thus, the motor cortex shows SOMATOTOPIC ORGANIZATION, the primary visual cortex shows a topographic mapping of the retina (see RETINOTOPIC MAP), and the auditory system shows TONOTOPIC ORGANIZATION.

**topography of response** see RESPONSE TOPOGRAPHY.

**topological psychology** a system of psychology in which phenomena are described and classified in terms of the formal relationships of attractions and repulsions (VALENCES) in an individual's LIFE SPACE. The result is a geometric map of needs, purposes, and goals. [proposed by Kurt LEWIN using concepts from TOPOLOGY]

**topology** *n.* the study of geometric forms and their transformations in space. Jean PIAGET used topological concepts to describe the development of spatial thinking in infants and children. Kurt LEWIN used such concepts in describing behavior in the LIFE SPACE.

**toremifene** *n.* see ANTIESTROGEN.

**torpor** *n.* a condition of total inactivity or lethargy. Only a very strong stimulus can elicit a response from an individual in such a condition.

**Torrance Tests of Creative Thinking (TTCT)** two batteries of pencil-and-paper test items—a verbal test and a figural test—used to assess creative potential in children and adults in terms of such characteristics as fluency, flexibility, originality, and elaboration. Typical test “activities,” as they are called, involve listing possible consequences of the action in an intriguing picture, citing ways of improving a toy, and incorporating a curved line in drawing an unusual picture. See ARP TESTS; CREATIVITY MEASUREMENT. [originally devised in 1966 by Ellis Paul **Torrance** (1915–2003), U.S. psychologist]

**torsades de pointes** see ELECTROCARDIOGRAPHIC EFFECT.

**torsion** *n.* in vision, the movement of the eyeball around an axis running horizontally from the pupil through the back of the eye.

**tort** *n.* a wrongful act, not including a breach of contract, that may be subject to recoverable damages in a civil lawsuit.

**torticollis** *n.* a continuous or spasmodic contraction of the neck muscles, resulting in rotation of the chin and twisting of the head to one side. This form of DYSTONIA may be neurological and may respond to drug treatment or BIOFEEDBACK training. However, it may also be psychogenic. Torticollis is sometimes classed as a complex (dystonic) TIC. —**torticollar** *adj.*

**torture** *n.* the subjection of individuals to severe, painful physical abuse and violence. Torture may also involve mental or psychological abuse. See also PRISONER ABUSE.

**total color blindness** see ACHROMATISM.

**total degrees of freedom** the total number of observations in an analysis minus one. For example, in an experiment in which there are 4 conditions, with 20 participants randomly assigned to each condition, there are 80 independent observations: The total degrees of freedom is  $79 (80 - 1)$  observations, as there is one constraint on any value that will be computed to describe the sample, such as the MEAN. Relatedly, each individual condition has its own DEGREES OF FREEDOM as well:  $20 - 1 = 19$ .

**total effect** in the study of causal effects, the total extent to which the dependent (or outcome) variable is changed by the independent (or predictor) variable, including any indirect effect through a MEDIATOR. In a simple example, if the independent variable, *x*, is presumed to cause the outcome variable, *y*, the PATH COEFFICIENT of this direct effect, *A*, is the total effect. If there is an intervening variable, linked by two path coefficients, *B* and *C*, this indirect effect is *BC*, and the total effect is  $A + BC$ . See also PATH ANALYSIS.

**total hysterectomy** see HYSTERECTOMY.

**total immersion** a program for second-language acquisition in which all instruction is in the new language and there is minimal use of the individual's native language. In school-based immersion programs, the second language is incorporated into the teaching of other subjects, with the goal of creating a bilingual classroom. **Early immersion** refers to programs begun when children are in kindergarten or Grade 1 and continued through the rest of elementary school.

**total institution** **1.** a highly organized and restrictive social INSTITUTION that maintains a high degree of control over the activities of those individuals who are members of, or confined to, it. Prisons, mental health facilities, and military bases are (in many cases) examples, because nearly all the activities of prisoners, patients, and personnel are regulated by the staff or officers. **2.** a traditional social institution that becomes so rigid that it takes on many of the qualities of a restrictive social institution. Marriage, for example, has been characterized as a total institution because it often creates a high degree of uniformity in the lifestyles and choices of adults.

**total lipodystrophy** a form of LIPODYSTROPHY, often congenital but occasionally acquired, that is characterized by the absence of adipose tissue in the subcutaneous tis-

sues, perirenal area, epicardium, and mesentery. See also PARTIAL LIPODYSTROPHY.

**total-package arbitration** a form of dispute resolution in which the parties in conflict submit their preferred terms for a settlement to a neutral party (the arbitrator), who must choose the entire package of demands submitted by one of the parties rather than selectively accepting some demands from one party and some demands from the other. The knowledge that a dispute will be settled in this way often motivates parties in conflict to reach consensus prior to arbitration, since a compromise will yield a better outcome than the binding imposition of the other party's package.

**total quality management (TQM)** in industrial and organizational settings, a comprehensive approach to management that involves a commitment to continuous improvements in quality and productivity. It usually entails improved training and communications in the workplace, greater participation of employees in making decisions, redesign of the work process, and the use of statistical techniques to monitor quality (see STATISTICAL PROCESS CONTROL). TQM programs are customer focused: Employees identify internal and external customers, assess their needs, and commit themselves to meeting these needs in total at the first attempt. Also called **continuous improvement**.

**total recall** **1.** the ability to remember an event completely and accurately. **2.** in a recall task, the total number of items remembered across conditions or tests.

**total sum of squares** (symbol: *TSS*) in ANALYSIS OF VARIANCE and REGRESSION ANALYSIS, the SUM OF SQUARES due to the effects of treatment plus the sum of squares due to error.

**total variance** in ANALYSIS OF VARIANCE and REGRESSION ANALYSIS, the variability that is due to the effects of treatment (TRUE VARIANCE) plus the variability that is due to error (ERROR VARIANCE).

**totem** *n.* **1.** a revered animal, plant, natural force, or inanimate object that is conceived as the ancestor, symbol, protector, or tutelary spirit of a people, CLAN, or community. It is usually made the focus of certain ritual activities and TABOOS, typically against killing or eating it. **2.** as interpreted by Sigmund FREUD in *Totem and Taboo* (1912–1913), any symbol or representation of the primal father. —**totemic** *adj.* —**totemism** *n.*

**TOTE model** see FEEDBACK LOOP.

**TOT phenomenon** abbreviation for TIP-OF-THE-TONGUE PHENOMENON.

**touch** *n.* the sensation produced by contact of an object with the surface of the skin. Sensitivity to touch varies in different parts of the body; for example, the lips and fingers are far more sensitive than the torso or back. See also TOUCH SENSE.

**touch blends** complex sensations derived from engaging in ACTIVE TOUCH to experience different qualities of an object, including hardness, softness, roughness, smoothness, wetness, dryness, and stickiness.

**toucherism** *n.* sexual interest and arousal obtained from touching a stranger on an erotic part of the body, particularly the breasts, buttocks, or genitals. This is often done in doorways or hallways as an apparent accident. See also FROTTEURISM.

**touch fiber** a nerve fiber that is a receptor for a contact stimulus, such as stroking or light pressure.

**touch sense** the ability to perceive an object or other stimulus that comes into contact with the surface of the skin (e.g., by pressure, stroking). Also called **tactile sense**. See HAPTIC PERCEPTION; TACTILE PERCEPTION. See also CUTANEOUS SENSE.

**touch spot** any of the small areas of the skin that are particularly sensitive to light contact.

**touch therapy** treatment that involves touching or manipulating parts of an individual's body to ease physical pain or to promote relaxation and a general sense of well-being. Touch therapy has been shown to have numerous benefits for children (among others), such as improving the physical and psychological development of preterm infants and bringing about a greater tolerance of touch by children with autism, which has resulted in enhanced bonding and communication with their parents. Also called **therapeutic touch**. See also COMPLEMENTARY AND ALTERNATIVE MEDICINE; MASSAGE.

**tough love** the fostering of individuals' well-being by requiring them to act responsibly and to seek professional assistance for problem behaviors. Often, strict oversight and restrictions of personal freedom and privileges must be willingly accepted by the target individual. Tough love is typically a stance taken by the families of adolescents or young adults with a prolonged history of substance abuse.

**tough-mindedness** *n.* **1.** a personality trait reflecting the extent to which people demonstrate low levels of compassion and high levels of aggression in social interactions. [proposed by Hans EYSENCK] **2.** a personality trait characterized by empiricism, materialism, skepticism, and fatalism. Compare TENDER-MINDEDNESS. [first described by William JAMES] —**tough-minded** *adj.*

**Tourette's disorder** a TIC DISORDER characterized by many motor tics and one or more vocal tics, such as grunts, yelps, barks, sniffs, or (rarely) COPROLALIA. The tics occur many times a day for more than a year, during which time any period free of tics is never longer than 3 months. The age of onset for the disorder is before 18 years; in most cases, it starts during childhood or early adolescence. Also called **Gilles de la Tourette's syndrome**. [first described in 1885 by Georges Gilles de la **Tourette** (1857–1904), French physician]

**TOVA** abbreviation for TEST OF VARIABLES OF ATTENTION.

**Tower of Hanoi** a puzzle often used in studies of problem solving and tests of EXECUTIVE FUNCTIONS. In the most basic version, three disks of successively decreasing diameter are stacked on one of three vertical pegs. The solver's task is to move the stack to another peg one disk at a time, never stacking a larger disk on a smaller one, in the fewest possible moves. The puzzle was invented in 1883 by French mathematician Edouard Lucas (1842–1891). A similar test, the **Tower of London**, was developed in the 1980s by British neuropsychologist Timothy Shallice (1940– ) to investigate planning ability in individuals with frontal lobe dysfunction; in this case, the solver's task is to move three colored beads (or rings) from their initial position on vertical pegs to predetermined positions on other pegs, using the fewest number of moves possible.

**tox-** (**toxic-**; **toxo-**; **toxico-**) *combining form* poison or poisoning.

**toxemia of pregnancy** a syndrome of edema, hypertension, and proteinuria that may develop in the last trimester of a pregnancy. It is now more commonly known as PREECLAMPSIA, which may progress to ECLAMPSIA.

**toxic delirium** delirium due to the action of a poison on the brain, as may result from a drug overdose, an adverse drug interaction, overmedication, or other conditions.

**toxic disorder** a brain disorder due to acute or chronic intoxication from poisoning by mercury, manganese, lead, bromide, alcohol, barbiturates, or other substances.

**toxic epidermal necrosis** see STEVENS–JOHNSON SYNDROME.

**toxicity** *n.* the capacity of a substance to produce poisonous effects in an organism. The toxicity of a substance—whether a drug, an industrial or household chemical, or other agent—generally is related to the size of the dose per body weight of the individual, expressed in terms of milligrams of chemical per kilogram of body weight. Toxicity also may be expressed in terms of the median LETHAL DOSE (LD<sub>50</sub>). See also BEHAVIORAL TOXICITY.

**toxic-metabolic encephalopathy** see METABOLIC ENCEPHALOPATHY.

**toxicology** *n.* the study of poisons and their mechanisms of action, effects, detection, treatment, and antidotes. See also BEHAVIORAL TOXICOLOGY; DEVELOPMENTAL TOXICOLOGY; NEUROTOXICOLOGY.

**toxicomania** *n.* **1.** a morbid desire to consume poisons. **2.** a severe dependency on drugs.

**toxicosis** *n.* (*pl.* **toxicoses**) **1.** any disease or condition of ill health that is the result of poisoning. **2.** see CONDITIONED TASTE AVERSION.

**toxic psychosis** any psychosis resulting from ingestion of poisons or drugs or caused by toxins produced within the body.

**toxin** *n.* a poisonous substance, especially one produced by a living organism.

**toxo-** *combining form* see TOX-.

**toxoplasmosis** *n.* a disease caused by infection with the protozoan parasite *Toxoplasma gondii*, which invades and multiplies within the tissues of mammals and birds. For example, the parasites reproduce in the intestinal cells of cats, and the disease may be transmitted to humans through accidental ingestion (via careless handling) of cat feces. Human infection may also result from eating raw or undercooked meat or, very rarely, from blood transfusion or organ transplantation. When acquired by a pregnant woman, the parasite can be transmitted to the fetus (congenital toxoplasmosis), causing hydrocephalus, blindness, intellectual disability, and other neurological disorders.

**toy test** any of a variety of projective tests for children that make use of dolls, puppets, or other toys. See PROJECTIVE TECHNIQUE.

**TPA** abbreviation for THIRD-PARTY ADMINISTRATOR.

**TPD** abbreviation for trance and possession disorder. See DISSOCIATIVE TRANCE DISORDER.

**TPQ** abbreviation for Tridimensional Personality Questionnaire. See TEMPERAMENT AND CHARACTER INVENTORY.

**TPT** abbreviation for TACTUAL PERFORMANCE TEST.

**TQM** abbreviation for TOTAL QUALITY MANAGEMENT.

**trace** *n.* **1.** see MEMORY TRACE. **2.** in multivariate statistics and linear algebra, the sum of the elements on the MAIN DIAGONAL of a SQUARE MATRIX.

**trace conditioning** a procedure in CLASSICAL CONDITIONING in which a conditioned stimulus and an unconditioned stimulus are separated by a constant interval (called the **trace interval**), with the conditioned stimulus presented first. Compare TEMPORAL CONDITIONING.

**trace-decay theory** see DECAY THEORY.

**tracer** *n.* see RADIOACTIVE TRACER.

**tracheotomy** *n.* surgery to create an opening (**tracheostomy**) in the trachea (windpipe) through the neck to relieve impaired or obstructed breathing.

**trachoma** *n.* an infection of the eye, involving mainly the conjunctiva and cornea, caused by a strain of the bacterium *Chlamydia trachomatis*. Trachoma begins with pain, tearing, and photophobia; untreated, it progresses to blindness. The causative bacterium is also responsible for a form of NONGONOCOCCAL URETHRITIS. See OPHTHALMIA.

**tracking** *n.* **1.** the process of smoothly following a moving object with the eyes or using eye movements to continuously follow a path. See VISUAL PURSUIT. **2.** a type of task in which the goal is to make movements that follow a constantly moving target. **3.** monitoring the progress of a student by means of recording test and homework scores, observing behavior within the classroom, eliciting a self-report, or a combination of these. —**track** *vb.*

**tract** *n.* **1.** a bundle or group of nerve fibers within the central nervous system. The name of a tract typically indicates its site of origin followed by its site of termination; for example, the reticulospinal tract runs from the reticular formation of the brainstem to the spinal cord. Compare NERVE. **2.** a series of organs that as a whole accomplishes a specific function (e.g., the digestive tract). **3.** a region, passage, or pathway.

**tractotomy** *n.* the surgical interruption of a nerve tract in the brainstem or spinal cord. One form of tractotomy is of benefit in bipolar disorder that is resistant to other forms of treatment.

**trademark** *n.* any word, phrase, name, symbol, device, or combination thereof used by manufacturers or merchants to identify their products (e.g., Oreo cookies, Lycra stretch fiber, Crayola crayons) and to distinguish them from the products of others. Common trademarks include slogans, logos, and specific packaging designs. Whereas a trademark identifies products, a **trade name** identifies the company that makes or sells them. However, in the area of pharmacology, the two terms are often used interchangeably to refer to PROPRIETARY DRUGS.

**trade union** see UNION.

**tradition** *n.* a set of social customs or ethnic or family practices handed down from generation to generation. See also HERITAGE. —**traditional** *adj.*

**traditional authority** see AUTHORITY.

**traditionalism** *n.* **1.** a set of social practices and conditions considered typical of societies that are economically and technologically undeveloped, relatively static in their structures and customs, rural rather than urban, and religious rather than secular and that tend to emphasize family or collective responsibilities rather than individual rights and aspirations. The adequacy of this description

and of the dichotomy between traditional and modern societies that it implies is by no means universally accepted. See MODERNIZATION. See also CULTURAL EPOCH THEORY; PRIMITIVE. **2.** more generally, adherence to any set of political, religious, or cultural traditions. —**traditionalist** *n.* —**traditionalistic** *adj.*

**traditional marriage** **1.** a marriage according to the historical norms of a given society, usually for the primary purpose of establishing a family. Although prenuptial customs vary in different cultures, a traditional marriage generally follows a period of courtship, public announcement of wedding plans, and a wedding ceremony. Compare NON-TRADITIONAL MARRIAGE. **2.** a marriage of husband and wife, wherein the former is the primary or sole breadwinner and the latter holds primary or sole responsibility for maintaining the home and managing child care.

**traditional medicine** see FOLK MEDICINE.

**tradition-directed** *adj.* describing or relating to individuals whose values, goals, and behavior are largely determined by their traditional cultural heritage, that is, by the social norms transmitted by their parents. Compare INNER-DIRECTED; OTHER-DIRECTED. [introduced by U.S. sociologist David Riesman (1909–2002)]

**trafficking** *n.* illegal transportation and trade in people or commodities. **Human trafficking** involves the transport of men, women, or children from one location to another, usually by coercion (e.g., kidnapping or threats) or by enticement through fraudulent means (e.g., with promises of legitimate work), to be forcibly exploited for the profit of others. Examples of such exploitation include forced servitude, prostitution (**sex trafficking**), forced extraction of organs for sale to the medical market for transplantation, and surrogacy in which a woman is coerced into bearing a child for another. Human trafficking has become a multimillion dollar international industry. Trafficking also refers to the smuggling of cocaine, heroin, and other illegal drugs from their point of manufacture in one location to their distribution and sale in another (i.e., **drug trafficking**).

**tragedy of the commons** a SOCIAL DILEMMA that occurs when a course of action benefiting individual members of a community in the short term is detrimental to the long-term welfare of the community. In the original example of this dilemma, if each herdsman in a village seeks to maximize his individual gain by keeping as many of his cattle as possible on common grazing land, this will eventually make the land unusable by all, because the grass of the pasture is a limited resource. The tragedy is that complete freedom in a society brings ruin to all. Also called **commons dilemma**. [introduced in 1968 by U.S. ecologist Garrett Hardin (1915–2003)]

**Trail Making Test (TMT)** a connect-the-dot task that forms part of the HALSTEAD–REITAN NEUROPSYCHOLOGICAL BATTERY. **Trails A** requires the connection in sequence of 25 dots labeled by numbers. **Trails B** requires the connection in sequence of 25 dots labeled by alternating numbers and letters (1–A–2–B–3–C). The test, one of the most widely used for cognitive impairment, is purported to measure several functions, particularly cognitive flexibility, alternating attention, sequencing, visual search, and motor speed. The TMT, originally developed in 1938 by U.S. psychologists John E. Partington and Russell G. Leiter, was initially known as the **Divided Attention Test** and subsequently as **Partington's Pathways Test**.

**train** **1.** *vb.* to teach or condition an individual to perform

certain responses, behaviors, tasks, or activities, particularly in a learning experiment. **2. n.** a succession of mild electrical impulses, such as is given in brain stimulation.

**trainability** *n.* the capacity of an individual to benefit from training and to gain proficiency in a particular skill. —**trainable** *adj.*

**trainable mentally retarded** in SPECIAL EDUCATION, a rarely used term for a category of people, usually children or young adults, with moderate mental retardation (an IQ of 35 to 49) who do not appear to profit from academic education in special classes but are able to achieve a degree of self-care, social adjustment, and vocational usefulness in such settings as sheltered workshops.

**trainer** *n.* **1.** in mental health, a professional leader or facilitator of a sensitivity training group (see T-GROUP). **2.** a teacher or supervisor of individuals learning to practice psychotherapy.

**training** *n.* systematic instruction and practice by which an individual acquires competence in a specific discipline, talent, or vocational or recreational skill or activity.

**training analysis** PSYCHOANALYSIS of a trainee analyst. Its purpose is not only to provide training in the concepts and techniques of psychoanalysis but also to increase insight into personal sensitivities or other emotional reactions that might interfere with the process of analyzing patients in the form of a COUNTERTRANSFERENCE.

**training evaluation** a review of PERSONNEL TRAINING programs to determine their effectiveness and efficiency. Training evaluations can focus on trainee attitudes and reactions to the training, trainee knowledge of the information disseminated in the program, or changes in the behavior of the trainee and resulting benefits to the group or organization. See TRAINING VALIDITY.

**training group** see T-GROUP.

**training log** a form of SELF-MONITORING in which athletes record sleep patterns, food intake, mood, anxiety levels, and physical activities. Also called **sport self-talk log**.

**training school** formerly, a rehabilitation facility for children or adults with intellectual or developmental disabilities at which interdisciplinary teams of therapists and allied health care practitioners offered residential, health, training, vocational, and leisure services. Although such facilities attempted to provide homelike settings, this was seldom achieved in practice. Their use, once common, greatly diminished in the late 20th century. See also PUBLIC RESIDENTIAL FACILITY.

**training study** a study in which a participant's task performance is assessed after he or she has been instructed in the use of a strategy. In cognitive developmental research, training studies are used to assess MEDIATIONAL DEFICIENCY and PRODUCTION DEFICIENCY.

**training systems design** a specialty area in which principles drawn from COGNITIVE ERGONOMICS and general educational theory are applied to the design and evaluation of systems created to facilitate learning and transfer of knowledge and skills.

**training validity** the success of a training program as judged by the performance of trainees on criteria that form part of the program. For example, the success of a program focusing on truck-driving skills might be evaluated on the basis of how well the trainees perform in driving a simulator used for instruction. This is to be distinguished from

**transfer validity**, in which the program is evaluated on how well the trainees perform in the workplace after training (i.e., how well the trainee performs in driving real trucks on the job). See TRAINING EVALUATION.

**trait** *n.* **1.** an enduring personality characteristic that describes or determines an individual's behavior across a range of situations. **2.** in genetics, an attribute resulting from a hereditary predisposition (e.g., hair color, facial features). **3.** in ITEM RESPONSE THEORY, an individual's level of competence on a certain task or aptitude measurement.

**trait anxiety** proneness to experience anxiety. People with high trait anxiety tend to view the world as more dangerous or threatening than those with low trait anxiety and to respond with STATE ANXIETY to situations that would not elicit this response in people with low trait anxiety. [defined in 1972 and 1983 by Charles D. SPIELBERGER]

**trait negativity bias** the tendency for negative personality traits to play a greater role than positive personality traits in determining overall impressions and to be cited more often in attributions of motive. Also called **negativity bias**. See also BAD IS STRONGER THAN GOOD; POSITIVE-NEGATIVE ASYMMETRY.

**trait organization** the way in which an individual's personality characteristics are related and comprise a unique, integrated whole.

**trait profile** a graphic display of test scores in which each score represents an individual personality characteristic (trait). These scores or ratings are often arranged on a common scale to enable them to be interpreted quickly. See TEST PROFILE.

**trait rating** a technique in which a given behavioral feature or character attribute is observed, rated, and recorded.

**trait rumination** a tendency to focus attention on negative thoughts and emotions, which is associated with longer and more severe episodes of depression or anxiety.

**trait self-focus** see SELF-FOCUS.

**trait theory** approaches that explain personality in terms of internal characteristics that are presumed to determine behavior. Some examples are ALLPORT'S PERSONALITY TRAIT THEORY, CATTELL'S PERSONALITY TRAIT THEORY, and the FIVE-FACTOR PERSONALITY MODEL.

**trait theory of leadership** any of various approaches to leadership that consider cognitive and noncognitive abilities and personality characteristics as important determinants of success in a leadership role. Among the traits that have been shown to be positively related to successful leadership are general intelligence, extraversion, self-confidence, decisiveness, and ACTION ORIENTATION. See LEADERSHIP THEORIES.

**trait-treatment interaction (TTI)** the interplay between personal characteristics (e.g., gender, aptitude) and conditions of treatments (e.g., methods of instruction) as it affects a dependent variable (e.g., scores on an academic test). Using ANALYSIS OF VARIANCE or MULTIPLE REGRESSION analysis, it is possible to determine the best type of treatment for people with different traits. See also APTITUDE-TREATMENT INTERACTION.

**trait validity** the degree to which responses to a test's items provide accurate measurement of a personality characteristic (trait). A test has trait validity if an association can be demonstrated between the test scores and the pre-

diction of an underlying trait. See also MULTITRAIT–MULTIMETHOD MATRIX.

**trajectories of dying** the rate of movement and the length of the passage from a life-threatening condition to death. In 1968, U.S. sociologists Barney G. Glaser (1930– ) and Anselm L. Strauss (1916–1996) developed a classification of dying trajectories, two of which have received particular attention from clinicians and researchers. The first, the **lingering trajectory**, is often characteristic of long-term, terminally ill patients who seldom receive aggressive, all-out treatment. By contrast, the second is the **quick trajectory** associated with an emergency situation, in which any possible intervention to save a person's life might be attempted.

**trajectory** *n.* the sequence of positions through which an object travels over time during a specific movement.

**trance** *n.* **1.** an ALTERED STATE OF CONSCIOUSNESS characterized by decreased awareness of and responsiveness to stimuli and an apparent loss of voluntary power. **2.** a state brought about by HYPNOTIC INDUCTION or AUTOSUGGESTION and characterized by susceptibility to suggestion. Hypnotized persons may report a **light trance**, in which they might accept suggestions that, for example, they cannot open their eyes or they lack sensation in a limb, or a **medium trance**, in which they may experience POSTHYPNOTIC AMNESIA and POSTHYPNOTIC SUGGESTION. A DEEP TRANCE might be characterized by an inability to open the eyes without affecting the trance, complete somnambulism, positive and negative posthypnotic hallucinations, and hyperesthesia (excessive sensitivity). The reality of such trance states has been the subject of much debate. Also called **hypnotic trance**.

**trance and possession disorder (TPD)** see DISSOCIATIVE TRANCE DISORDER.

**trance disorder** see DISSOCIATIVE TRANCE DISORDER.

**trance logic** the apparent tendency of hypnotized individuals to engage simultaneously in logically contradictory or paradoxical thoughts and perceptions and to be oblivious to their incongruity. It has been suggested that trance logic represents evidence of PARALLEL PROCESSING in that there appears to be simultaneous registration of information at different levels of awareness. See DIVIDED CONSCIOUSNESS; NEODISSOCIATION THEORY. [coined by Martin T. ORNE]

**tranquilizer** *n.* a drug that is used to reduce physiological and subjective symptoms of anxiety. In the past, distinctions were made between so-called major tranquilizers (ANTIPSYCHOTICS) and minor tranquilizers (ANXIOLYTICS; e.g., benzodiazepines).

**tranquilizer chair** a heavy wooden chair used in early psychiatry in which patients were strapped at the chest, abdomen, ankles, and knees, with their head inserted in a wooden box. This method of restraint was preferred to the STRAITJACKET because it reduced the flow of blood to the head and did not interfere with bloodletting, one of the standard treatments of the time. [devised by U.S. physician and psychiatrist Benjamin Rush (1745–1813)]

**transaction** *n.* **1.** any interaction between the individual and the social or physical environment, especially during encounters between two or more people. **2.** in some psychotherapies, the interplay between the therapist and the patient and ultimately between the patient and other individuals in his or her environment.

**transactional analysis (TA)** a theory of personality and a form of dynamic group or individual psychotherapy focusing on characteristic interactions that reveal internal EGO STATES and the games people play in social situations. Specifically, the approach involves (a) a study of three primary ego states (parent, child, adult) to determine which one is dominant in the transaction in question; (b) identification of the tricks and expedients, or games, habitually used in the client's transactions; and (c) SCRIPT ANALYSIS of the unconscious plan of the client's life to uncover the sources of his or her emotional problems. [developed in the 1950s by Canadian-born U.S. psychiatrist Eric Berne (1910–1970)]

**transactional contingent reward** an interaction between two individuals in which one party offers rewards to the other contingent on specific actions or outcomes.

**transactional evaluation** an attempt to apply the principles of GENERAL SYSTEMS THEORY to the area of program innovation. It is designed to minimize the disruption of the reallocation process that occurs when changes are introduced in an organization and thereby to minimize any personal threat and defensiveness felt by participants in the system.

**transactionalism** *n.* **1.** an approach to ENVIRONMENTAL PSYCHOLOGY that emphasizes the continuing process of interaction between a person and his or her physical and social environment. This process is characterized as an ongoing series of "transactions" in which the person's behaviors are modified by environmental factors and vice versa. **2.** an approach to perception that emphasizes the interaction of people and their environments. Rather than being mere passive observers, people draw on past experiences to form perceptions of present situations and even of novel stimuli. —**transactionalist** *adj., n.*

**transactional leadership** a style of leadership in which the emphasis is on ensuring that followers accomplish tasks. Transactional leaders influence others through exchange relationships in which benefits are promised in return for compliance. Compare TRANSFORMATIONAL LEADERSHIP. [introduced by U.S. political scientist James MacGregor Burns (1918–2014)]

**transactional model of development** a framework in which development is viewed as the continuous and bidirectional interchange between an active organism, with a unique biological constitution, and its changing environment. See also DEVELOPMENTAL SYSTEMS APPROACH.

**transactional psychotherapy** psychotherapy that emphasizes the daily interactions between the client and others in his or her life. TRANSACTIONAL ANALYSIS is a specific type of therapy that is based on types of transactions that are considered dysfunctional.

**transactive memory system** a system in which information to be remembered is distributed among various members of a group, who can then each be relied on to provide that information when it is needed.

**transcendence** *n.* in METAPHYSICS and in the study of consciousness, a state of existence or perception that is not definable in terms of normal understanding or experience. The term may imply a state that goes beyond conventional conceptions of the natural world. —**transcendent** *adj.*

**transcendence need** in the psychoanalysis of Erich FROMM, the human need to create so as to rise above passivity and attain a sense of meaning and purpose in an im-



permanent and seemingly random or accidental universe. Both creativity and destructiveness are considered by Fromm to be manifestations of the transcendence need.

**transcendence therapy** a form of therapy that is spiritually oriented and intended to help people achieve inner peace by first understanding their role in the larger picture of life and then using that understanding to overcome disappointments, difficulties, and other hardships. [developed by Dutch-born U.S. psychologist Adrian van Kaam (1920–2007)]

**transcendentalism** *n.* any philosophical position holding that ultimate reality lies beyond the level of sensory appearances or empirical investigation, such as the THEORY OF FORMS proposed by PLATO. The philosophies of German thinkers Immanuel KANT, Georg Wilhelm Friedrich Hegel (1770–1831), and Johann Gottlieb Fichte (1762–1814) are later examples of transcendentalism. The philosophical ideas of U.S. essayist and poet Ralph Waldo Emerson (1803–1882) and several of his New England contemporaries, which are based upon a search for reality through intuition, are also typically described as transcendentalist. See also IDEALISM; MYSTICISM. —**transcendental** *adj.* —**transcendentalist** *adj.*

**transcendental meditation (TM)** a technique of CONCENTRATIVE MEDITATION for achieving an altered state of consciousness. Based on the *Bhagavadgita* and other ancient Hindu writings, it was introduced in the United States in 1959 by Indian-born guru Maharishi Mahesh Yogi. The modern version of the original discipline consists of six steps that culminate in sitting with one's eyes closed, while repeating a MANTRA, for two 20-minute periods a day. Repetition of the mantra serves to block distracting thoughts and to induce a state of relaxation in which images and ideas can arise from deeper levels of the mind and from the cosmic source of all thought and being. The result is said to be not only a greater sense of well-being but also more harmonious interpersonal relations and the achievement of a state of ultimate self-awareness and restful alertness. See also MYSTIC UNION.

**transcendental state** a level of consciousness believed to reach beyond waking, sleeping, and hypnotic states. It is characterized physically by lowered metabolism and reduced adrenergic functions and psychologically by alleviation of tension, anxiety, and frustration and a high level of tranquility.

**transcendent counseling** a form of counseling based on the notion that behavior is a product of an individual's lifestyle and that behavior change can only be achieved through lifestyle change. Various techniques and activities are employed, such as interpersonal counseling, the use of relaxation and meditation, and adoption of exercise and nutrition programs. [developed by U.S. psychologist Frederick D. Harper (1943– )]

**transcortical** *adj.* referring to the passage of activity from one part of the cerebral cortex to another.

**transcortical aphasia** a general term for an APHASIA caused by a lesion outside of BROCA'S AREA and WERNICKE'S AREA. As a result, the individual will be able to repeat spoken words but will have difficulty producing independent speech or understanding speech. There are three classic forms: TRANSCORTICAL MOTOR APHASIA, TRANSCORTICAL SENSORY APHASIA, and MIXED TRANSCORTICAL APHASIA (i.e., the motor and sensory forms combined).

**transcortical motor aphasia (TMA)** a form of APHASIA in which individuals cannot initiate speech but can repeat words. It is caused by a lesion just in front of BROCA'S AREA.

**transcortical sensory aphasia (TSA)** a form of APHASIA in which individuals cannot understand other people's speech but can repeat words. It is caused by a lesion just behind BROCA'S AREA.

**transcranial Doppler ultrasonography (TCD)** a noninvasive test that uses ultrasonic waves to monitor blood velocities in large arteries in the brain. Typically used diagnostically to detect conditions affecting blood flow to and within the brain, TCD is advantageous in that it can be administered at bedside. Also called **transcranial Doppler sonography**; **transcranial Doppler ultrasound**.

**transcranial magnetic stimulation (TMS)** localized electrical stimulation of the brain caused by changes in the magnetic field in coils of wire placed around the head. Depending on the parameters, TMS may elicit a response or disrupt functioning in the region for a brief time. The technique was originally devised and is primarily used as an investigatory tool to assess the effects of electrical stimulation of the motor cortex. It is approved for treatment of depression and is being investigated as a possible therapy for other psychological conditions, such as obsessive-compulsive disorder and Tourette's disorder, and for some types of movement disorders. **Repetitive transcranial magnetic stimulation (rTMS)** consists of a series of TMS pulses.

**transcription** *n.* the process whereby the genetic information contained in DNA is transferred to a molecule of MESSENGER RNA (mRNA), which subsequently directs protein synthesis. The base sequence of the mRNA is complementary to that of the coding DNA strand and faithfully represents the instructions for assembling the component amino acids of the protein encoded by the gene (see GENETIC CODE).

**transcultural psychotherapy** any form of PSYCHODYNAMIC PSYCHOTHERAPY that emphasizes cultural sensitivity and awareness, including culturally defined concepts of emotion, drives, and behavior. In the psychiatric community, the term is used somewhat more often in a sense similar to MULTICULTURAL THERAPY in clinical psychology.

**transcutaneous electrical nerve stimulation** see TENS.

**transdermal patch** an adhesive application that is designed to release a drug at a steady rate via absorption through the skin into the bloodstream. Transdermal patches are used, for example, to administer nicotine in progressively smaller doses to people who are trying to give up smoking.

**Transderm-Scop** *n.* a trade name for SCOPOLAMINE.

**transducer** *n.* a device or system that converts energy from one form to another. Sensory RECEPTOR cells are an example.

**transduction** *n.* the process by which one form of energy is converted into another. The term denotes **sensory transduction** in particular, the transformation of the energy of a stimulus into a change in the electric potential across the membrane of a RECEPTOR cell. See OLFACTORY TRANSDUCTION; TASTE TRANSDUCTION; VISUAL TRANSDUCTION.

**transductive reasoning** the tendency of a child in the PREOPERATIONAL STAGE of cognitive development to see a connection between unrelated instances, using neither deductive nor inductive means to do so. For example, the child might say, *I haven't had my nap, so it isn't afternoon.* [proposed by Jean PIAGET]

**transection** *n.* the severing or cutting of something transversely, such as a nerve tract or fiber or the spinal cord. —**transect** *vb.*

**transfer** **1.** *vb.* to shift or change from one location to another, one form to another, or one situation or condition to another. **2.** *n.* the shift or change thus produced, as in TRANSFER OF TRAINING. **3.** *n.* in GESTALT PSYCHOLOGY, the use of the solution to one problem in solving a second problem that has elements in common with the first.

**transfer-appropriate processing** a theory stating that memory performance is better when the cognitive processes engaged during retrieval match the cognitive processes that were engaged when the material was encoded. For example, test performance should be relatively good if both study and test conditions emphasize either semantic processing on the one hand or perceptual processing on the other, but test performance will not be as good if study conditions emphasize one (e.g., semantic) and test conditions emphasize another (e.g., perceptual). See ENCODING SPECIFICITY.

**transferase** *n.* any of a class of enzymes that catalyze the transfer of atoms or groups from one molecule to another. The AMINOTRANSFERASES are an example.

**transfer by generalization** see GENERAL TRANSFER.

**transference** *n.* in psychoanalysis, a patient's DISPLACEMENT or PROJECTION onto the analyst of those unconscious feelings and wishes originally directed toward important individuals, such as parents, in the patient's childhood. It is posited that this process brings repressed material to the surface where it can be reexperienced, studied, and worked through to discover the sources of a patient's current neurotic difficulties and to alleviate their harmful effects. Although the theoretical aspects of the term are specific to psychoanalysis, transference has a recognized role in various other types of therapeutic encounter, including counseling and short-term dynamic psychotherapy. The term's broader meaning—an unconscious repetition of earlier behaviors and their projection onto new subjects—is acknowledged as applying to all human interactions. See also ANALYSIS OF TRANSFERENCE; COUNTERTRANSFERENCE; NEGATIVE TRANSFERENCE; POSITIVE TRANSFERENCE.

**transference analysis** see ANALYSIS OF TRANSFERENCE.

**transference cure** see FLIGHT INTO HEALTH.

**transference distortion** see PARATAXIC DISTORTION.

**transference neurosis** in psychoanalysis, neurotic reactions released by the TRANSFERENCE process that result from the revival and reliving of the patient's early conflicts and traumas. These reactions are posited to replace the original neurosis and help the patient become aware that his or her attitudes and behavior are actually repetitions of infantile drives. It is believed that the transference neurosis must be resolved if the patient is to free himself or herself from the harmful effects of past experiences and adopt more appropriate attitudes and responses.

**transference remission** see FLIGHT INTO HEALTH.

**transference resistance** in psychoanalysis, a form of

RESISTANCE to the disclosure of unconscious material, in which the patient maintains silence or attempts to act out feelings of love or hate transferred from past relationships to the analyst.

**transfer function model** **1.** a model used in FUNCTIONAL MAGNETIC RESONANCE IMAGING to describe the shape of responses. A neuron receives a number of inputs, each of which comes via a connection that has a strength or weight; these weights correspond to the synaptic efficacy of the neuron. Each neuron also has a single threshold value. Activation of the neuron is determined by the weighted sum of the inputs minus the threshold. The activation signal is passed through a transfer function to produce the output of the neuron. **2.** in TIME-SERIES ANALYSIS, a type of model used to forecast a time series that is influenced by present and past values of other time series.

**transfer of principles** see GENERAL TRANSFER.

**transfer of training** the influence of prior learning on new learning, either to enhance it (see POSITIVE TRANSFER) or to hamper it (see NEGATIVE TRANSFER). Solving a new problem is usually easier if previously learned principles or components can be applied, but in some cases these may confuse or mislead. The general principles of mathematics, for example, transfer to computer programming, but a knowledge of Spanish may have both positive and negative effects in learning Italian. See also GENERAL TRANSFER; SPECIFIC TRANSFER.

**transfer RNA** see RNA.

**transfer validity** see TRAINING VALIDITY.

**transformation** *n.* **1.** any change in appearance, form, function, or structure. See also METAMORPHOSIS. **2.** the conversion of data to a different form through a rule-based and usually mathematical process, such as changing Fahrenheit to Celsius. In statistics, a RAW SCORE is often transformed into a STANDARDIZED SCORE for purposes of comparison. See also LINEAR TRANSFORMATION; NONLINEAR TRANSFORMATION. **3.** in psychoanalytic theory, the process by which unconscious wishes or impulses are disguised in order to gain admittance to consciousness. —**transform** *vb.* —**transformational** *adj.*

**transformational generative grammar** a type of GENERATIVE GRAMMAR based on the idea that sentences have an underlying DEEP STRUCTURE as well as the SURFACE STRUCTURE observable in speech or writing and that the former gives rise to the latter through the operation of a small number of **transformational rules** involving the movement, addition, and deletion of constituents. This approach to syntactic structures was pioneered by Noam CHOMSKY in the late 1950s as a means of supplementing the more limited analysis made possible by PHRASE-STRUCTURE GRAMMAR. Also called **transformational grammar**. See also KERNEL SENTENCE.

**transformational leadership** a charismatic, inspiring style of leading others that usually involves heightening followers' motivation, confidence, and satisfaction; uniting them in the pursuit of shared, challenging goals; and changing their beliefs, values, and needs. Compare TRANSACTIONAL LEADERSHIP. [introduced by U.S. political scientist James MacGregor Burns (1918–2014)]

**transformational rules** see TRANSFORMATIONAL GENERATIVE GRAMMAR.

**transformation theory** the hypothesis that, over the

course of time, one biological species can change into a different species. See DARWINISM; EVOLUTION.

**transgender** *adj.* having or relating to a GENDER IDENTITY that differs from the culturally determined gender roles for one's birth sex (i.e., the biological sex one was born with) or for one's sex as surgically assigned at birth. Transgender identities include TRANSEXUALISM, some forms of TRANSVESTISM, and INTERSEX. These identities should not be confused with sexual orientation. Also called **transgendered**. Compare CISGENDER. —**transgenderism** *n.*

**transgenerational design** see UNIVERSAL DESIGN.

**transgenerational patterns** patterns of behavior or personality characteristics that appear in successive generations, often referring especially to negative or maladaptive behaviors (e.g., drug abuse, adolescent pregnancy, child abuse).

**transgenic** *adj.* describing an organism in which a foreign or altered gene has been deliberately introduced into the GENOME.

**transience** *n.* **1.** impermanence. **2.** a feeling of impermanence combined with an anticipation of loss. In classical psychoanalytic theory, the idea that everything is transient may interfere with enjoyment and preclude the establishment of deep or lasting relationships. —**transient** *adj.*

**transient global amnesia (TGA)** a sudden GLOBAL AMNESIA—a form of transient AMNESTIC DISORDER—that typically resolves within 24 hours and occurs in the absence of any other neurological abnormalities. Individuals with TGA appear confused and disoriented and ask frequent repetitive questions to try and make sense of their experience. They are unable to acquire new memories (anterograde amnesia); they also exhibit amnesia for recently experienced events (retrograde amnesia). As the episode of TGA clears, new learning gradually returns to normal and retrograde amnesia shrinks; individuals are left with a dense memory gap for the period of TGA. Although TGA may be triggered by precipitating events (e.g., physical exertion), the mechanism responsible for its occurrence is poorly understood.

**transient ischemic attack (TIA)** an episode during which an area of the brain is suddenly deprived of oxygen because its blood supply is temporarily interrupted, for example, by thrombosis, embolism, or vascular spasm. Symptoms are the same as those of STROKE but disappear completely, typically within 24 hours.

**transient monocular blindness** see AMAUROSIS FUGAX.

**transient tic disorder** a TIC DISORDER involving the presence of one or more tics occurring many times a day for a period of between 4 weeks and 1 year. The tics may be simple (e.g., eye blinking, facial grimacing, throat clearing, sniffing) or more complex (e.g., hand gestures, stomping, ECHOLALIA, meaningless change in vocal pitch or volume).

**transient tremor** see TREMOR.

**transitional bilingual education** see BILINGUAL EDUCATION.

**transitional employment** a VOCATIONAL REHABILITATION program whereby individuals with disabilities or those who are economically, socially, or otherwise disadvantaged (e.g., those who are homeless or dependent on

welfare) are placed in temporary, entry-level positions in a competitive working environment to gain the skills and experience needed to obtain a permanent job in the community workforce. Positions are often provided by participating companies, and each placement typically lasts 6 to 9 months. Program participants may hold several transitional employment positions before obtaining permanent employment. See also SUPPORTED EMPLOYMENT.

**transitional living** a supervised living situation that allows patients with psychiatric or neurological disorders to make the transition from the dependence of a hospital setting to greater independence before returning to fully independent living.

**transitional object** **1.** a doll, blanket, or other thing spontaneously chosen and used by a child to ease the anxiety of separation from his or her first external OBJECT, the mother, until the child has established an internal object, or mental representation of her, that provides a sense of security and comfort. [first described by British psychoanalyst Donald Winnicott (1896–1971)] **2.** by extension, any person or thing that provides security, emotional well-being, and a symbolic connection with a valued other.

**transitional phenomenon** an internal representation of the relationship between an individual's inner subjective understanding of the world and the objective reality of the world. See also TRANSITIONAL OBJECT. [first described by British psychoanalyst Donald Winnicott (1896–1971)]

**transition probability** the probability of moving from one state of a system into another state. If a MARKOV CHAIN is in state *i*, the transition probability,  $p_{ij}$ , is the probability of going into state *j* at the next time step.

**transitive inference task** a type of task used to assess children's ability to make transitive inferences, that is, to infer the relationship between two concepts or objects based on earlier acquired information. In one example, a series of sticks is arranged in order of increasing length (e.g., A, B, C, D, E); if children know that  $D > C$  and  $C > B$ , they will make a correct transitive inference if they state that  $D > B$ , even though they have never seen these two sticks together.

**transitivity** *n.* the illusory assumption that one's symptoms or other characteristics are shared by other people. For example, individuals with schizophrenia might believe that others are also experiencing their hallucinations (e.g., hearing voices) or delusions (e.g., of being persecuted).

**transitivity** *n.* **1.** the quality of a relationship among elements such that the relationship transfers across those elements. For example, a transitive relationship would be the following: Given that  $a > b$ , and  $b > c$ , it must be the case that  $a > c$ . Compare INTRANSITIVITY. **2.** see STIMULUS EQUIVALENCE. —**transitive** *adj.*

**translation** *n.* **1.** the act or process of rendering words, sentences, or texts into a different language or the written or spoken rendering so produced. The degree to which a good translation reproduces the form as well as the content of the original will depend on a range of factors, notably the compatibility of the SOURCE LANGUAGE and the TARGET LANGUAGE, the nature of the original speech or text, and the purpose of the translation. See also INTERPRET. **2.** in genetics, the process whereby the genetic information contained in MESSENGER RNA, in the form of a sequence of CODONS, is "translated" into a sequence of amino acids in protein synthesis. See GENETIC CODE.

**translation and back-translation** a method of ensuring that the translation of an assessment instrument into another language is adequate, used primarily in cross-cultural research. A bilingual person translates items from the source language to the target language, and a different bilingual person then independently translates the items back into the source language. The researcher can compare the original with the back-translated version to see if anything important was changed in the translation.

**translocation** *n.* the breakage of a large segment of DNA from one chromosome and its subsequent attachment to a different chromosome. It is a type of chromosomal **MUTATION**.

**transmarginal inhibition (TMI)** in **CLASSICAL CONDITIONING**, the point at which the **CONDITIONED RESPONSE (CR)** elicited by a **CONDITIONED STIMULUS (CS)** can lead to a paradoxical reduction in the CR. Hans EYSENCK applied this concept of a conditioning threshold in his theory of personality, in which he proposed that introverts should respond more strongly than extroverts to conditions of high arousal (e.g., punishment) but that, depending on the interaction between personality and stimulus intensity, the presence of a TMI may result in lower levels of arousal in introverts than in extroverts.

**transmission** *n.* **1.** the act or process of causing something (e.g., a disease) to pass from one place or person to another. See also **HORIZONTAL TRANSMISSION**. **2.** in neuroscience, see **NEUROTRANSMISSION**. **3.** the inheritance of traits through successive generations. **4.** the handing down of customs and mores from generation to generation. See **SOCIAL TRANSMISSION**. See also **CULTURAL HERITAGE**. —**transmissible** *adj.* —**transmit** *vb.*

**transmitter** *n.* **1.** an instrument or device that encodes and sends a message or impulse to a receiver or aids in its transmission. **2.** a **NEUROTRANSMITTER**.

**transmuting internalization** in **SELF PSYCHOLOGY**, significant changes and growth that can occur in a patient during treatment as the **EMPATHIC FAILURES** that he or she experienced in early life are recognized and acknowledged by the therapist or analyst. [first described by Austrian-born U.S. psychoanalyst Heinz Kohut (1913–1981)]

**transneuronal degeneration** see **TRANSSYNAPTIC DEGENERATION**.

**transneuronal degeneration** see **TRANSSYNAPTIC DEGENERATION**.

**transorbital lobotomy** see **LOBOTOMY**.

**transparency** *n.* **1.** openness in relating to other people, with minimal attempts to make a good impression. **2.** the state of being “invisible” in certain social situations. An individual may try not to be noticed by avoiding eye contact, remaining still, hiding behind another person, or using other similar tactics.

**transpersonal psychology** an area of **HUMANISTIC PSYCHOLOGY** that focuses on the exploration of the nature, varieties, causes, and effects of “higher” states of consciousness and transcendental experiences. *Transpersonal* refers to the concern with ends that transcend personal identity and individual, immediate desires. See also **BEING COGNITION**; **PEAK EXPERIENCE**.

**transplacental transmission** see **HORIZONTAL TRANSMISSION**.

**transplantation** *n.* **1.** the surgical implantation of a tis-

sue or organ from one part of the body into another or from one person (the donor) into another (the recipient). **2.** the removal of a person from a permanent home to a temporary residence or nursing home.

**transporter** *n.* a protein complex that spans a cell membrane and conveys ions, neurotransmitters, or other substances between the exterior and interior of the cell. For example, at **SYNAPSES** between neurons, transporters in the **PRESYNAPTIC** membrane recognize and bind to neurotransmitter molecules and return them to the presynaptic neuron for reuse (see **REUPTAKE**). Transporters may utilize passive transport, in which a substance is transported into or out of a cell according to its concentration gradient across the cell membrane; or active transport, which is an energy-dependent process often relying on the hydrolysis of ATP to provide energy to facilitate movement of a substance from one side of the cell membrane to the other.

**transposition** *n.* **1.** the process of transferring a learned relationship between two or more stimuli to a new set of stimuli. For example, if an organism is trained to select a 10 cm diameter disk over a 7 cm disk, and then in a transfer test chooses a 13 cm disk over a 10 cm disk (even though reinforcement has been obtained only for choosing a 10 cm disk), transposition of the relationship “bigger than” has occurred. **2.** generally, an interchange of positions among two or more elements in a system. —**transpositional** *adj.*

**transposition of affect** the transfer of the emotional component associated with a particular idea or object to an unrelated idea or object. Also called **displacement of affect**.

**transsexualism** *n.* a condition consisting of a persistent sense of discomfort and inappropriateness relating to one's anatomical sex, with a persistent wish to be rid of one's genitals and to live as a member of the other sex. Those with this condition often seek to change their sex through surgical and hormonal means (see **SEX REASSIGNMENT**). Transsexualism is characterized as a **GENDER IDENTITY DISORDER** in *DSM-IV-TR*, where its diagnosis is applicable only if the condition is not due to another mental disorder, such as schizophrenia, and it is not associated with an **INTERSEX** condition or genetic abnormality. In *DSM-5*, the discomfort or distress that may be associated with one's sense of gender incongruence, not one's transsexual identification per se, is given primacy through the inclusion of **GENDER DYSPHORIA** in place of gender identity disorder as a diagnostic class. —**transsexual** *adj.*, *n.*

**transsynaptic degeneration** the degradation of a neuron that results from the death of a neighboring neuron with which it formed **SYNAPSES**. Also called **transneuronal degeneration**; **transneuronal degeneration**.

**transtentorial herniation** a type of **HERNIATION** that occurs when increased **INTRACRANIAL PRESSURE** (resulting, e.g., from a tumor or head injury) displaces the **MEDIAL TEMPORAL LOBE** or the deep hemisphere structures of the brain through the tentorial notch (an opening in the fold of dura mater that separates the cerebellum from the cerebrum). This causes displacement of the midbrain sideways and downward, which in turn may cause death. Also called **tentorial herniation**; **uncal herniation**.

**transtheoretical model (TTM)** a five-stage theory to explain changes in people's health behavior. It suggests that change takes time, that different interventions are effective at different stages, and that there are multiple out-

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comes (e.g., in belief structure, self-efficacy) occurring across the stages. See *STAGES OF CHANGE*. [developed in the 1970s by U.S. clinical psychologist James O. Prochaska (1942– )]

**transverse plane** see *HORIZONTAL PLANE*.

**transvestic fetishism** in *DSM-IV-TR*, a *PARAPHILIA* characterized by the wearing of female clothes by a heterosexual male for the purpose of achieving sexual excitement and arousal. The term in *DSM-5* is **transvestic disorder**, signifying that the paraphilia is only pathological if it causes distress or significant functional impairment. Whether disordered or not, it is distinct from *TRANSVES-TISM*, the nonsexualized *CROSS-DRESSING* by men or women of any sexual preference.

**transvestism** *n.* the habit, practiced by men or women, of wearing the clothes of the opposite sex but without the sexual arousal that *CROSS-DRESSING* serves in the predominantly male paraphilia, *TRANSVESTIC FETISHISM*. Also called **transvestitism**. —**transvestic** *adj.* —**transvestite** *n.*

**Tranxene** *n.* a trade name for *CLORAZEPATE*.

**tranylcypromine** *n.* see *MONOAMINE OXIDASE INHIBITOR*.

**trapezoid body** a bundle of transverse nerve fibers in the *PONS* that carries afferent fibers from the *COCHLEAR NUCLEI* to the *SUPERIOR OLIVARY COMPLEX* and the nuclei of the *LATERAL LEMNISCUS*, as well as efferent fibers from the *INFERIOR COLLICULI* and lateral lemnisci to the cochlear nuclei.

***t* ratio** the formula used for the *T TEST*, in which the numerator is the difference between the means of the two groups of interest and the denominator is a measure of the *DISPERSION* of the scores used to compute the means. The *t* value so obtained is compared to a *T DISTRIBUTION* table to determine if the difference between the means is significant or likely to have been a chance finding.

**trauma** *n.* **1.** any disturbing experience that results in significant fear, helplessness, *DISSOCIATION*, confusion, or other disruptive feelings intense enough to have a long-lasting negative effect on a person's attitudes, behavior, and other aspects of functioning. Traumatic events include those caused by human behavior (e.g., rape, war, industrial accidents) as well as by nature (e.g., earthquakes) and often challenge an individual's view of the world as a just, safe, and predictable place. **2.** any serious physical injury, such as a widespread burn or a blow to the head. —**traumatic** *adj.*

**traumagenic** *adj.* describing or relating to the dynamics by which a traumatic event (e.g., childhood sexual abuse) may have long-term negative consequences, including the development of a mental disorder.

**traumagenic psychosis** see *SITUATIONAL PSYCHOSIS*.

**trauma management therapy** a treatment program intended to alleviate the anxiety and fear, manage the anger, and enhance the interpersonal functioning of combat veterans with posttraumatic stress disorder (*PTSD*). It is a sequential multicomponent approach that combines (a) education, in which the client is informed about the symptom chronicity, skill deficits, and extreme social maladjustment associated with *PTSD*; (b) *EXPOSURE THERAPY*, in which the client reexperiences—in imagination or through virtual reality—his or her specific traumatic event during individually administered weekly sessions; (c) programmed practice, in which the client performs exposure-related homework assigned by the therapist; and (d) socioemo-

tional rehabilitation, in which the client participates in structured, group-administered social and emotional skills training sessions. [developed in 1996 by clinical psychologists B. Christopher Frueh (1963– ), Samuel M. Turner (1944–2005), Deborah C. Beidel, and Robert F. Mirabella and health administrator and political scientist Walter J. Jones]

**traumatic brain injury (TBI)** damage to brain tissue caused by external mechanical forces, as evidenced by objective neurological findings, posttraumatic amnesia, skull fracture, or loss of consciousness.

**traumatic disorder** any disorder that results from physical or psychological trauma.

**traumatic encephalopathy** an *ENCEPHALOPATHY* secondary to a serious brain injury.

**traumatic fistula** see *FISTULA*.

**traumatic grief** a severe form of separation distress that usually occurs following the sudden and unexpected death of a loved one. Numbness and shock are frequently accompanied by a sense of futility and the meaninglessness of life, although the total syndrome includes many other painful and dysfunctional responses.

**traumatic gynecologic fistula** see *FISTULA*.

**traumatic hemorrhage** a type of *CEREBRAL HEMORRHAGE* that results from serious brain injury.

**traveling salesperson problem (TSP)** a classic route-picking puzzle used in studies of problem solving in both human and nonhuman animals. The individual is presented with a number of points and must choose the most efficient possible route between them, as would a salesperson needing to stop at several locations. Humans often find the shortest route when there are only a few points, but when there are many stops, they instead use the “nearest neighbor” system (repeatedly selecting the location closest to their current one) to produce solutions.

**traveling wave** see *BASILAR MEMBRANE*.

**traveling wave theory** see *HEARING THEORIES*.

**trazodone** *n.* a chemically unique antidepressant that was introduced as a safer alternative to the tricyclic agents. Initially marketed in an immediate-release formulation, it was of limited use as an antidepressant due to its pronounced sedative effects and its association with prolonged, painful, and unwanted erections (priapism) in a very small number of men who took the drug. Its mechanism of antidepressant action is unclear; it is not a potent inhibitor of either serotonin or norepinephrine reuptake, and it is an antagonist at the 5-HT<sub>2</sub> serotonin receptor. Nonetheless, trazodone is commonly used in low doses for bedtime sedation or for controlling agitation and hostility in geriatric patients (U.S. trade name: **Desyrel**). Additionally, in 2010, the U.S. Food and Drug Administration approved trazodone in an extended-release formulation for treatment of depression (U.S. trade name: **Oleptro**).

**Treacher Collins syndrome** an autosomal dominant disorder that affects the development of small bones in the face. The facial anomalies—a small, retracted chin; small, downward-slanting eyes with defects of the iris; cleft palate; and deformed or absent external ears—vary from minimal to severe. Hearing loss may also occur. Most individuals with the syndrome have normal intelligence. Mutations in the *TCOF1* gene are the most common cause of the syndrome. Also called **Berry syndrome**; **Frances-**

**chetti-Zwahlen-Klein syndrome; mandibulofacial dysostosis.** [Edward Treacher Collins (1862–1919), British ophthalmologist]

**treatment** *n.* **1.** the administration of appropriate measures (e.g., drugs, surgery, psychotherapy) that are designed to relieve a pathological condition. **2.** the intervention to which some participants in an experimental design (the EXPERIMENTAL GROUP or treatment group) are exposed, in contrast to a CONTROL GROUP, who do not receive the intervention. Also called **treatment condition**. See TREATMENT LEVEL.

**treatment audit** a procedure that measures quality assurance in health care. Audit activities include assessment of the structure, process, and outcome of the services provided. Audits occur in a cyclical process, enabling the results of the assessment to be fed back to providers to improve or maintain the services assessed. See also PROGRAM INTEGRITY; PROGRAM MONITORING.

**treatment bias** **1.** the influence of a patient's personal characteristics (e.g., age, gender, race, class) on the type and quality of treatment provided to him or her. **2.** a practitioner's or researcher's unrealistically positive or negative attitude toward a particular type of intervention strategy. **3.** an overly favorable view held by healthcare consumers toward providers (e.g., physicians) who offer more treatment options even though their benefits may be equivocal.

**treatment effect** the magnitude of the effect that a treatment (i.e., the INDEPENDENT VARIABLE) has upon the response variable (i.e., the DEPENDENT VARIABLE) in a study. It is usually measured as the difference in standardized units between the level of response under a control condition and the level of response under the treatment condition. See EFFECT SIZE.

**treatment effectiveness evaluation** an assessment of the success of a treatment (e.g., psychotherapy) in relation to previously established treatment goals or other criteria.

**treatment facility** a place that offers short- or long-term therapeutic services for a physical or mental disorder, such as a child-guidance clinic, medical clinic, community mental health center, drop-in center, nursing home, psychiatric hospital, or residential treatment center.

**treatment integrity** see PROGRAM INTEGRITY.

**treatment level** the specific condition to which a group or participant is exposed in a study or experiment. For example, in a design employing four groups, each of which is exposed to a different dosage of a particular drug, each dosage amount represents a level of the treatment factor.

**treatment outcome research** research designed to evaluate the efficacy of interventions and to investigate the mechanism by which effective interventions produce change. It is intended to answer such questions as the following: Is treatment better than no treatment? Is one treatment better than another? If a treatment is effective, do some levels of the treatment produce better outcomes than others? Are the benefits of treatment worth the cost? See also THERAPY OUTCOME RESEARCH.

**treatment plan** the recommended steps of intervention that the therapist or counselor devises after an assessment of the client has been completed. Many MANAGED CARE plans require submission of formal, written treatment plans prior to approving mental health treatment. Compare TREATMENT PROTOCOL.

**treatment process research** research, usually of a clinical nature, to investigate how interventions activate mechanisms of behavior change. See also TREATMENT OUTCOME RESEARCH.

**treatment protocol** the formal procedures used in a system of psychotherapy. In some systems, such as EXPERIENTIAL PSYCHOTHERAPY, few explicit "rules" apply, whereas in others, such as BEHAVIOR THERAPY, strict adherence to a treatment protocol is often used to guide the work of the therapist. Compare TREATMENT PLAN.

**treatment refusal** unwillingness on the part of a patient or client to accept medical or psychological intervention. See also RIGHT TO REFUSE TREATMENT.

**treatment resistance** **1.** failure of a disease or disorder to respond positively or significantly to treatment, as in treatment-resistant depression. **2.** reluctance on the part of an individual to accept psychological or medical treatment or to comply with the therapist's or physician's prescribed regimens. In psychotherapy, treatment resistance is the lack of a positive response by a client to the techniques being used and reflects a rupture in the THERAPEUTIC ALLIANCE, which requires the use of other strategies by the therapist to repair the alliance. Examples of treatment resistance are noncompliance with assignments, extended silences, talking about tangential issues, and seemingly pointless debates about the therapist's approach, suggestions, and interpretations. See also NONADHERENCE.

**treatment-seeking behavior** the active pursuit of treatment by a person who has a disorder or who wishes to improve his or her general mental or physical functioning. See HELP-SEEKING BEHAVIOR.

**treatment trial** a research study designed to evaluate the effectiveness of an experimental intervention, its possible adverse effects, and other information that would contribute to the decision to use the intervention in the future. During the trial, the experimental intervention is compared with an existing one, which acts as a control. When the intervention being evaluated is a new drug, the term CLINICAL TRIAL is used instead.

**treatment validity** the extent to which an instrument is of value in identifying those individuals who are likely to benefit from a particular treatment or intervention. The term is used particularly in the field of special needs education.

**treatment variable** the INDEPENDENT VARIABLE, whose effect on a DEPENDENT VARIABLE is studied in a research project.

**treatment withholding** discontinuing medical treatment that has no benefit to the patient in terms of an eventual cure or short-term alleviation of symptoms.

**tree** *n.* a type of GRAPH in which there is only one path between any pair of nodes; the graph is undirected and has no cycles. In computer programming, a **rooted tree** represents a type of ranked nonlist data structure consisting of separate nodes linked in a parent-child hierarchy, with every node, other than the root node, having a single parent. Nodes that share a parent are sibling nodes, and a node with no children is called a **leaf node**. This data structure is commonly used in database programming to represent hierarchical data and to facilitate search algorithms.

**tree diagram** **1.** a diagram for generating and depicting a probability distribution. It shows all possible outcomes of an event and is used to determine the probability of getting

specific results when the possibilities are nested, such as in an experimental memory task in which participants view multiple target stimuli one at a time and then determine whether subsequently presented cues are targets or distractors. **2.** see DENDROGRAM. **3.** more generally, any branching depiction of a process or condition.

**tremor** *n.* any involuntary trembling of the body or a part of the body (e.g., the hands) due to neurological or psychological causes. **Psychological** (or **psychogenic**) **tremor** may be mild, due to tension, or violent and uncontrolled in severe disturbances. Toxic effects of drugs or heavy metals may produce a **transient tremor**. A **coarse tremor** involves a large muscle group in slow movements, whereas a **fine tremor** is caused by a small bundle of muscle fibers that move rapidly. Some tremors occur only during voluntary movements (see ACTION TREMOR); others occur in the absence of voluntary movement (see RESTING TREMOR). See also ESSENTIAL TREMOR.

**trend analysis** any of several techniques designed to uncover systematic patterns (trends) in a set of variables, such as linear growth over time or quadratic increases in response to increases in the level of an INDEPENDENT VARIABLE (e.g., increased dosage levels). Such analysis is often used to predict future events. Also called **trend test**.

**trend study** a LONGITUDINAL DESIGN in which data are collected at periodic intervals on samples drawn from a particular population and are used to reveal trends (systematic tendencies or patterns) over time.

**trephination** *n.* a surgical procedure in which a disk of bone is removed from the skull with a circular instrument (a **trephine**) having a sawlike edge. On the basis of evidence found in skulls of Neolithic humans, trephining is believed to be one of the oldest types of surgery. Among the numerous conjectural reasons given for the practice is that it was a treatment for headaches, infections, skull fractures, convulsions, mental disorders, or supposed demonic possession. Also called **trepanation**. —**trephine** *vb.*

**treppe** *n.* see STAIRCASE PHENOMENON.

**TRH** abbreviation for THYROTROPIN-RELEASING HORMONE.

**triad** *n.* a set of three people involved in a dynamic relationship, such as a father, mother, and child or a therapist and a couple receiving marital therapy. The three people are presumed to form a triangle with unique group characteristics and internal alliances.

**triad training model** an approach to training therapists and counselors that is intended to foster understanding of clients from other cultures and develop multicultural counseling competencies. In the model's didactic simulation, a trainee therapist or counselor from a particular culture is matched with a three-person team: (a) a pro-counselor, representing the trainee's own culture; (b) a coached client, who is hostile or resistant to the trainee, the therapy, or the trainee's culture; and (c) a catalyst anti-counselor, who represents the client's ethnic group, religion, or other affiliation. The catalyst serves as a bridge of communication and support for the client, and the dynamic among all parties reveals issues, content, and effective approaches to the trainee. See also MULTICULTURAL THERAPY. [developed by U.S. psychologist Paul Bodholdt Pedersen (1936– )]

**triage** *n.* a method of enhancing the effects of treatment that involves the selection and sorting of patients in an or-

derly and systematic fashion. The patients are then routed to the most appropriate treatment services available.

**trial** *n.* **1.** in testing, conditioning, or other experimentation, a single performance of a given task (e.g., one run through a maze) or a single presentation of a stimulus (e.g., one viewing of an ordered list of three-letter words). **2.** see CLINICAL TRIAL; TREATMENT TRIAL. **3.** in parapsychology research, any single attempt by a participant to identify a TARGET by CLAIRVOYANCE or TELEPATHY or to influence a target by PSYCHOKINESIS. In experiments using ZENER CARDS, each turn of a card is therefore a separate trial.

**trial-and-error learning** a type of learning in which the organism successively tries various responses in a situation, seemingly at random, until one is successful in achieving the goal. Across successive trials, the successful response is strengthened and appears earlier and earlier. MAZE LEARNING, with its eventual elimination of blind-alley entrances, is an example of trial-and-error learning. The term derives from the stimulus–response theory of Edward L. THORNDIKE as an explanation of instrumental or reinforcement learning, although Thorndike initially preferred the more descriptive phrase **trial-and-accidental success**.

**trial consultant** a social scientist who assists attorneys with various aspects of a trial in which his or her expertise is relevant. **Trial consultation** typically includes helping to prepare individuals for testimony, developing surveys to help in jury selection and trial strategy development, and conducting CHANGE OF VENUE surveys. Also called **jury consultant**.

**trial design** the strategy or design used to conduct a CLINICAL TRIAL for the purpose of evaluating the efficacy of a new treatment.

**trial lesson** a diagnostic technique that provides information about a child's learning style and the individualized teaching approach that would be most effective for that child.

**trial marriage** an arrangement by which a couple attempt to determine their compatibility and suitability for formal marriage by living together for a period of time.

**trial therapy** a planned process of temporary treatment, either in the early sessions of therapy or as a set of sessions prior to the initiation of long-term therapy, to test whether the client is suitable or ready for a commitment to the therapeutic process. Trial therapy is also used to assess whether the therapist believes that his or her treatment approach is compatible with the client and can meet the client's particular needs.

**triangular test** a test involving SEQUENTIAL ANALYSIS that can be stopped when a particular POWER is reached and results can be evaluated. It is typically used in clinical trials when it is difficult to recruit participants.

**triangular theory of love** the proposition that the various kinds of love can be characterized in terms of the degree to which they possess three basic components that together can be viewed as forming the vertices of a triangle. The intimacy component refers to feelings of closeness, connectedness, and bondedness, which give rise to the experience of warmth in a loving relationship. The passion component refers to the drives that lead to romance, physical attraction, sexual consummation, and related phenomena in loving relationships. The commitment component refers to the decision that one loves someone and desires to maintain that love; it thus includes the cognitive elements

that are involved in decision making about the existence of and potential long-term commitment to a loving relationship. See COMPANIONATE LOVE; EROTIC LOVE; PASSIONATE LOVE; ROMANTIC LOVE. [advanced in 1986 by U.S. psychologist Robert J. Sternberg (1949– )]

**triangulation** *n.* **1.** the process of confirming a hypothesis by collecting evidence from multiple sources. There are several different types of triangulation. In **data triangulation**, various sampling methods are used: The data are collected at different times, from different groups of people, and so forth. **Investigator triangulation** involves multiple researchers in an investigation; **theory triangulation** involves using more than one theoretical scheme to interpret a phenomenon; and **METHODOLOGICAL TRIANGULATION** involves using a variety of interviews, observations, questionnaires, documents and other data-collection methods. The data from each source support the hypothesis from a somewhat different perspective and therefore increase confidence in its validity. **2.** in **FAMILY THERAPY**, a situation in which two members of a family in conflict each attempt to draw another member to their side. Triangulation can occur, for example, when two parents are in conflict and their child is caught in the middle. —**triangulate** *vb.*

**triarchic theory of intelligence** a theory of intelligence in which three key abilities—analytical, creative, and practical—are viewed as largely (although not entirely) distinct. According to the theory, intelligence comprises a number of information-processing components, which are applied to experience (especially novel experiences) in order to adapt to, shape, and select environments. The theory is triarchic because it contains three subtheories: one specifying the components of intelligence (see **COMPONENTIAL SUBTHEORY**), another specifying the kinds of experience to which the components are applied (see **EXPERIENTIAL SUBTHEORY**), and a third specifying how the components should be used in various kinds of environmental contexts (see **CONTEXTUAL SUBTHEORY**). [proposed in 1985 by Robert J. Sternberg (1949– ), U.S. psychologist]

**Triavil** *n.* a trade name for a combination of the tricyclic antidepressant **AMITRIPTYLINE** and the antipsychotic **PERPHENAZINE**, used for the treatment of concurrent anxiety and depression.

**triazolam** *n.* a short-acting **BENZODIAZEPINE** used primarily as a **HYPNOTIC** and also to manage anxiety associated with dental procedures. Following reports of severe psychological disturbances associated with its use, including behavioral disinhibition, aggression, agitation, and short-term memory impairment (anterograde amnesia), its sale was prohibited in the United Kingdom in 1991. U.S. trade name: **Halcion**.

**tribade** *n.* a woman who achieves sexual pleasure by rubbing her genitals against those of another woman. This activity is known as **tribadism**, which is also occasionally used as a synonym for lesbianism. —**tribadic** *adj.*

**tribar** *n.* see **PENROSE TRIANGLE**.

**TRICARE** *n.* see **CIVILIAN HEALTH AND MEDICAL PROGRAM OF THE UNIFORMED SERVICES**.

**tricho-** (**trich-**) *combining form* hair or hairlike formation.

**trichobezoar** *n.* see **TRICHOPHAGIA**.

**trichomegaly-retinal degeneration syndrome** a rare disorder of unknown cause marked by abnormally short stature, long eyebrows and eyelashes, poor vision due

to retinal pigment degeneration, slow psychomotor development, and intellectual disability. Also called **congenital trichomegaly**; **Oliver–McFarlane syndrome**.

**trichophagia** *n.* the chronic eating of one's own or other people's hair (in contrast to **trichophagy**, the biting of one's own hair). Often co-occurring with **trichotillomania**, **trichophagia** is a relatively rare disturbance that may result in a potentially life-threatening **trichobezoar**, a mass of ingested hair in the stomach that interferes with gastrointestinal peristalsis. When the **trichobezoar** develops a long tail that extends into the small intestine, the condition is referred to as **Rapunzel syndrome**.

**trichotillomania** *n.* a disorder characterized by the persistent pulling of hair from any part of one's body on which it grows, often with conspicuous hair loss. Feelings of increasing tension before the act and feelings of release or satisfaction on completion are common. Although traditionally considered an impulse-control disorder, **trichotillomania** is increasingly identified as an obsessive-compulsive condition, as occurs in **DSM–5**. Also called **hair-pulling disorder**.

**trichromatic theory** one of several concepts of the physiological basis of color vision, as derived from experiments on color mixture in which all hues were able to be matched by a mixture of three primary colors. The **YOUNG–HELMHOLTZ THEORY OF COLOR VISION** is the best known trichromatic theory. Subsequent studies determined that there are three different retinal cone **PHOTOPIGMENTS** with peak sensitivities roughly corresponding to the three primary colors of trichromatic theory: blue, green, and red. Also called **three-component theory**. See also **OPPONENT PROCESS THEORY OF COLOR VISION**.

**trichromatism** *n.* normal color vision: the capacity to distinguish the three primary color systems of light—dark, red—green, and blue—yellow, attributable to the presence of all three types of **PHOTOPIGMENT**. Also called **trichromatopsia**. See also **ACHROMATISM**; **DICHROMATISM**; **MONOCHROMATISM**.

**tricyclic antidepressant (TCA)** any of a group of drugs, developed in the 1950s, that were the original **FIRST-LINE MEDICATIONS** for treatment of depression. They are presumed to act by blocking the reuptake of monoamine neurotransmitters (serotonin, dopamine, and norepinephrine) into the presynaptic neuron, thereby increasing the amount of neurotransmitter available for binding to postsynaptic receptors. Tricyclic antidepressants have a characteristic three-ring molecular core. They may be tertiary amines (e.g., **IMIPRAMINE**, **AMITRIPTYLINE**) or their metabolites, which are secondary amines (e.g., **DESI-PRAMINE**, **NORTRIPTYLINE**). Other members of the group include **CLOMIPRAMINE**, **protriptyline** (U.S. trade name: **Vivactil**), **DOXEPIN**, and **trimipramine** (U.S. trade name: **Surmontil**). Side effects of TCAs include significant anticholinergic effects (e.g., dry mouth, blurred vision, constipation, urinary retention), drowsiness or insomnia, confusion, anxiety, nausea, weight gain, and impotence. They can also cause cardiovascular complications (particularly disturbances in heart rhythm). The tricyclics represented the mainstay of antidepressant treatment from the introduction of imipramine in 1957 until fluoxetine (**Prozac**)—the first **SSRI**—was introduced in 1987. Although they are effective as antidepressants, their adverse side effects and—more significantly—their lethality in overdose have led to a profound decline in their use. They remain, however, the standard against which other antidepressants are com-



pared; no other class of antidepressants has demonstrated more clinical efficacy.

**Tridimensional Personality Questionnaire (TPQ)** see TEMPERAMENT AND CHARACTER INVENTORY.

**tridimensional theory of feeling** the theory that feelings can vary along three dimensions: pleasantness–unpleasantness (hedonic quality), excitement–calmness, and arousal–relaxation. The tridimensional theory is used to define different emotions as characterized by different combinations and successions of feelings and by the specific course of change of the feelings along each of the three dimensions. [introduced by Wilhelm WUNDT]

**trier of fact** the person or party in a court of law who hears the evidence and decides the case. This may be either a judge or a jury. Also called **fact finder**.

**trifluoperazine** *n.* a HIGH-POTENCY ANTIPSYCHOTIC of the piperazine PHENOTHIAZINE class. Like other agents of this class, it acts primarily by blocking postsynaptic dopamine D2 receptors. Trifluoperazine is appropriate for the treatment of schizophrenia in both adults and children and of severe, nonpsychotic anxiety in adults only. It may also be used to control behavioral symptoms associated with dementia. Because of its potentially severe side effects (e.g., TARDIVE DYSKINESIA, NEUROLEPTIC MALIGNANT SYNDROME)—and the availability of other, relatively nontoxic anxiolytics (e.g., the benzodiazepines)—it is not recommended for routine use in treating anxiety. U.S. trade name: **Stelazine**.

**trigeminal chemoreception** the stimulation of free nerve endings of the trigeminal nerve in the nasal cavity by odorous chemicals, leading to sensations of tickling, stinging, warming, or cooling.

**trigeminal nerve** the fifth and largest CRANIAL NERVE, which carries both sensory and motor fibers. The motor fibers are primarily involved with the muscles used in chewing, tongue movements, and swallowing. The sensory fibers innervate the same areas, including the teeth and most of the tongue in addition to the jaws. Some fibers of the trigeminal nerve innervate the cornea, face, scalp, and the dura mater of the brain. The trigeminal nerve is also sensitive to the airflow changes that occur during breathing.

**trigeminal neuralgia** a form of unilateral facial NEURALGIA involving the trigeminal nerve, characterized by paroxysms of excruciating pain. Also called **tic douloureux**.

**trigeminal nucleus** either of two nuclei associated with the three main roots of each trigeminal nerve. The **spinal trigeminal nucleus** extends downward in the medulla oblongata to the upper region of the spinal cord and receives fibers from pain and temperature receptors. The **principal sensory trigeminal nucleus** receives large myelinated fibers from pressure receptors in the skin and relays impulses to the thalamus.

**trigeminal rhizotomy** see RHIZOTOMY.

**trigger** **1.** *n.* a stimulus that elicits a reaction. For example, an event could be a trigger for a memory of a past experience and an accompanying state of emotional arousal. **2.** *vb.* to act as a trigger.

**trigger feature** a specific feature, simple or complex, of a stimulus that may cause a response in a specific neuron. For example, some cells in the visual cortex respond to bars

of light with specific orientations, whereas others respond to more complex visual patterns, such as faces.

**triggering cause** a stimulus or phenomenon that initiates the immediate onset of a behavior problem. See also PRECIPITATING CAUSE. Compare PREDISPOSING CAUSE.

**trigger zone** a low-threshold region for eliciting a response. In a neuron, the trigger zone for evoking an action potential is the AXON HILLOCK, where POSTSYNAPTIC POTENTIALS summate. In the brain, stimulation of the CHEMORECEPTOR TRIGGER ZONE in the medulla oblongata provokes vomiting.

**trigram** *n.* **1.** any three-letter combination, particularly a nonsense syllable used in studies of learning and memory. **2.** in studies of language processing, a sequence of three words, syllables, or other items in which the identity of the first two items is used as a basis for predicting the third.

**trigraph** *n.* see DIGRAPH.

**trihexyphenidyl** *n.* an ANTICHOLINERGIC DRUG used in the treatment of drug-induced parkinsonian symptoms, such as those produced with use of conventional antipsychotics, and as an adjunctive treatment for Parkinson's disease. It acts by exerting a direct inhibitory effect on the parasympathetic nervous system and a relaxing effect on smooth musculature. U.S. trade name: **Artane**.

**triiodothyronine** (**T<sub>3</sub>**) *n.* an iodine-containing hormone that, together with THYROXINE, regulates metabolic activity. See THYROID HORMONE.

**Trilafon** *n.* a trade name for PERPHENAZINE.

**trimester** *n.* any of the three approximately 3-month periods of a human pregnancy.

**trimethoxyamphetamine (TMA)** *n.* a synthetic AMPHETAMINE derivative that is a CNS STIMULANT with purported hallucinogenic properties similar to LSD and the naturally occurring hallucinogen Mescaline. The side effects and toxicity of TMA and other "designer psychedelics" are similar to those of MDMA.

**trimipramine** *n.* see TRICYCLIC ANTIDEPRESSANT.

**trimmed mean** a mean calculated by averaging the scores in a distribution after removing equal numbers of the highest and lowest values. For example, a researcher may decide to exclude the top and bottom 10% of the distribution; the mean is then calculated on the remaining 90% of scores.

**trimming** *n.* **1.** the exclusion of a fixed percentage of cases at each end of a distribution before calculating a statistic on the set of data. This is done to eliminate the influence of extreme scores on the estimate. **2.** in PATH ANALYSIS, the removal of nonsignificant paths after the first run of analyses. The analysis is then rerun until the best fitting model is obtained. The ultimate model should then be CROSS-VALIDATED on another data set.

**trinucleotide repeat** a contiguous repetition of the same three NUCLEOTIDES within a nucleic acid (DNA or RNA). The occurrence of extra trinucleotide repeats in certain genes causes dysfunction, including HUNTINGTON'S DISEASE and FRAGILE X SYNDROME.

**trip** **1.** *n.* slang for an episode of intoxication with LSD or another hallucinogen. A **bad trip** is slang for a negative intoxication experience, which can range from unpleasant sensations to an acute psychotic episode. Also called **acid**

**trip.** **2.** *vb.* to take or to experience the results of taking LSD or another hallucinogen.

**tripa ida** see SUSTO.

**tripartite model of attitudes** a theory of attitude structure proposing that an attitude is based on or consists of affective, cognitive, and behavioral components. The affective component refers to feelings associated with the ATTITUDE OBJECT, the cognitive component to beliefs about attributes associated with the attitude object, and the behavioral component to past behaviors and future intentions associated with the attitude object.

**triphasic pattern** a characteristic sequence of muscle activations—AGONIST, then ANTAGONIST, and finally agonist again—observed in rapid, unidirectional movements toward a target. Also called **three-burst pattern**.

**triple blind** see BLIND.

**triple-code model of imagery** a theory to explain why IMAGERY works in performance enhancement. It suggests three effects of imagery: (a) the image itself, an internal sensation that is representative of the outside world and its objects; (b) the somatic response, that is, the psychophysiological response to the image; and (c) the meaning of the image, which is unique to the individual.

**triple-X condition** see XXX SYNDROME.

**triptan** *n.* any of a class of VASOCONSTRICTOR drugs used in the treatment of migraine headache, the prototype of which is **sumatriptan**. Triptans exert their therapeutic effect by acting as SEROTONIN AGONISTS at 5-HT<sub>1B</sub> and 5-HT<sub>1D</sub> receptors, causing the constriction of cerebral blood vessels. Triptans should not be administered concurrently with MONOAMINE OXIDASE INHIBITORS and should be used cautiously with SSRIs to avoid the risk of precipitating a SEROTONIN SYNDROME.

**trisomy** *n.* see AUTOSOME. —**trisomic** *adj.*

**trisomy 13** a syndrome involving an extra chromosome 13, resulting in the birth of an infant with a variety of problems, including severe intellectual disability; cleft lip and palate; polydactyly (extra fingers or toes); cerebral anomalies; and ocular abnormalities, such as missing or very small eyes, cataracts, and defects in the iris. Many infants with the syndrome die within their first days or weeks of life, and less than 20% of children with this condition live past their first year. Also called **D trisomy syndrome**; **Patau syndrome**.

**trisomy 18** a congenital disorder in which a person has a third copy of chromosome 18 instead of the usual two copies. It is characterized by low birth weight with MICROCEPHALY, various facial anomalies, a prominent occiput, overlapping of the index finger over the third finger, and visual abnormalities. Less than 10% of children live past their first year, and these children usually have severe intellectual disability. Also called **Edwards syndrome**; **E trisomy**.

**trisomy 21** see DOWN SYNDROME.

**trisomy X** see XXX SYNDROME.

**tritanopia** *n.* blue–green color blindness in which there is some loss of luminosity in the blue portion of the visual spectrum as a result of a deficiency of SHORT-WAVELENGTH PIGMENT. Tritanopia is relatively rare.

**triune brain** the view, now outmoded, that the brain consists of three layers reflecting its evolutionary develop-

ment. The first and oldest is the archipallium, or R-complex (meaning reptilian complex and including the BRAINSTEM and CEREBELLUM); the second is the paleomammalian system, or LIMBIC SYSTEM; and the most recently evolved is the neopallium, or NEOCORTEX, also known as the **neomammalian brain**. [proposed by U.S. physician and neuroscientist Paul D. MacLean (1913–2007)]

**trochlear nerve** the fourth CRANIAL NERVE, which contains motor fibers supplying the superior oblique muscle of the eyeball.

**troilism** *n.* **1.** sexual activity in which one person (a **troilist**) enjoys observing his or her usual partner in sexual activities with a third person. **2.** any sexual activity involving three people simultaneously.

**troland** (symbol: td) *n.* the unit of illumination at the retina, defined as the illumination when a light source of 1 cd/m<sup>2</sup> is viewed through a standard pupil with an area of 1 mm<sup>2</sup>. [named after Leonard T. TROLAND]

**trophic** *adj.* **1.** describing or relating to activities associated with nourishment, including the ingestion of food and metabolism of nutrients. **2.** describing or relating to the nourishing and supportive functions of the CELL BODY of a neuron, as distinct from the activity of impulse reception and transmission. See also NEUROTROPHIN.

**trophic hormone** see TROPIC HORMONE.

**trophic nerve** any nerve that regulates the nutrition of a tissue.

**trophotropic** *adj.* related to or concerning a capacity or propensity for renewal of energy, that is, for rest. Compare ERGOTROPIC.

**tropia** *n.* the relative deviation of the visual axes during binocular viewing of a single target, resulting in abnormal alignment of the eyes that convergence cannot correct (see STRABISMUS). The term is most commonly used in compound words, such as **exotropia** (outward deviation) and **esotropia** (inward deviation).

**tropic hormone (trophic hormone)** any of a class of hormones from the anterior PITUITARY GLAND that affect the secretion of other endocrine glands. The tropic hormones include THYROID-STIMULATING HORMONE, CORTICOTROPIN, FOLLICLE-STIMULATING HORMONE, and LUTEINIZING HORMONE.

**tropism** *n.* a form of orientation observed in both plants and nonhuman animals toward or away from a stimulus, such as sunlight or gravity. The flower of a plant may turn gradually to face the sun as it moves across the sky (**heliotropism**), while its roots follow magnetic lines of force and the pull of gravity. Tropism contrasts with TAXIS, which is a directed movement toward or away from a stimulus. Compare KINESIS. —**tropic** *adj.*

**troposmia** *n.* a distorted odor perception in the presence of an odorant. Typically, pleasant or neutral stimuli are perceived as unpleasant. See also DYSOSMIA; PAROSMIA.

**tropotaxis** *n.* see TAXIS.

**truancy** *n.* absence from school without permission. Persistent truancy before the age of 13 is an example of a serious violation of major rules, one of the symptoms of CONDUCT DISORDER. Also called **school truancy**. —**truant** *adj.*

**true experiment** a study in which participants are assigned at random to two or more experimentally manipu-

lated treatment conditions or to a treatment group and a control group. This type of experiment is in contrast to QUASI-EXPERIMENTAL DESIGNS, such as NATURAL EXPERIMENTS and FIELD EXPERIMENTS.

**true-false test** a test in which the participant must respond to statements, words, and the like with either *true* or *false*.

**true schizophrenia** see NUCLEAR SCHIZOPHRENIA.

**true score** in CLASSICAL TEST THEORY, that part of a measurement or score that reflects the actual amount of the attribute possessed by the individual being measured.

**true self** in psychoanalytic theory, the total of an individual's potentialities that could be developed under ideal social and cultural conditions. The term is used in the context of Erich FROMM's approach to neurosis as a reaction to cultural pressures and repressed potentialities. It is also used in the CLIENT-CENTERED THERAPY of Carl ROGERS and in the OBJECT RELATIONS THEORY of British psychoanalyst Donald Winnicott (1896–1971). The realization of the true self is a major goal of therapy.

**true variance** naturally occurring variability within or among research participants. This variance is inherent in the nature of individual participants and is not due to measurement error, imprecision of the model used to describe the variable of interest, or other extrinsic factors. It represents the variance of the TRUE SCORES among the participants taking the measure.

**Truman Show delusion** a firmly held but erroneous belief that one is the star of a reality television show. Specifically, individuals feel that the people in their lives are actors and that their activities are continuously being broadcast to a worldwide audience. The Truman Show delusion was first proposed in 2006 by psychiatrist Joel Gold and philosopher Ian Gold, brothers who contend that its breadth of mistrust and its potential prevalence among people who otherwise have no diagnosable mental illness are factors that distinguish it from other types of delusions. Critics, however, say the phenomenon's psychological features overlap with those of other delusions to such an extent that it is not a unique entity but rather a variation of traditionally recognized psychotic themes of grandeur and persecution or surveillance. [coined from *The Truman Show*, a 1998 film in which the protagonist Truman Burbank discovers that his entire life has been fabricated by the media and that he is the unwitting focus of a television show]

**truncated data** a set of data in which some values are excluded as a matter of deliberate selection. For example, if the distribution of age being studied focuses on 21 to 65 years, those under 21 and over 65 are excluded from the analyses. Truncated data can be contrasted with CENSORED DATA, in which certain values in the data sample are unknown owing to some random cause.

**truncated distribution** a set of scores lacking values beyond a specific maximum point, below a specific minimum point, or both. See TRUNCATED DATA.

**trust 1.** *n.* reliance on or confidence in the dependability of someone or something. In interpersonal relationships, trust refers to the confidence that a person or group of people has in the reliability of another person or group; specifically, it is the degree to which each party feels that they can depend on the other party to do what they say they will do. The key factor is not the intrinsic honesty of the other people but their predictability. Trust is considered by most psy-

chologists to be a primary component in mature relationships with others, whether intimate, social, or therapeutic. See BASIC TRUST VERSUS MISTRUST; SECURITY. **2.** *vb.* to have trust in someone or something.

**trust exercise** a common procedure in GROUP THERAPY and GROWTH GROUPS intended to help participants learn to trust other people. The trust exercise may involve putting a member in a vulnerable position requiring him or her to depend on other group members for support. See also BLIND WALK.

**trust versus mistrust** see BASIC TRUST VERSUS MISTRUST.

**truth bias** the tendency to assume, in the absence of evidence, that interaction partners are telling the truth. The truth bias arises because, more often than not, partners do tell the truth. Researchers believe that truth bias contributes to relationship success by minimizing suspiciousness, but makes it more difficult to detect deception in partners who are, in fact, lying.

**truth serum** a colloquial name for drugs, especially the barbiturates AMOBARBITAL, PENTOBARBITAL, and THIOPENTAL, that are injected intravenously in mild doses to help elicit information by inducing a relaxed, semihypnotic state in which an individual is less inhibited and more communicative. The term is derived from the reported use of such drugs by police to extract confessions from suspects.

**truth value** in logic and philosophy, the truth or falsity of a proposition. See BIVALENCE; INFINITE-VALUED LOGIC.

**tryptamine** *n.* a monoamine alkaloid, derived from TRYPTOPHAN, that is found in plants, fungi, and animals, including in small amounts in the mammalian brain, where it may act as a neurotransmitter. Serotonin and the hormone melatonin are related to tryptamines.

**tryptamine derivative** any of a group of naturally occurring or synthetic psychoactive substances, derived from tryptamine, that are chemically related to serotonin (5-hydroxytryptamine). They include agents with hallucinogenic effects similar to those of LSD, such as DMT (dimethyltryptamine), DET (diethyltryptamine), BUFOTENIN, and PSILOCIN. Tryptamine derivatives may also be classified as substituted indolealkylamines.

**tryptophan** *n.* one of the essential amino acids of the human diet. It is a precursor of the neurotransmitter serotonin and of the hormone melatonin and plays a role in general physiological processes. In plants and many animals, it is also a precursor of the B vitamin NICOTINIC ACID. Tryptophan depletion—loss of tryptophan in the brain—may be induced for research purposes.

**tryptophan hydroxylase** an enzyme that catalyzes the first step in the biosynthesis of SEROTONIN. It uses tetrahydrobiopterin as a coenzyme to transform the dietary amino acid L-tryptophan to 5-HYDROXYTRYPTOPHAN (5-HTP). This reaction is the rate-limiting step in serotonin synthesis, limited by levels of tryptophan in the brain as well as by levels of activity of neurons that use serotonin as a neurotransmitter.

**TSA** abbreviation for TRANSCORTICAL SENSORY APHASIA.

**T-scope** *n.* see TACHISTOSCOPE.

**T score** a type of STANDARDIZED SCORE based on a score distribution that has a mean of 50 and a standard deviation of 10. For example, a RAW SCORE that is 1 standard de-

viation above its mean would be converted to a *T* score of 60.

**TSCS** abbreviation for TENNESSEE SELF-CONCEPT SCALE.

**TSB** abbreviation for TAY–SACHS DISEASE.

**TSH** abbreviation for THYROID-STIMULATING HORMONE.

**TSP** abbreviation for TRAVELING SALESPERSON PROBLEM.

***T*-squared test** see HOTELLING'S *T*<sup>2</sup> TEST.

**TSS** symbol for TOTAL SUM OF SQUARES.

**TTA** abbreviation for THRESHOLD TRAITS ANALYSIS.

**TTCT** abbreviation for TORRANCE TESTS OF CREATIVE THINKING.

***t* test** any of a class of statistical tests based on the fact that the test statistic follows the *T* DISTRIBUTION when the NULL HYPOTHESIS is true. Most *t* tests deal with hypotheses about the mean of a population or about differences between means of different populations, wherein those populations show NORMAL DISTRIBUTIONS and the variances are unknown and need to be estimated. The test can be used with independent groups (e.g., test scores of those who were given training vs. a control group without training) or dependent groups (e.g., test scores before vs. after training). Also called **Student's *t* test**.

**TTI** abbreviation for TRAIT–TREATMENT INTERACTION.

**TTM** abbreviation for TRANSTHEORETICAL MODEL.

**TTR** abbreviation for TYPE–TOKEN RATIO.

**TTS** abbreviation for TEMPORARY THRESHOLD SHIFT.

**TTX** abbreviation for TETRODOTOXIN.

**TTY** abbreviation for text telephone. See TELECOMMUNICATION DEVICE.

**tubal ligation** a surgical procedure for female STERILIZATION by cutting, cauterizing, tying, or blocking the FALLOPIAN TUBES. Tubal ligation does not affect sex drive, intercourse, or menstrual cycles. Although the effects of the procedure may sometimes be reversed and the ability to conceive restored, tubal ligation is usually considered permanent.

**tubal pregnancy** a pregnancy in which the fertilized ovum is implanted in the wall of a FALLOPIAN TUBE rather than in the lining of the uterus. It is the most common form of ECTOPIC PREGNANCY. Also called **fallopian-tube pregnancy**.

**tubectomy** *n.* see SALPINGECTOMY.

**tuberculous meningitis** a complication of tuberculosis resulting from the spread of the tubercle bacilli from the lungs to the brain via the bloodstream. Tuberculous lesions in the SUBARACHNOID SPACE rupture to cause inflammation of the middle and innermost meninges (the arachnoid and pia). The symptoms are the same as those associated with other forms of BACTERIAL MENINGITIS, and HYDROCEPHALUS may develop.

**tuberoinfundibular tract** one of the major neural pathways in the brain that use dopamine as their principal neurotransmitter (see DOPAMINERGIC). The cell bodies of this tract, which is a local circuit in the hypothalamus, project short axons to the pituitary gland. The tuberoinfundibular tract is associated with the regulation of hypothalamic function and of specific hormones (e.g., prolactin). Altera-

tions in hormone function involving this tract are often seen in patients taking phenothiazine ANTIPSYCHOTICS.

**tuberomammillary nucleus** a nucleus in the HYPOTHALAMUS that contains neurons responsive to HISTAMINE and is involved in maintaining wakefulness and arousal.

**tubular vision** see TUNNEL VISION.

**tufted cell** one of the specialized types of cells involved in the sense of smell. The tufted cells are efferent neurons located in the OLEFACTORY BULB. They synapse with receptor neurons in the glomerular layer (see GLOMERULUS) and exit the bulb in the LATERAL OLEFACTORY TRACT.

**TUI** abbreviation for TANGIBLE USER INTERFACE.

**TUITs** acronym for task-unrelated images and thoughts. See MIND WANDERING.

**Tukey–Kramer procedure** an extension of TUKEY'S HONESTLY SIGNIFICANT DIFFERENCE TEST (HSD test) so that it can be used with samples of unequal size. Whereas the HSD test yields a single critical difference (CD) for each pair of means, the Tukey–Kramer test uses a different CD as required to evaluate the significance of the difference between each pair of means. [John Wilder Tukey (1915–2000) and Clyde Y. Kramer, U.S. statisticians]

**Tukey's honestly significant difference test (Tukey's HSD test)** a MULTIPLE COMPARISON procedure that is used to test for significant differences between all possible pairs of mean values on a variable for groups of research participants; it is generally applied after an ANALYSIS OF VARIANCE has determined that there is a significant difference among three or more means. The procedure involves simultaneously comparing all possible pairs of means based on a single quantity, called the *honestly significance difference* (HSD), such that if the difference between any two group means exceeds the HSD, the corresponding population means are said to be significantly different from each other. Tukey's HSD test preserves the FAMILY-WISE ERROR RATE by adjusting the overall SIGNIFICANCE LEVEL to take into account the fact that multiple *T* TESTS are being conducted. Also called **Tukey's range test**. [John Wilder Tukey]

**Tukey test of additivity** an approach used in a TWO-WAY ANALYSIS OF VARIANCE to assess whether the independent variables are additively related to the EXPECTED VALUE of the dependent variable or whether there is an INTERACTION EFFECT. Also called **Tukey's one-degree-of-freedom test**; **Tukey test of nonadditivity**. [John Wilder Tukey]

**tulipmania** *n.* **1.** the extraordinary overvaluing of tulip bulbs that occurred in Holland in the 17th century. First introduced into Holland in the late 1500s, bulbs soon became highly prized and costly. Their value escalated over a period of 40 years until some of the rarer bulbs cost as much as a private home; such bulbs were no longer planted but instead displayed as an indication of the owner's wealth. Some individuals willingly traded all of their possessions and savings to purchase bulbs, which they then hoped to resell for a much higher price as the market price escalated. The price of bulbs plummeted unexpectedly in 1637, causing financial ruin for many who had speculated in the bulb market. Also called **tulipomania**. **2.** any investment craze that is marked by a rapid increase in the price of a commodity with relatively little value.

**tumescence** *n.* a state of swelling or being swollen, as in swelling of the penis or clitoris as a result of sexual stimulation. Compare DETUMESCENCE. —**tumescent** *adj.*

**tumor** *n.* 1. see NEOPLASM. 2. swelling, one of the cardinal signs of inflammation.

**tuning curve** a graph of neuronal response (usually measured in action potentials or spikes per unit time) as a function of a continuous stimulus attribute, such as orientation, wavelength, or frequency. A neuron is said to be “tuned” for the stimulus that evokes the greatest response, and the width of the curve from the half-maximum response on either side of the peak indicates how broadly or narrowly tuned a neuron is for a particular stimulus attribute. In the auditory system, it is a measure of FREQUENCY SELECTIVITY. For example, in recordings from an auditory nerve fiber, the threshold is usually defined as a fixed increase in firing rate in response to a pure tone. Typically, tuning curves are V-shaped with a **characteristic frequency (CF)** or **best frequency (BF)** at which the fiber requires the minimal sound level to reach the threshold response. A **psychophysical tuning curve (PTC)** shows the relationship between the level and frequency of a pure-tone masker (see AUDITORY MASKING) that is necessary to just mask a probe signal of fixed level and frequency. PTCs bear a strong resemblance to the actual tuning curves measured in auditory nerve fibers. See CRITICAL BAND; TONOTOPIC ORGANIZATION.

**T-unit** *n.* in linguistics, short for minimal terminable unit. T-units are the shortest grammatically complete units into which a string of written or spoken language can be divided (i.e., by insertion of periods and capital letters). The mean length of T-units is often used as a measure of the structural complexity of student writing. [first described in 1965 by U.S. educationalist Kellogg W. Hunt]

**tunnel vision** a VISUAL FIELD DEFECT producing the effect of perceiving the world through a long tunnel or tube. Peripheral vision may be entirely lost. Tunnel vision can occur in one or both eyes in uncontrolled glaucoma and retinitis pigmentosa and in both eyes after bilateral injury to visual processing areas beyond the optic chiasm. It may also be a conversion symptom. Also called **tubular vision**.

**turbinate** *n.* any of three bony shelves in the nasal cavity. The turbinates produce turbulence in the airflow passing from the nostrils to the OLEFACTORY MUCOSA, and this turbulence distributes air across the OLEFACTORY RECEPTORS in the mucosa.

**Turing machine** a hypothetical machine designed in the 1930s to determine whether an algorithm could be described and used to prove any mathematical problem that was provable. The Turing machine consisted of four components: an alphabet of tokens, a finite-state machine, an infinite tape, and a read–write head that was used for reading and recording information produced by the finite-state machine from and onto the tape. The tape was infinite only in that it was expected that the read–write head would always be supplied with data as well as have space to write new data. There are multiple ways of describing the state of the Turing machine. One approach is with a set of five values, supplied by the alphabet of tokens: (a) the state of the finite-state machine, (b) the token read from the tape, (c) the token written to the tape, (d) the instruction for moving the read–write head, and (e) the next state of the finite-state machine. Sets of these patterns of five tokens make up the program for the machine. When the program is able to be located on the tape of the machine, it is called a **universal Turing machine**. It was later demonstrated that the Turing machine was an example of a class of maximally powerful machines that could compute any function

that was computable. See also GÖDEL’S PROOF. [Alan Mathison **Turing** (1912–1954), British mathematician]

**Turing test** a test proposed in 1950 (originally called the **imitation game**) to determine in what situations a computer program might be said to be intelligent. A person is isolated in a room but is connected to either a computer or another person outside of the room. If the person in the room cannot tell, by asking questions, whether he or she is talking to the computer or to the other person, then the program on the machine must be seen as intelligent. See also CHINESE ROOM ARGUMENT. [Alan **Turing**]

**Turner syndrome** a chromosomal disorder, specific to females, marked by the absence of all or a part of one of the two X (female) chromosomes. The effects include **gonadal dysgenesis** (underdevelopment or absence of primary and secondary SEX CHARACTERISTICS), infertility, and various other abnormalities (e.g., short stature, lack of menstruation). Although the disorder is genetic, it is not inherited, occurring instead as a random event during cell division in early fetal development. See also NOONAN SYNDROME. [reported in 1938 by Henry H. **Turner** (1892–1970), U.S. endocrinologist]

**turnover** *n.* in industrial and organizational settings, the number of employees who leave their jobs during a given period. A distinction is generally made between **controllable turnover**, as by dismissal or voluntary resignation, and **uncontrollable turnover**, as by retirement or redundancy. The **turnover rate** is calculated by dividing controllable turnover by the average number of employees in the organization or unit during this period. This rate can be an indicator of the general level of job satisfaction among employees. Also called **labor turnover**; **staff turnover**. See INVOLUNTARY TURNOVER; VOLUNTARY TURNOVER.

**turn taking** in social interactions, alternating behavior between two or more individuals, such as the exchange of speaking turns between people in conversation or the back-and-forth grooming behavior that occurs among some nonhuman animals. Basic turn-taking skills are essential for effective communication and good interpersonal relations, and their development may be a focus of clinical intervention for children with certain disorders (e.g., autism).

**TUTs** acronym for task-unrelated thoughts. See MIND WANDERING.

**twelfth cranial nerve** see HYPOGLOSSAL NERVE.

**twelve-step program** a distinctive approach to overcoming addictive, compulsive, or behavioral problems that was developed initially in ALCOHOLICS ANONYMOUS (AA) to guide recovery from alcoholism and is now used, often in an adapted form, by a number of other SELF-HELP GROUPS. The twelve-step program in AA asks each member to (a) admit that he or she cannot control his or her drinking; (b) recognize a supreme spiritual power, which can give the member strength; (c) examine past errors, a process that is carried out with another member who serves as sponsor; (d) make amends for these errors; (e) develop a new code and style of life; and (f) help other alcoholics who are in need of support. Variations of this model also exist for drug abuse and addiction, gambling addiction, and other problems.

**22q11.2 deletion syndrome** a disorder caused by the deletion of a small piece of chromosome 22, resulting in heart defects, cleft palate or other palate defects, and mild differences in facial features, among other effects.

Children with the disorder may also have developmental delays, learning disabilities, attention-deficit/hyperactivity disorder, and autism. As they age, they have an increased risk of developing schizophrenia, depression, anxiety, and bipolar disorder. Because the signs and symptoms are so varied, several conditions (e.g., DiGeorge syndrome, DiGeorge anomaly, velocardiofacial syndrome, Shprintzen syndrome, conotruncal anomaly face syndrome, thymic aplasia syndrome) were once thought to be separate but are now understood to be part of the spectrum of 22q11.2 deletion syndrome.

**twilight state** a state of clouded consciousness in which the individual is temporarily unaware of his or her surroundings, experiences fleeting auditory or visual hallucinations, and responds to them by performing irrational acts, such as undressing in public, running away, or committing violence. The disturbance occurs primarily in temporal lobe epilepsy, dissociative reactions, and alcoholic intoxication. On regaining normal consciousness, individuals usually report that they felt they were dreaming and have little or no recollection of their actual behavior.

**twilight vision** see SCOTOPIC VISION.

**twin control** in a TWIN STUDY, a method in which the target twin—that is, the one who has had certain experiences or training or has been exposed to the experimental condition—is compared with the twin who has not had the experiences, training, or treatment and therefore serves as a CONTROL. Also called **cotwin control**.

**twinning** *n.* **1.** the simultaneous production of two embryos within a single uterus. **2.** the production of two symmetrical objects from a single object by division.

**twins** *pl. n.* see DIZYGOTIC TWINS; MONOZYGOTIC TWINS.

**twinship transference** in SELF PSYCHOLOGY, a NARCISSTIC TRANSFERENCE that, when activated in treatment, results in the patient experiencing the analyst or therapist as very similar in characteristics to himself or herself, thereby enhancing the patient's experience of being understood and valued. Also called **alter-ego transference**. Compare IDEALIZING TRANSFERENCE; MIRROR TRANSFERENCE. [first described by Austrian-born U.S. psychoanalyst Heinz Kohut (1913–1981)]

**twin study** research utilizing twins. The purpose of such research is usually to assess the relative contributions of heredity and environment to some attribute. Specifically, twin studies often involve comparing the characteristics of identical and fraternal twins and comparing twins of both types who have been reared together or reared apart. For example, two types of study have been used to investigate intelligence in twins: (a) identical twins reared apart—here, the genotypes (genetic makeups) are identical, but as there is no shared environment, any disparity in intelligence must result from the different environments; and (b) comparisons between identical twins reared together and fraternal twins reared together—here, one can assume that each pair of twins shares the same environment, but whereas the identical twins have 100% of their genes in common, the fraternal twins share only 50% of their genes, suggesting that if the identical twins show a greater similarity in intelligence than do the fraternal twins, the genes must play a role in that trait. The assumptions made in these studies, however, are never completely fulfilled. For example, the identical twins reared apart have had some common environment, if only their intrauterine experiences. Moreover, identical twins reared together usually

have more similar environments than fraternal twins raised together. These differences can make the estimations of heritability of intelligence open to some doubts.

**twitching** *n.* a series of small muscular contractions.

**two-by-two contingency table** see TWO-BY-TWO TABLE.

**two-by-two factorial design** an experimental design in which there are two INDEPENDENT VARIABLES each having two levels. When this design is depicted as a matrix, two rows represent one of the independent variables and two columns represent the other independent variable. Also called **two-by-two design**; **two-way factorial design**. See FACTORIAL DESIGN.

**two-by-two table** a type of TWO-WAY TABLE used to display and analyze data for two DICHOTOMOUS VARIABLES. For example, suppose a survey of a group of 100 participants reported information on two variables: (a) gender (male or female) and (b) major in college (social sciences or humanities). The results could be shown in a two-by-two table. Also called **fourfold table**; **two-by-two contingency table**.

**two-chair technique** see EMPTY-CHAIR TECHNIQUE.

**two-dimensional leader behavior space** see BLAKE–MOUTON MANAGERIAL GRID.

**two-factor analysis of variance** see TWO-WAY ANALYSIS OF VARIANCE.

**two-factor design** see TWO-WAY DESIGN.

**two-factor theory 1.** a theory that avoidance behavior is the result of two kinds of conditioning. Initially, stimuli that precede the presentation of the stimulus to be avoided (e.g., an electric shock) are established as aversive by CLASSICAL CONDITIONING (Factor 1). Next, the subject learns to terminate the conditional aversive stimulus by means of ESCAPE CONDITIONING (Factor 2). [proposed by O. Hobart MOWRER] **2.** a theory that intelligence comprises two kinds of factors: a GENERAL FACTOR, whose influence pervades all tests of intelligence, and various SPECIFIC FACTORS, each of whose influence extends only to a single test in a test battery. [proposed in 1904 by Charles SPEARMAN]

**two-factor theory of emotion** see SCHACHTER–SINGER THEORY.

**two-factor theory of work motivation** a theory holding that the factors causing worker satisfaction (those addressing higher order psychological needs such as achievement, recognition, and advancement; see MOTIVATORS) and the factors causing worker dissatisfaction (those addressing basic needs and interpersonal processes, including salary, work conditions, and supervision; see HYGIENE FACTORS) are not opposites of one another but are, in fact, independent factors. Thus, to improve job attitudes and productivity—that is, work motivation—employers and administrators must evaluate and address both sets of factors separately. [proposed by U.S. clinical psychologist Frederick Herzberg (1923–2000) in his 1959 book *The Motivation to Work*]

**two-neuron arc** see MONOSYNAPTIC ARC.

**two-parameter model** in ITEM RESPONSE THEORY, a model that specifies two parameters affecting an individual's response to a particular test item: (a) the difficulty level of the item and (b) the ITEM DISCRIMINABILITY. See also RASCH MODEL; THREE-PARAMETER MODEL.

**two-person psychology** a term used in RELATIONAL PSYCHOANALYSIS to underscore its shift in theory from CLASSICAL PSYCHOANALYSIS, which emphasizes a patient's intrapsychic life, to a perspective that emphasizes the importance of the dyad between a patient and analyst or therapist for forming self-understanding and relational meaning. Compare ONE-PERSON PSYCHOLOGY.

**two-plus-two phenomenon** a fallacy of reasoning in which observed or accepted facts are considered to make a certain conclusion so obvious that the logical analysis necessary to justify the conclusion is omitted.

**two-point discrimination** the ability to sense the contact of a touch stimulus at two different points on the hand at the same time. The **two-point discrimination test** is used in studies of the effects of parietal lesions of the brain, particularly in patients with open head injuries.

**two-point threshold** the smallest distance between two points of stimulation on the skin at which the two stimuli are perceived as two stimuli rather than as a single stimulus. Also called **spatial threshold**.

**two-process model of recall** the hypothesis that retrieval of a memory can involve two stages: a search that locates material in memory followed by a decision regarding whether this is the information sought. This model was proposed to explain the occurrence of higher rates of accurate memory in the RECOGNITION METHOD than in the RECALL METHOD. Also called **generate-recognize model**; **two-process model of retrieval**.

**two-sample test** any procedure in which data are collected on two samples and then subjected to a test for SIGNIFICANT DIFFERENCES between the two samples. Compare SINGLE-SAMPLE TEST.

**two-sample *t* test** a type of T TEST in which the mean value on a variable obtained by one group is compared to the mean value obtained by another distinct group. In other words, two discrete experimental groups are evaluated against one another. By contrast, in the SINGLE-SAMPLE T TEST, the results of only one experimental group are compared to some standard of reference.

**two-sided message** see ONE-SIDED MESSAGE.

**two-spirit** *n.* in some Native American cultures, a person who takes on the gender identity of the opposite sex with the approval of the culture. The culture often views such individuals as having a special spiritual or guiding role in the community. In the Navajo culture, such a person is termed a **naadle**; in the Lakota culture, the term **winkte** is used; and in other cultures, a literal translation of "man-woman" might be used. The traditional scholarly term **berdache** is now used less frequently because of its negative implications of male prostitution or of a "kept" status.

**two-stage memory theory** a concept that information acquired by learning is stored first in an IMMEDIATE MEMORY before being transferred into a permanent memory (see LONG-TERM MEMORY; PERMASTORE). For example, a new telephone number might be retained in immediate memory at first, but with REPETITION it eventually transfers to permanent memory. This transfer is described sometimes in the psychological terms of REHEARSAL and sometimes in the biological terms of memory CONSOLIDATION. See DUAL-STORE MODEL OF MEMORY.

**two-stage sampling** see MULTISTAGE SAMPLING.

**two-stage stopping rule** in a CLINICAL TRIAL compar-

ing two treatments, a strategy in which results are examined after only a fraction of the planned number of participants in each group has completed the trial (usually either half or two thirds of the patients). At this point, the test statistic is computed and the trial stopped if the difference between treatment means is significant at the SIGNIFICANCE LEVEL set for this first stage. If not, the remaining participants in each group are studied, the test statistic is recomputed, and the means compared at a significance level set for the second stage. The significance levels for the two stages should be such that they equal the overall significance level for the trial, usually .05 or .01.

**two-tailed hypothesis** see NONDIRECTIONAL HYPOTHESIS.

**two-tailed test** see NONDIRECTIONAL TEST.

**two-way analysis of covariance** an ANALYSIS OF COVARIANCE in which there are two INDEPENDENT VARIABLES and a COVARIATE whose effects the researcher wishes to bring under statistical control.

**two-way analysis of variance** an ANALYSIS OF VARIANCE that isolates the MAIN EFFECTS of two independent variables, *a* and *b*, and their INTERACTION EFFECT,  $a \times b$ , on a dependent variable. Also called **two-factor analysis of variance**.

**two-way design** a type of FACTORIAL DESIGN in which two INDEPENDENT VARIABLES are manipulated. Also called **two-factor design**.

**two-way factorial design** see TWO-BY-TWO FACTORIAL DESIGN.

**two-way interaction** in a TWO-WAY ANALYSIS OF VARIANCE, the joint effect of both independent variables, *a* and *b*, on a dependent variable. A STATISTICALLY SIGNIFICANT two-way interaction indicates that there are differences in the influence of each independent variable at their different levels (e.g., the effect of  $a_1$  and  $a_2$  at  $b_1$  is different from the effect of  $a_1$  and  $a_2$  at  $b_2$ ). See also HIGHER ORDER INTERACTION.

**two-way table** a table in which the joint FREQUENCY DISTRIBUTION of two INDEPENDENT VARIABLES is arrayed. See also TWO-BY-TWO TABLE.

**two-word stage** the developmental period, between approximately 18 and 24 months of age, during which children use two words at a time when speaking (e.g., *dog bone*, *mama cup*). See PIVOT GRAMMAR; TELEGRAPHIC SPEECH.

**Tylenol** *n.* a trade name for ACETAMINOPHEN.

**tympatric cavity** see MIDDLE EAR.

**tympatric membrane** a conically shaped membrane that separates the external ear from the middle ear and serves to transform the pressure waves of sounds into mechanical vibration of the OSSICLES. The first ossicle (malleus) is attached to the inner surface of the tympatric membrane. Also called **eardrum**.

**tympatric reflex** see TENSOR TYMPANI.

**typanometry** *n.* the measurement of the mobility of the tympatric membrane. It is used in the diagnosis of CONDUCTION DEAFNESS. —**typanometric** *adj.*

**typanoplasty** *n.* surgery to repair the eardrum or the bones of the middle ear.

**Type A personality** a personality pattern characterized by chronic competitiveness, high levels of ACHIEVEMENT

MOTIVATION, impatience and a distorted sense of time urgency, **polyphasic activity** (e.g., shaving or eating while reading a newspaper), and aggressiveness and hostility. The entire array of traits and behaviors characterizing Type A personality was believed at one time to be connected to the development of coronary heart disease. Epidemiological studies have failed to confirm that connection, but evidence does suggest that one Type A feature in particular—hostility—does contribute to the pathogenesis of heart disease. Compare TYPE B PERSONALITY. [outlined in the 1970s by U.S. physicians Meyer Friedman (1910–2001) and Ray H. Rosenman]

**Type B personality** a personality pattern characterized by low levels of competitiveness and frustration, an easygoing approach, and a lack of aggressiveness and hostility. Type B individuals typically do not feel the need to prove their superiority or abilities. Compare TYPE A PERSONALITY. [outlined in the 1970s by U.S. physicians Meyer Friedman (1910–2001) and Ray H. Rosenman]

**Type I cell** a type of TASTE CELL that is electron dense, appearing dark when viewed by electron microscopy. Type I cells comprise about 60% of the cells in a TASTE BUD. Located peripherally in the bud, they may help hold its goblet shape. Each cell sends a spray of 30 to 40 MICROVILLI through the TASTE PORE to sample the chemical environment. Also called **dark cell**.

**Type II cell** a type of TASTE CELL that is electron lucent, appearing light when viewed by electron microscopy. Type II cells comprise 20% of the cells in a TASTE BUD. They are larger than TYPE I CELLS, though their volume comes from girth rather than length. They send short, blunt MICROVILLI through the TASTE PORE to sample the chemical environment. Also called **light cell**.

**Type III cell** a type of TASTE CELL that, when viewed by electron microscopy, is similar to a TYPE II CELL but has dense-cored vesicles in its basal region. Type III cells comprise 15% of the cells in a TASTE BUD; they contain acetylcholine and serotonin for activation of peripheral nerve fibers. Also called **intermediate cell**.

**Type IV cell** a type of cell assumed to be a STEM CELL for the creation of TASTE CELLS. Type IV cells comprise 5% of the cells in a TASTE BUD and are confined to its basal lamina. These cells have no receptor function, possessing neither access to the TASTE PORE nor synapses with peripheral nerve fibers. Also called **basal cell**.

**type-changing plastic surgery** plastic surgery that modifies one's features from one type to another (e.g., a "nose job"), as contrasted with restorative methods that return features to their previous condition (e.g., a face lift).

**Type I conditioning** see CLASSICAL CONDITIONING.

**Type II conditioning** see INSTRUMENTAL CONDITIONING.

**Type 1 diabetes** see DIABETES MELLITUS.

**Type 2 diabetes** see DIABETES MELLITUS.

**Type D personality** a "distressed" personality pattern, characterized by a high degree of negative affectivity (i.e., a tendency to experience negative emotions) in combination with a conscious tendency to suppress self-expression in social interaction (see SOCIAL INHIBITION). Accumulating evidence suggests that Type D individuals are at increased risk of developing coronary heart disease and other chronic medical conditions. [elaborated by Belgian medical psychologist Johan K. L. Denollet (1957– )]

**Type I error** the error of rejecting the NULL HYPOTHESIS when it is in fact true. Investigators make this error when they believe they have detected an effect or a relationship that does not actually exist. The projected probability of committing a Type I error is called the SIGNIFICANCE LEVEL or alpha ( $\alpha$ ) level. Also called **alpha error**; **rejection error**.

**Type II error** the error of failing to reject the NULL HYPOTHESIS when it is in fact not true. Investigators make this error if they conclude that a particular effect or relationship does not exist when in fact it does. The probability of committing a Type II error is called the beta ( $\beta$ ) level of a test. Conversely, the probability of not committing a Type II error (i.e., of detecting a genuinely significant difference between samples) is called the POWER of the test, where power =  $1 - \beta$ . Also called **beta error**.

**Type III error 1.** the error that occurs when there is a discrepancy between the research focus and the hypothesis actually tested. For example, a Type III error would have happened if a researcher collected data on INDIVIDUAL DIFFERENCES within a sample and determined the causes of variation but the question of interest concerned differences between populations. In other words, a Type III error involves providing the right answer for the wrong question. Also called **Type 0 error**. **2.** the error that occurs when a researcher correctly rejects the NULL HYPOTHESIS of no difference between samples but then makes an incorrect inference about the direction of the difference. Researchers investigating the direction of a relationship (e.g., "Which is more?" or "Which is better?") will make a Type III error if they use a NONDIRECTIONAL TEST to make a directional decision. **3.** in clinical tests, attributing a lack of results to the weakness of a treatment when, in fact, the problem was that the treatment was not administered properly.

**type identity theory** see IDENTITY THEORY.

**Type R conditioning** see INSTRUMENTAL CONDITIONING.

**Type S conditioning** see CLASSICAL CONDITIONING.

**type theory** any hypothetical proposition or principle for the grouping of people by kind of personality or by personality characteristics. One of the earliest is the HUMORAL THEORY, which held sway in medicine and protopsychology, to one degree or another, from about the 5th century BCE through the 17th century and the rise of empiricism. JUNGIAN TYPOLOGY offers another example of a theoretical system of personality classification.

**type-token distinction** in semantics and semiotics, the distinction between a general category of items having certain defining features (type) and a particular exemplar of that category (token). A token is taken to possess the essential properties of the type to which it belongs and will thus have a representative function. According to some theories, the type-token distinction plays an important role in semantic memory. [introduced by Charles S. PEIRCE]

**type-token ratio (TTR)** a comparison, expressed as a ratio, of the number of types (distinct groups or categories of words) to the number of tokens (the total quantity of words) in a particular communication. The type-token ratio is used in linguistics analyses and studies to assess an individual's verbal diversification. The greater the number of types compared with the number of tokens, the higher the index and therefore the greater the diversification.

**Type T personality** a personality pattern characterized by the need to seek situations that cause or increase



arousal, stimulation, thrills, and an adrenaline rush. See SENSATION SEEKING.

**typical antipsychotic** see ANTIPSYCHOTIC.

**typicality effect** the finding that people are quicker to make category judgments about typical members of a category than they are to make such judgments about atypical members. For example, they are more quickly able to judge that a dog is a mammal than they are able to judge that a whale is a mammal.

**typical schizophrenia** see NUCLEAR SCHIZOPHRENIA.

**typing** *n.* **1.** identifying as a type, as in SEX TYPING and GENDER TYPING. **2.** representing something in terms of its common or typical characteristics. See CLASSIFICATION.

**typology** *n.* any analysis of a particular category of phenomena (e.g., individuals, things) into classes based on common characteristics, such as a typology of personality. —**typological** *adj.*

**tyramine** *n.* a BIOGENIC AMINE found in high concentra-

tions in a variety of sources, including ripe cheese, broad beans, ergot, mistletoe, some wines, and many foodstuffs that are aged or produced via enzymatic action. Tyramine is derived from the amino acid tyrosine and is sympathomimetic, causing an increase in blood pressure and heart action. Foods containing tyramine react with MONOAMINE OXIDASE INHIBITORS, preventing normal metabolism of the tyramine and resulting in significantly elevated blood pressure and possibly a hypertensive crisis.

**tyrosine** *n.* a nonessential AMINO ACID present in most proteins. It is a precursor of the CATECHOLAMINE neurotransmitters dopamine, norepinephrine, and epinephrine, which differ structurally only at one position of the molecule. Tyrosine is derived from the essential amino acid phenylalanine.

**tyrosine hydroxylase** an enzyme that catalyzes the first, and rate-limiting, step in the biosynthesis of the CATECHOLAMINE neurotransmitters dopamine, norepinephrine, and epinephrine. It transforms dietary tyrosine, using the coenzyme tetrahydrobiopterin and molecular oxygen, to L-DOPA.

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# Uu

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**U** symbol for URACIL.

**UCLA Loneliness Scale** a 20-item self-report measure developed at the University of California, Los Angeles, to assess subjective feelings of loneliness or social isolation. It consists of descriptive statements of feelings of loneliness and nonloneliness, rated on a scale of 1 (*never*), 2 (*rarely*), 3 (*sometimes*), and 4 (*often*). The range of possible scores is 20 to 80, with higher scores signifying greater loneliness. [developed in the 1980s by U.S. psychologists Daniel Russell, Letitia A. Peplau, and Carolyn E. Cutrona]

**UCR** abbreviation for UNCONDITIONED RESPONSE.

**UCR fees** abbreviation for usual, customary, and reasonable fees. See CUSTOMARY, PREVAILING, AND REASONABLE FEES.

**Ucs** abbreviation for UNCONSCIOUS.

**UCS** abbreviation for UNCONDITIONED STIMULUS.

**U fiber** a nerve fiber that loops through the white matter beneath the cerebral cortex to connect one cortical area to another. U fibers provide the fastest route for cortical transmission of impulses; the alternative intracortical pathway is composed of very fine fibers with slow transmission rates.

**UG** abbreviation for UNIVERSAL GRAMMAR.

**ulcer** *n.* an erosion of a tissue surface, such as the mucosal lining of the digestive tract. **Peptic ulcers**, which affect the stomach and duodenum, are associated with increased secretion of hydrochloric acid and pepsin, a digestive enzyme, or increased susceptibility of the lining of the stomach and duodenum to the effects of these substances (see GASTRODUODENAL ULCERATION). See also DYSPEPSIA.

**Ullrich-Noonan syndrome** see NOONAN SYNDROME. [Otto **Ullrich** (1894–1957), German pediatrician; Jacqueline **Noonan** (1928– ), U.S. pediatrician]

**ulnar nerve** the sensory and motor nerve that innervates the lateral (outer) side of the forearm and hand. Its fibers are derived from the eighth cervical and first thoracic SPINAL ROOTS, and they pass through the medial section of the BRACHIAL PLEXUS.

**ultimate attribution error** the tendency for persons from one group (the ingroup) to determine that any bad acts by members of an outgroup—for example, a racial or ethnic minority group—are caused by internal attributes or traits rather than by outside circumstances or situations, while viewing their positive behaviors as merely exceptions to the rule or the result of luck. Conversely, ingroup members will overestimate the effects of their own perceived internal attributes—for example, intelligence—and underplay situational forces when evaluating their successes, and they will place more emphasis on external factors when explaining their failures or faults. See also FUNDAMENTAL ATTRIBUTION ERROR; GROUP-SERVING BIAS. [first described in 1979 by U.S. psychologist Thomas F. Pettigrew]

**ultimate cause** see REMOTE CAUSE.

**ultimate explanation** an account or explanation for a particular behavior in terms of its adaptive value. Compare PROXIMATE EXPLANATION.

**ultimate opinion testimony** OPINION TESTIMONY by an expert witness that directly informs the court about the issue in dispute. For example, an expert witness who testifies that the defendant is insane is giving ultimate opinion testimony.

**ultimatum game** an experimental game in which one player (the proposer) makes an offer to another player (the responder) concerning a sum of money that the two must apportion between them, and the responder must then either accept or reject this offer. If the offer is accepted, the money is split as proposed. If the offer is rejected, neither player receives anything. Both players are fully aware of the rules and consequences of the game, which is usually played with real money provided by the experimenter. The ultimatum game is often used in studies of fairness, bargaining, and rational decision making, which typically find that if the responder deems the offer to be unfair (e.g., less than 25% of the total), he or she will reject it rather than accept anything at all. [developed in 1982 by German economists Werner Güth (1944– ), Rolf Schmittberger, and Bernd Schwarze]

**Ultiva** *n.* a trade name for remifentanyl. See FENTANYL.

**ultradian rhythm** any periodic variation in physiological or psychological function (see BIOLOGICAL RHYTHM) recurring in a cycle of more than 24 hours, such as the human menstrual cycle. Compare CIRCADIAN RHYTHM; INFRADIAN RHYTHM.

**ultrasonic communication** among some nonhuman animals, the use of sound frequencies above the range of human hearing (i.e., above 20 kHz) for communication. Ultrasonic communication is commonly used by bats and dolphins, in which ECHOLLOCATION is important for navigation or finding prey. High-frequency signals do not travel very far, but, because of their short wavelength, they can provide excellent information about the location of prey and other objects in the environment. Compare INFRASONIC COMMUNICATION.

**ultrasonic irradiation** a form of psychosurgery in which sound waves of a frequency of 1000 kHz are directed through trephine openings in the skull for up to 14 minutes. It is an alternative to prefrontal lobotomy (see LOBOTOMY) and is rarely used now.

**ultrasound** *n.* sound whose frequency exceeds the human audibility range, often used to measure and record structures and structural change within the body in the imaging technique called **ultrasonography** (or **sonography**). Echoes from ultrasound waves reflected from tissue surfaces are recorded to form structural images for diagnostic purposes, such as to examine a growing fetus during pregnancy or to examine internal organs, such as the heart, liver, kidneys, and gallbladder, for signs of health or disease. Compare INFRASOUND.

**ultraviolet (UV)** *n.* the portion of the electromagnetic

spectrum between 0.5 nm and 400 nm. The upper range of the ultraviolet portion of the spectrum is just below the wavelengths perceived as blue. Ultraviolet stimuli can be seen by some insects and fish because they have photopigments in their retinas that are sensitive to these wavelengths.

**ululation** *n.* a shrill lament or wailing associated with emotional expression and ritual behavior in various cultures.

**umami** *adj.* denoting the taste of foods rich in protein (e.g., meats, fish, some vegetables, cheeses), as represented by the taste of monosodium glutamate, which is used primarily to enhance other flavors. Umami is sometimes described as “savory” and is widely considered to be a PRIMARY TASTE quality, joining sweet, salty, sour, and bitter. [Japanese, “delicious”]

**umbilical cord** a cordlike structure containing two arteries and a vein in a cylindrical membrane that connects the fetus to the PLACENTA during pregnancy.

**UMP test** abbreviation for UNIFORMLY MOST POWERFUL TEST.

**Umweg problem** see DETOUR PROBLEM.

**Umwelt** *n.* in the thought of German philosopher Martin Heidegger (1889–1976), that aspect of DASEIN (being-in-the-world) that is constituted by a person’s engagement with the world immediately around him or her. The term was introduced into the vocabulary of psychology chiefly through the work of Swiss existential psychologist Ludwig Binswanger (1881–1966). Compare EIGENWELT; MITWELT. [German, literally: “around world”]

**unaspirated sound** see ASPIRATION.

**unattended input** any stimulus that is not a focus of attention. In DUAL-TASK PERFORMANCE tests, it is the flow of information that participants do not intend to monitor and of which they are not explicitly aware. See also DUAL-TASK COMPETITION.

**unbalanced bilingual** a person who speaks two languages but is more proficient in one than in the other. Compare BALANCED BILINGUAL.

**unbalanced design** an experimental design having multiple INDEPENDENT VARIABLES in which the number of measurements or observations obtained is different for each condition under study. Although BALANCED DESIGNS generally are preferred for their greater POWER in statistical analyses, unbalanced designs nonetheless may arise due to participant ATTRITION or other unavoidable factors. For example, if a researcher is investigating how sleep and diet influence academic performance and only 35 of the 40 college undergraduates recruited to participate were able to do so through the full term of the project, certain data will be missing for the five people who left the study prematurely and the design will become unbalanced.

**unbiased** *adj.* impartial or without net error. For example, in unbiased procedures, studies, and the like, any errors that do occur are random and therefore self-canceling in the long run.

**unbiased estimator** a quantity calculated from sample data whose value is representative of the true quantity in the larger population. In other words, when data from samples are used to make inferences about unknown quantities (parameters) in populations, an unbiased estimator is one that over repeated sampling has an average

equal to the true value of the parameter in the population. For example, an **unbiased estimator of variance** provides an accurate index of the variability of measurements for a given phenomenon in a given population of interest based on calculations made from the SAMPLE VARIANCE. Compare BIASED ESTIMATOR.

**unbiased sampling** selecting individuals for a study using a process that yields a group exemplifying the larger population from which it derives. In practice, no strategy produces a completely **unbiased sample** but RANDOM SAMPLING yields a good approximation, as it introduces the minimum possible amount of error in representing the population. Compare BIASED SAMPLING.

**uncal herniation** see TRANSTENTORIAL HERNIATION.

**uncertainty** *n.* **1.** the state or condition in which something (e.g., the probability of a particular outcome) is not accurately or precisely known. **2.** lack of confidence or clarity in one’s ideas, decisions, or intentions. See also UNCERTAINTY PRINCIPLE. —**uncertain** *adj.*

**uncertainty analysis** in an experiment or study, an analysis used to assess the accuracy of measurements and model predictions, taking into account such possible sources of error as instrumentation, methodology, and the presence of CONFOUNDS.

**uncertainty-arousal factor** in psychological aesthetics, a response to a work of art that reflects autonomic reactions in the viewer, as opposed to cortical arousal. The factor includes simple–complex, clear–indefinite, and disorderly–orderly components, which are said to reflect subjective uncertainty. Compare CORTICAL-AROUSAL FACTOR.

**uncertainty avoidance** **1.** the tendency of a culture to adhere to what is already known, thought, or believed. It contrasts with **uncertainty orientation**, which is the tendency to seek out new information and ideas and to enjoy exploring and mastering uncertainty. **2.** an intolerance of ambiguity or uncertainty and a psychological need for formal rules. See also COGNITIVE STYLE; NEED FOR CLOSURE. [defined by Dutch cultural psychologist Geert Hofstede (1928– )]

**uncertainty factor** in psychological aesthetics, a dimension of artistic style that is associated with high positive ratings on simple–complex and clear–indefinite scales and high negative ratings on a disorderly–orderly scale.

**uncertainty orientation** see UNCERTAINTY AVOIDANCE.

**uncertainty principle** the principle, introduced by German physicist Werner Heisenberg (1901–1976), that it is impossible to measure accurately both the position and the momentum of a particle at a specific moment in time. It arises from the fact that the act of measurement will itself interfere with the system being measured in unpredictable ways. The same principle applies to other paired variables, such as energy and time. The uncertainty principle has implications for philosophy, in that it appears to undermine the laws of cause and effect. Also called **Heisenberg principle**; **indeterminacy principle**.

**uncertainty reduction theory (URT)** a social theory of relationship development proposing that there is a need to gain information about other people through communication (reducing uncertainty) in order to be able to predict and explain the behavior of those individuals better. [developed in the early 1970s by U.S. communication theorists Charles R. Berger (1939– ) and Richard J. Calabrese]

**uncinate fasciculus** a bundle of nerve fibers that connects the anterior and inferior portions of the FRONTAL LOBE of each cerebral hemisphere in the brain. It forms a compact bundle as the fasciculus bends around the LATERAL SULCUS and spreads into a fan shape at either end. Research suggests that it has a role in remembering proper names.

**unconditional positive regard** an attitude of caring, acceptance, and prizing that others express toward an individual irrespective of his or her behavior and without regard to the others' personal standards. Unconditional positive regard is considered conducive to the individual's self-awareness, self-worth, and personality growth; it is, according to Carl ROGERS, a universal human need essential to healthy development. The concept is the centerpiece of Rogers's CLIENT-CENTERED THERAPY and is also emphasized in many other therapeutic approaches. Compare CONDITIONAL POSITIVE REGARD.

**unconditioned reflex** see UNCONDITIONED RESPONSE.

**unconditioned reinforcement** see PRIMARY REINFORCEMENT.

**unconditioned reinforcer** see NATURAL REINFORCER; PRIMARY REINFORCEMENT.

**unconditioned response (UCR; UR)** the unlearned response to a stimulus. In other words, it is any original response that occurs naturally and in the absence of conditioning (e.g., salivation in response to the presentation of food). The unconditioned response is a REFLEX that serves as the basis for establishment of the CONDITIONED RESPONSE in CLASSICAL CONDITIONING. Also called **unconditioned reflex**.

**unconditioned stimulus (UCS; US)** a stimulus that elicits an UNCONDITIONED RESPONSE, as in withdrawal from a hot radiator, contraction of the pupil on exposure to light, or salivation when food is in the mouth. Also called **unconditional stimulus**. Compare CONDITIONED STIMULUS.

**unconditioned stimulus devaluation (US devaluation)** the deliberate lessening of the appeal of an UNCONDITIONED STIMULUS, either by allowing the organism access to the stimulus until satiation is achieved or through AVERSION CONDITIONING.

**unconditioned stimulus preexposure effect (US preexposure effect)** the result of a subject's exposure to and familiarization with an UNCONDITIONED STIMULUS before the beginning of a conditioning trial. Familiarization slows the development of a conditioned response to the unconditioned stimulus. Compare LATENT INHIBITION.

**unconscious (Ucs)** **1. n.** in psychoanalytic theory, the region of the psyche containing memories, emotional conflicts, wishes, and repressed impulses that are not directly accessible to awareness but that have dynamic effects on thought and behavior. Sigmund FREUD sometimes used the term **dynamic unconscious** to distinguish this concept from that which is descriptively unconscious but "static" and with little psychological significance. Compare CONSCIOUS; PRECONSCIOUS; SUBCONSCIOUS. See also COLLECTIVE UNCONSCIOUS; PERSONAL UNCONSCIOUS. **2. adj.** relating to or marked by absence of awareness or consciousness. Psychologists prefer increasingly to use the term NONCONSCIOUS in this sense, to avoid confusion with the psychoanalytic unconscious. —**unconsciousness** *n.*

**unconscious cognition** cognitive processes, such as

thinking, memory processing, and linguistic processing, that are not ordinarily reportable. See COGNITIVE UNCONSCIOUS.

**unconscious context** processes and structures that shape awareness without themselves being explicitly conscious; for example, beliefs or memories that are taken for granted.

**unconscious homosexuality** see LATENT HOMOSEXUALITY.

**unconscious inference theory** the hypothesis that perception is indirectly influenced by inferences about current sensory input that make use of the perceiver's knowledge of the world and prior experience with similar input. For example, consider two trees of the same height but different distances from the perceiver. The images of the trees that appear on the retina are of different sizes, but the knowledge that one tree is farther away than the other leads the perceiver to infer, without conscious effort, that in actuality the two trees are the same size. [proposed by Hermann von HELMHOLTZ]

**unconscious intention** a goal that one has not explicitly chosen to pursue or a motivational structure of which one is unaware but that nonetheless influences one's thought and behavior. Compare CONSCIOUS INTENTION.

**unconscious knowledge** see TACIT KNOWLEDGE.

**unconscious learning** the acquisition of TACIT KNOWLEDGE. See IMPLICIT LEARNING.

**unconscious motivation** in psychoanalytic theory, wishes, impulses, aims, and drives of which the self is not aware. Examples of behavior produced by unconscious motivation are purposive accidents, slips of the tongue, and dreams that express unfulfilled wishes. See also PARAPRAXIS; PHANTASY.

**unconscious perception** perception of a stimulus that is below the level of explicit awareness. See SUBLIMINAL PERCEPTION. See also PREATTENTIVE PROCESSING.

**unconscious plagiarism** see CRYPTOMNESIA.

**unconscious process** **1.** in psychoanalytic theory, a psychical process that takes place in the UNCONSCIOUS; for example, REPRESSION. **2.** in cognitive psychology, a mental process that occurs without a person being explicitly aware of it and that is largely outside of conscious control. Also called **subliminal process**. Compare CONSCIOUS PROCESS. See also PREATTENTIVE PROCESSING.

**unconscious resistance** in psychoanalytic theory, RESISTANCE proper, as opposed to CONSCIOUS RESISTANCE.

**unconscious transfer** a memory distortion that results from confusing the source of the information recalled (see SOURCE CONFUSION). In legal contexts, for example, a witness may mistakenly recognize an individual in a lineup as the perpetrator, when in fact the individual's face is familiar because it was earlier presented in a photograph. Also called **unconscious transference**.

**uncontrollable turnover** see TURNOVER.

**uncontrolled variable** a characteristic factor that is not regulated or measured by the investigator during an experiment or study, so that it is not the same for all participants in the research. For example, if the investigator collects data on participants with varying levels of education, then education is an uncontrolled variable. If the investigator, however, were to collect data only on participants with

college degrees, then education would be identical for all individuals and thus serve as a CONTROL VARIABLE.

**unconventional therapy** treatment that may be unique, controversial, or both, in that it is not traditionally accepted by the health care professions. See COMPLEMENTARY AND ALTERNATIVE MEDICINE.

**uncovering** *n.* in psychotherapy, the process of peeling away an individual's defenses and passing beyond a focus on symptoms to get to the underlying roots of a problem. Uncovering techniques are used particularly in psychoanalysis and other psychodynamic or depth therapies.

**uncriticalness** *n.* a nonjudgmental attitude on the part of the therapist, which is considered essential in Carl ROGERS's nondirective approach (see CLIENT-CENTERED THERAPY) as well as in other forms of psychotherapy. Criticism is held to inhibit clients' efforts to recognize and revise their self-defeating patterns of thought and behavior.

**uncrossed disparity** the BINOCULAR DISPARITY produced by images that lie beyond the HOROPTER in visual space. Uncrossed disparity causes the images on both retinas to move nasally relative to the location of images of objects on the horopter, whereas **crossed disparity** does the opposite. Objects closer than the horopter will move temporally on both retinas, compared to objects on the horopter. See also DEPTH CUE.

**uncued panic attack** a PANIC ATTACK that occurs unexpectedly rather than being brought on by a specific situation or trigger. It is therefore perceived to have occurred spontaneously. Also called **unexpected panic attack**. Compare CUED PANIC ATTACK; SITUATIONALLY PREDISPOSED PANIC ATTACK.

**uncus** *n.* a hook-shaped part of the rhinal sulcus (cleft) of the hippocampal formation in the RHINENCEPHALON. The LATERAL OLEFACTORY TRACT makes connections with the uncus.

**underachiever** *n.* a person who consistently achieves below his or her demonstrated capacity. **Underachievement** may be specific to an area of study or work, or it may be general. It is more prevalent among boys than girls and is quite common in bright and even gifted children. It is also prevalent among average students and children with SPECIAL NEEDS. Compare OVERACHIEVER.

**underage** *adj.* see OVERAGE.

**underclass** *n.* **1.** a SOCIAL CLASS existing beneath the usual socioeconomic scale, often concentrated in the inner cities and usually characterized by poverty, inadequate educational or vocational opportunities, high unemployment or chronic underemployment, violent crime, substance abuse, poor social services, and few community-supporting institutions. **2.** broadly, any group without equal or direct access to the economic, educational, legal, medical, or other provisions of a society. For example, the term **genetic underclass** has been used to identify those who are classified as susceptible to a particular disease following genetic testing and who may as a result encounter discrimination by insurance companies or employers.

**underconfidence** *n.* a cognitive bias characterized by an underestimation of one's ability to perform a task successfully or by an underrating of one's performance relative to that of others. Compare OVERCONFIDENCE.

**underconfidence-with-practice effect** in investigations of JUDGMENTS OF LEARNING, the finding that after

showing slight overconfidence at a learning task on first exposure (e.g., studying a list of paired associates) participants markedly underestimate their memory performance of the same task during subsequent tries. [identified by Israeli cognitive psychologists Asher Koriat, Limor Sheffer, and Hilit Ma'ayan]

**underdog** *n.* the rationalizations and self-justifications employed by an individual to allay the sense of guilt or shame arising from an inability to meet the demands of internal moral standards or other rules of conduct (the TOP-DOG). [first described by German-born U.S. psychiatrist Frederick (Fritz) S. Perls (1893–1970)]

**underextension** *n.* the incorrect restriction of the use of a word, which is a mistake commonly made by young children acquiring language. For example, a child may believe that the label *dog* applies only to Fido, the family pet. Compare OVEREXTENSION.

**underidentification** *n.* a situation, such as may occur during STRUCTURAL EQUATION MODELING, in which it is not possible to estimate all of the model's parameters on the basis of the sample data being analyzed. Compare OVERIDENTIFICATION.

**underintensity** *n.* a state in which one or all of the following are below the optimal level: arousal, commitment, effort, assertiveness, and attentional focus.

**underload** *n.* the situation in which a low level of task demand creates distress in forms such as boredom and fatigue. Compare OVERLOAD.

**underlying distribution** the THEORETICAL DISTRIBUTION for a given population of interest.

**undermatching** see MATCHING LAW.

**underpayment inequity** in industrial and organizational settings, an employee's perception that he or she is being paid less than is fair, especially in comparison to co-workers. This can lead to dissatisfaction and tension and, in some cases, to lowered productivity. Compare OVERPAYMENT INEQUITY. See EQUITY THEORY.

**undershoot** *n.* the portion of an ACTION POTENTIAL that represents the stage when the membrane potential is transiently hyperpolarized relative to the resting potential. Compare OVERSHOOT.

**understaffing** *n.* the condition in which the number of people available for a program or function falls below that required to maintain it. Compare OVERSTAFFING. —**understaffed** *adj.*

**understanding** *n.* **1.** the process of gaining insight about oneself or others or of comprehending the meaning or significance of something, such as a word, concept, argument, or event. See also APPREHENSION; COMPREHENSION. **2.** in counseling and psychotherapy, the process of discerning the connections between a client's behavior and his or her environment, history, aptitudes, motivation, ideas, feelings, relationships, and modes of expression. **3.** in some philosophical writings, the faculty of organizing and interpreting the information acquired from the senses, as opposed to the NOUS or higher reason. See also DIANOIA. —**understand** *vb.*

**undescended testicle** see CRYPTORCHIDISM.

**undifferentiated schizophrenia** in DSM-IV-TR, a subtype of SCHIZOPHRENIA in which the individual exhibits prominent psychotic features, such as delusions, hallucina-

tions, disorganized thinking, or grossly disorganized behavior, but does not meet the criteria for any of the other subtypes of the disorder. This subtype has been eliminated from *DSM-5*.

**undifferentiated somatoform disorder** in *DSM-IV-TR*, a SOMATOFORM DISORDER in which one or more physical complaints persist for 6 months or longer and cannot be explained by a known medical condition. Unlike FACTITIOUS DISORDER or MALINGERING, these symptoms are not intentionally feigned or produced. This disorder has been eliminated from *DSM-5*.

**undue hardship** a circumstance under which an employer may refuse an employee's request for REASONABLE ACCOMMODATIONS under the AMERICANS WITH DISABILITIES ACT. Undue hardship includes accommodations that cause excessive financial burden to the business, compromise workplace safety, significantly decrease workplace efficiency, infringe on the rights of other employees, or require other employees to bear more than their share of potentially hazardous or burdensome work.

**undulatio reflexa** reflexive action (Latin): the term used by René DESCARTES to explain bodily movements that are not under volitional control but instead occur as a response to the surrounding environment. The concept arose from Descartes's notion of the body as a machine that is wholly distinct from the mind (see CARTESIAN DUALISM). It served as a foundation for later psychological theories that took the reflex arc as the basic unit, as well as the basic model, of behavior.

**unexpected panic attack** see UNCUED PANIC ATTACK.

**unexplained variance** see ERROR VARIANCE.

**unfair labor practices** practices by a labor union or employer that are defined as unfair according to the LABOR MANAGEMENT RELATIONS ACT and subsequent amendments. These include the enforcement of CLOSED SHOPS and the use of secondary boycotts and secondary picketing to further a labor dispute.

**unfalsifiable** *adj.* denoting the quality of a proposition, hypothesis, or theory such that no empirical test can establish that it is false. For Austrian-born British philosopher Karl Popper (1902–1994), a theory or hypothesis that is unfalsifiable is to be judged nonscientific. See FALSIFIABILITY; FALSIFICATIONISM; RISKY PREDICTION.

**unfinished business** in therapy and counseling, the personal experiences that have been blocked or tasks that have been avoided because of feared emotional or interpersonal effects. Many therapists believe that people have an urge to complete unfinished business in order to achieve satisfaction and peace. Those working with the dying and their families believe that dealing with unfinished business is an important aspect of the dying and grieving processes.

**unfinished story** a PROJECTIVE TECHNIQUE in which participants are required to complete a story by role play, discussion, or writing. It is intended to reveal information about the participants' concerns.

**unfitness** *n.* 1. the state or condition of lacking physical or mental fitness or health. 2. in biology, the inability of an organism to produce viable offspring in a given environment. Compare FITNESS.

**unfolding** *n.* a unidimensional SCALING procedure in which respondents evaluate a set of items and their choices are used to construct a continuum along which their rela-

tive preferences are placed. For example, consider a scale measuring attitudes toward marijuana sales. A person who wholeheartedly favors the item "The city should legalize the sale of marijuana" would be located at a different point along the continuum from a person who completely opposes the sale of marijuana, and a person who endorses the item to some extent would be located at yet another point along the continuum.

**unidimensionality** *n.* the quality of measuring a single construct, trait, or other attribute. For example, a unidimensional personality scale, attitude scale, or other scale would contain items related only to the respective concept of interest. Compare MULTIDIMENSIONALITY. See also BIPO-LARITY. —**unidimensional** *adj.*

**unified positivism** an approach to the problem of the fragmentation of psychology that seeks to unify the field by emphasizing scientific work that integrates disparate findings and thus draws theories and models together. It derives its inspiration from one of the basic assumptions of LOGICAL POSITIVISM: that all science could be united, on the model of physics, through a strict empiricist approach. See also UNITY OF SCIENCE. [introduced by U.S. psychologist Arthur Staats (1924– )]

**unified theory of cognition** any theory that attempts to provide a single architecture for explaining all cognitive activity, whether in human or nonhuman animals or in artificial intelligence. An example is the SOAR model, proposed by U.S. cognitive and computer scientist Allen Newell (1927–1992).

**Unified Tri-Service Cognitive Performance Assessment Battery (UTCPAB)** a battery of assessment tests compiled in 1984 by a group of experimental research psychologists. It presents computerized, clinically relevant psychomotor and neuropsychological tests for the rapid assessment of the integrity of the nervous system.

**Uniform Crime Reports** a nationwide database of reported crimes that contains information from all local and state law enforcement agencies within the United States. Its purpose is to set a consistent and reliable measure of criminal activity.

**uniform distribution** a theoretical CONTINUOUS DISTRIBUTION in which the probability of occurrence is the same for all values of  $x$ , represented by  $f(x) = 1/(b - a)$ , where  $a$  is the lower limit of the distribution and  $b$  is its upper limit. For example, if a fair die is thrown, the probability of obtaining any one of the six possible outcomes is  $1/6$ . Since all outcomes are equally probable, the distribution is uniform. If a uniform distribution is divided into equally spaced intervals, there will be an equal number of members of the population in each interval. Also called **rectangular distribution**.

**Uniform Guidelines for Employee Selection Procedures** a formal set of guidelines developed by the EQUAL EMPLOYMENT OPPORTUNITY COMMISSION that provide employers with advice on how they can comply with civil rights legislation in the hiring of employees. See FOUR-FIFTHS RULE.

**uniformly most powerful test (UMP test)** a statistical test of one hypothesis against another that has the greatest POWER among all tests available at a given ALPHA value. Suppose the two hypotheses are the NULL HYPOTHESIS of no difference between two groups (Sample 1 mean = Sample 2 mean) and the ALTERNATIVE HYPOTHESIS of some difference between the groups (Sample 1 mean  $\neq$  Sample 2

mean). Because the latter is actually a composite of several possibilities, a UMP test is one defined by a CRITICAL REGION that is best suited to test the null hypothesis against each of the simple hypotheses comprising the larger alternative hypothesis.

**unilateral** *adj.* denoting or relating to one side (e.g., of the body or an organ) or to one of two or more parties. —**unilaterally** *adv.*

**unilateral couple counseling** the counseling of one partner on his or her relationship to the other. Even when only one partner participates in counseling, the focus is on the partners' relationship. See also COUPLES COUNSELING.

**unilateral descent** in anthropology, a system of descent or inheritance in which descent is traced through the male line only (PATRIARCHY) or through the female line only (MATRIARCHY). Also called **unilineal descent**. Compare BILATERAL DESCENT. See also DESCENT GROUP.

**unilateral lesion** a lesion on one side or lobe of an organ or part. For example, a unilateral cerebral lesion involves one cerebral hemisphere, left or right, with effects that may vary according to the dominance of the hemisphere and the function affected. The motor and sensory effects of the lesion are generally on the contralateral side—that is, on the side opposite to that of the lesion—unless the lesion occurs in the cerebellum.

**unilateral neglect** a disorder resulting from damage to the PARIETAL LOBE of the brain and characterized by a loss of conscious perception of objects or stimuli on the side of the body (usually the left half) that is opposite the location of the lesion. For example, if approached from the left side, an individual with unilateral neglect may not notice the approaching person, but would respond normally when approached from the right side. The disorder may be accompanied by ALIEN LIMB SYNDROME and other striking neuropsychological features. Also called **hemineglect**; **hemispatial neglect**; **spatial neglect**. See also MOTOR NEGLECT; SENSORY NEGLECT; VISUAL NEGLECT.

**unilineal descent** see UNILATERAL DESCENT.

**unimodal distribution** a set of scores with a single peak, or MODE, around which values tend to fluctuate, such that the frequencies at first increase and then decrease. See also BIMODAL DISTRIBUTION; MULTIMODAL DISTRIBUTION.

**unimodel of persuasion** a model that postulates a single process underlying attitude formation and change in which all information relevant to the persuasion context is processed as evidence using if-then syllogistic reasoning. According to the model, the processing of such information can vary in the extent to which it occurs in an effortful versus noneffortful manner. See also ELABORATION-LIKELIHOOD MODEL; HEURISTIC-SYSTEMATIC MODEL. [proposed by U.S. psychologist Arie W. Kruglanski (1939–)]

**uniocular** *adj.* see MONOCULAR.

**union** *n.* an organization that represents employees in dealings with their employer. The union is responsible for negotiating contracts with employers that determine employees' compensation and conditions of employment and for seeing that the terms of these contractual agreements are fulfilled. Also called **labor union**; **trade union**. See COLLECTIVE BARGAINING.

**union shop** a work arrangement in which it is a condition of employment that new employees who are not union members join the union within a certain time after

being hired. See also AGENCY SHOP; CLOSED SHOP; OPEN SHOP.

**uniparous** *adj.* see PRIMIPAROUS.

**unipolar disorder** persistent or pervasive depression that does not involve a MANIC EPISODE, a HYPOMANIC EPISODE, or a MIXED EPISODE. As such, it contrasts with BIPOLAR DISORDER. The term is sometimes used synonymously with MAJOR DEPRESSIVE DISORDER. Also called **unipolar depression**.

**unipolar mania** a disorder in which only excitement, overactivity, and similar euphoric symptoms are seen. This is a rare condition, as such MANIC EPISODES tend eventually to be followed by one or more MAJOR DEPRESSIVE EPISODES.

**unipolar neuron** a neuron that has only a single extension of the CELL BODY. This extension divides into two branches, oriented in opposite directions and representing the axon. One end is the receptive pole, and the other is the output zone. Unipolar neurons transmit touch information from the body surface to the spinal cord. Also called **monopolar neuron**. Compare BIPOLAR NEURON; MULTIPOLAR NEURON.

**unipolar rating scale** a type of instrument that prompts a respondent to evaluate the degree to which a single quality or attribute is present. For example, consider a scale with the following anchors or benchmarks: (1) *not at all satisfied*, (2) *slightly satisfied*, (3) *moderately satisfied*, (4) *very satisfied*, and (5) *completely satisfied*. Because there is no anchor that represents the opposing quality of dissatisfaction, the scale has one pole. Also called **unipolar scale**. Compare BIPOLAR RATING SCALE.

**unipolar stimulation** electrical stimulation in which one electrode is placed on or in the tissue and the other is outside the tissue.

**unique hue** see BINARY HUE.

**uniqueness** *n.* in FACTOR ANALYSIS, that part of the variance of a variable that it does not share with any other variable in the system. It is given as  $1 - h_j^2$ , where  $h_j^2$  is the COMMUNALITY of the *j*th variable. Each of the observed variables in the data set being analyzed can be expressed as a combination of a common factor shared among all variables plus a unique factor associated with a measurement error or another specific, individual source of variation.

**unique trait** see IDIOGRAPHIC.

**unitary-resource model** a model that views attention as a single pool of undifferentiated resources that can be devoted to a variety of processes. Tasks place demands on the general pool, rather than on particular resources. The extent to which the total resources are taxed by a primary task will determine the performance decrement on other tasks carried out at the same time; when the demand on resources exceeds the supply, allocation strategies become important. Also called **single-capacity model**. Compare MULTIPLE-RESOURCE MODEL.

**United Nations Declaration on the Rights of Mentally Retarded Persons** a 1971 declaration by the United Nations affirming the human rights of people with intellectual disabilities. These issues were largely subsumed under the 1993 Standard Rules on the Equalization of Opportunities for Persons With Disabilities. See RIGHTS OF PEOPLE WITH MENTAL DISABILITIES.

**Unit Manning System** a U.S. Army personnel program promoted in the 1980s to stabilize selected light-infantry

division troops in cohort units. It was designed to build unit cohesion, reduce personnel turbulence, and enhance readiness and performance.

**unit normal distribution** see STANDARDIZED DISTRIBUTION.

**unit normal variable** see STANDARD NORMAL VARIABLE.

**unit of analysis** in research, the group of people, things, or entities that is being investigated or studied. For example, in organizational contexts, data can be collected from employees, who in turn are part of departments, which in turn are part of the larger organization, which may have multiple sites in several countries. The unit of analysis chosen influences the methodological and analytical procedures used. For example, studying groups within organizations may require a HIERARCHICALLY NESTED DESIGN. Also called **analysis unit**.

**unit schedule** see SECOND-ORDER SCHEDULE.

**unity** *n.* in statistics, a synonym for the value of 1. Statisticians often state that the statistic or value they are working with “approaches unity,” which means it approaches the value of 1.

**unity in variety** the concept that a stimulus with maximal unity and maximal variety is preferred.

**unity of command** a principle of management stating that each employee should have to report to one and only one immediate boss. See LINE MANAGEMENT. Compare MATRIX ORGANIZATION. [proposed by French engineer Henri Fayol (1841–1925) and other classical management theorists]

**unity of consciousness** the concept that at any given moment the contents of consciousness are experienced as a single integrated state, even though they will consist of a multiplicity of perceptions, thoughts, feelings, and so forth. For example, a person may be looking out the window while at the same time listening to jazz, eating chocolate, experiencing a mild pain in the knee, and remembering an earlier conversation, yet these phenomena will be experienced as unified with one another in a single moment of consciousness. See also COCONSCIOUSNESS; DIVIDED CONSCIOUSNESS.

**unity of science** the view that the principles of any and all sciences can be derived from or reduced to the laws of physics. See CONSILIENCE; UNIFIED POSITIVISM.

**univariate** *adj.* characterized by a single variable. For example, a researcher may collect univariate data by recording how many hours a day students in a particular course spend outside of class on completing their homework. Compare BIVARIATE; MULTIVARIATE.

**univariate analysis** a statistical examination of data for only one variable of interest. For example, a univariate analysis of study habits for a sample of college students would examine habits across all individuals without taking into account whether a particular student was a freshman, sophomore, junior, or senior. Also called **univariate statistics**. Compare MULTIVARIATE ANALYSIS.

**univariate distribution** a distribution of values on a single RANDOM VARIABLE according to their observed or expected frequency. If this is a NORMAL DISTRIBUTION it is known as a **univariate normal distribution**. Compare MULTIVARIATE DISTRIBUTION.

**univariate research** research that employs only one DEPENDENT VARIABLE. Compare MULTIVARIATE RESEARCH.

**universal** *n.* **1.** in social psychology, see PSYCHOLOGICAL UNIVERSAL. See also UNIVERSALS. **2.** in linguistics, see LANGUAGE UNIVERSAL.

**universal design** a quality of a product or built environment conceived to make it optimally usable and comfortable for people of all ages and abilities. Universal design as a concept goes beyond mere accessibility and removal of barriers, in accordance with the mandates of laws such as the AMERICANS WITH DISABILITIES ACT, by emphasizing the inclusiveness of design to accommodate a wide range of physical and cognitive abilities. Also called **transgenerational design**. See also BARRIER-FREE ENVIRONMENT. Compare DESIGN FOR ADJUSTABLE RANGE; DESIGN FOR THE AVERAGE.

**universal grammar (UG)** a theoretical linguistic construct positing the existence of a set of rules or grammatical principles that are innate in human beings and underlie most natural languages. The concept is of considerable interest to psycholinguists who study LANGUAGE ACQUISITION and the formation of valid sentences. Research shows that BROCA’S AREA in the brain is selectively activated by languages that meet the criteria for universal grammar.

**universalism** *n.* the position that certain aspects of the human mind, human behavior, and human morality are universal and essential and are therefore to be found in all cultures and historical periods. Universalism is thus a form of ESSENTIALISM and is opposed to RELATIVISM. —**universalist** *adj.*

**universality** *n.* the condition of existing everywhere, often in a very similar or identical form. In psychology, universality is defined more specifically: **1.** the tendency to assume that one’s personal qualities and characteristics, including attitudes and values, are common in the general social group or culture. **2.** in mob and crowd settings, the tendency for individuals to assume that atypical, unusual behaviors are allowable because many others in the situation are performing such actions (“everybody’s doing it”). See COLLECTIVE BEHAVIOR; SOCIAL CONTAGION; EMERGENT-NORM THEORY. **3.** in self-help and psychotherapy groups, a curative factor fostered by members’ recognition that their problems and difficulties are not unique to them but instead are experienced by many of the group members. See also THERAPEUTIC FACTORS.

**universality of emotions** the finding that certain emotional expressions, appraisals, and manifestations are the same or highly similar across cultures and societies. Compare CULTURAL SPECIFICITY OF EMOTIONS. See also PRIMARY EMOTION.

**universalizability** *n.* in ethics, the principle that particular moral judgments always carry an implied universal judgment. So, for example, to say *Daphne shouldn’t have lied to him* implies the universal judgment that anybody in the identical situation to Daphne should not have lied. The principle of universalizability is related to that of the CATEGORICAL IMPERATIVE. —**universalizable** *adj.*

**universals** *pl. n.* in philosophy, general qualities, such as *blueness* or *courage*, as opposed to the particulars that instantiate them. The status of universals and their relationship to particulars have been a matter of much debate in philosophy. See also ABSTRACT IDEA; PSYCHOLOGICAL UNIVERSAL.



**universe** *n.* in statistics, see POPULATION.

**universe of discourse** **1.** the total system of ideas, concepts, terms, and expressions within which a given topic can be analyzed and understood. The universe of discourse defines both what can be said about a subject and how it can be said. Statements that are meaningful within a particular universe of discourse may well be nonsensical within another; to say *The sad skies are weeping*, for example, might be permissible in poetry but would not be so in meteorology. The idea of universes of discourse has also been explored by radical thinkers in the traditions of MARXISM, FEMINISM, and POSTSTRUCTURALISM; such critics argue that by controlling the universe of discourse in a particular society, the power elite controls what can and cannot be said or thought. **2.** in the field of artificial intelligence, any set of objects that can be represented within a given domain.

**University of Pennsylvania Smell Identification Test (UPSIT)** see SMELL IDENTIFICATION TEST.

**unlearning** *n.* see DECONDITIONING.

**unmyelinated** *adj.* describing a nerve fiber that lacks a MYELIN SHEATH, such as a C FIBER.

**unnumbered graphic rating scale** see VISUAL ANALOGUE SCALE.

**unobtrusive measure** a measure obtained without disturbing the participant or alerting him or her that a measurement is being made. For example, a researcher may observe passersby in a public park from a nearby café and document their activities. The behavior or responses of such participants are thus assumed to be unaffected by the investigative process or the surrounding environment. Also called **concealed measure**; **nonreactive measure**. Compare REACTIVE MEASURE.

**unplanned comparison** see POST HOC COMPARISON.

**unpleasantness** *n.* an emotional state that is experienced when an event is incongruent with one's goals or is associated with pain. See also DIMENSIONAL THEORY OF EMOTION. —**unpleasant** *adj.*

**unpleasure** *n.* in classical psychoanalytic theory, the psychic pain, tension, and EGO suffering that is consciously felt when instinctual needs and wishes, such as hunger and sex, are blocked by the ego and denied gratification. [translation of German *Unlust*, "reluctance" or "listlessness"]

**unprepared learning** see PREPAREDNESS.

**unresolved** *adj.* **1.** in psychotherapy, denoting emotional or psychic conflicts not yet sufficiently dealt with and assimilated or understood. See also UNFINISHED BUSINESS. **2.** describing any stimulus whose characteristics cannot be determined by the perceiver.

**unrestricted model** see FULL MODEL.

**unsaturated model** see SATURATED MODEL.

**unshared environment** see NONSHARED ENVIRONMENT.

**unsociable** *adj.* lacking SOCIABILITY because of a disinclination to interact and form relationships with others.

**unspecified mental retardation** the diagnosis made when an individual is presumed to have MENTAL RETARDATION but is too severely impaired or uncooperative to be evaluated through the use of standard intelligence tests

and adaptive behavior measures. The *DSM-IV-TR* designation is **mental retardation, severity unspecified**. In *DSM-5*, the term is **unspecified intellectual disability**.

**unstandardized score** see RAW SCORE.

**unstructured** *adj.* denoting an object, situation, or set of ideas that does not have a definite pattern or organization.

**unstructured autobiography** see AUTOBIOGRAPHY.

**unstructured interview** an interview that is highly flexible in terms of the questions asked, the kinds of responses sought, and the ways in which the answers are evaluated across interviewers or across interviewees. For example, a human resource staff member conducting an unstructured interview with a candidate for employment may ask open-ended questions so as to allow the spontaneity of the discussion to reveal more of the applicant's traits, interests, priorities, and interpersonal and verbal skills than a standard predetermined question set would. Also called **nondirective interview**. Compare PATTERNED INTERVIEW; STRUCTURED INTERVIEW.

**unstructured stimulus** a vague, poorly organized, and not clearly identifiable stimulus, such as an inkblot in the RORSCHACH INKBLOT TEST. The perception of unstructured stimuli is often thought to be influenced more by the characteristics of the perceiver than by those of the stimulus. Compare STRUCTURED STIMULUS.

**unsystematic variance** the haphazard or random fluctuation of data for individuals over time. It is one of two types of variance identified in research, the other being **systematic variance** arising from the effects of the INDEPENDENT VARIABLES studied.

**unthought known** in OBJECT RELATIONS THEORY, a preverbal awareness of one's early experiences of important objects (e.g., parents, siblings) that is indescribable in words but that nonetheless influences one's later thought and behavior. [coined in 1987 by British psychoanalyst Christopher Bollas]

**Unusual Uses Test** a test that measures DIVERGENT-THINKING ability. In this test, participants are asked to think of unusual uses for common objects, such as a paper clip. The number and novelty of unusual responses contribute to the overall score. [devised by Joy Paul GUILFORD]

**unvoiced** *adj.* denoting speech sounds that are articulated through breath, without vibration of the vocal cords. The unvoiced (or voiceless) sounds comprise some consonants (e.g., [p], [t], and [f]). Compare VOICED. See BINARY FEATURE.

**unweighted means analysis** in ANALYSIS OF VARIANCE, a strategy for handling missing data in which the actual sample size in each of the different conditions or levels of the INDEPENDENT VARIABLE is replaced by the average sample size. When participants become ill, withdraw, or otherwise fail to complete a research study, there are no longer equal numbers of cases in each experimental condition. An unweighted means analysis takes this inequality into account by applying an adjusted sample size value across all conditions, thus ensuring that data from all experimental groups contribute equally to the determination of treatment effects. Also called **unweighted means procedure**.

**up-and-down method** a strategy in which the administration of a stimulus event or item depends on a partici-

pant's response to the previous item. The up-and-down method employs fixed, discrete levels and sequential transition rules of moving one level up, moving one level down, or remaining at the current level. COMPUTER ADAPTIVE TESTING is an example.

**upper** *n.* slang for any of various drugs that stimulate the central nervous system, such as amphetamine and methamphetamine. See CNS STIMULANT.

**upper hinge** the point in a distribution of values above which lie one fourth of the data and below which lie the other three fourths of the data. It is equivalent to the third QUARTILE. Compare LOWER HINGE.

**upper motor neuron** see MOTOR NEURON.

**upper quartile** see QUARTILE.

**upper real limit** see REAL LIMIT.

**upper threshold** the maximum intensity of a stimulus that can be perceived without pain.

**up-regulation** *n.* the formation of additional RECEPTOR molecules by target cells in response to increased levels of hormones. Compare DOWN-REGULATION.

**UPSIT** abbreviation for University of Pennsylvania SMELL IDENTIFICATION TEST.

**up through** a technique for testing CLAIRVOYANCE in which the participant is asked to state the order of a stacked deck of ZENER CARDS from bottom to top. Compare DOWN THROUGH. See also BASIC TECHNIQUE.

**upward appraisal** in organizations, the evaluation of those in supervisory positions by their subordinates.

**upward communication** written and oral messages that originate with individuals lower in the hierarchy of an organization and that flow upward to those occupying positions higher in the hierarchy. Upward communication is subject to distortions such as the **mum effect**, in which subordinates are unwilling to convey bad news to their superiors. The more levels in the hierarchy through which a message must pass, the more subject it is to distortion as the result of filtering at each level. Compare DOWNWARD COMMUNICATION; HORIZONTAL COMMUNICATION.

**upward grade homogenization** see GRADE INFLATION.

**upward mobility** the movement of a person or group to a higher social class. Upward mobility tends to be a feature of relatively relaxed class systems operating within expanding economies. Also called **social ascendancy**. See also SOCIAL MOBILITY. Compare DOWNWARD MOBILITY.

**upward Pygmalion effect** an effect in which the expectations of followers or subordinates lead to behavior on the part of the leader or superior that is consistent with these expectations. The behavior of the leader does not reflect his or her true abilities or personality traits but rather the perception of him or her by subordinates. Compare PYGMALION EFFECT. See ROLE EXPECTATIONS; SELF-FULFILLING PROPHECY.

**upward social comparison** see SOCIAL COMPARISON THEORY.

**UR 1.** abbreviation for UNCONDITIONED RESPONSE. **2.** abbreviation for UTILIZATION REVIEW.

**ur-** combining form see URO-.

**uracil** (symbol: U) *n.* a pyrimidine compound in the nu-

cleotides of living organisms. It is one of the four bases found in RNA that constitute the GENETIC CODE, the others being adenine, cytosine, and guanine. In DNA, thymine occurs instead of uracil.

**uranoschisis** *n.* see CLEFT PALATE.

**urban behavior** the behavior of people living in cities, who appear to be less attentive to the needs of strangers, walk faster, make less eye contact, and are exposed to more violence and aggressive behavior than their rural or suburban counterparts. The prevailing features of the urban environment—its size, density, and pace—led to the theory, proposed by Stanley MILGRAM, that urban behavior is characterized by adaptation to the INFORMATION OVERLOAD of city life, resulting in anonymity, powerlessness, aggression, indifference to others, and narrow self-interest among city dwellers.

**urban ecology** the study of the dynamics and organization of city life, particularly in relation to population density and the nature of the city environment. Urban ecology is based on principles derived from biology, sociology, psychology, and environmental science. See also URBANIZATION.

**urbanism** *n.* the way of life characteristic of cities. Urbanism has been a central area of research in sociology (most notably by the CHICAGO SCHOOL) and psychology since the early 20th century, with psychologists principally focused on the implications of urban life for mental health and social norms.

**urbanization** *n.* **1.** the trend toward living in cities, which are defined by the United States Bureau of the Census as having populations of 50,000 or more. **2.** the process of becoming a community with urban characteristics. In the early 20th century, psychological research on urbanization initially focused on the impact of urban life on mental health, purporting to find a link between inner-city residence and increased rates of mental illness; this position was later qualified (see DRIFT HYPOTHESIS). Inquiry has since expanded to investigate the psychological, physical, and behavioral consequences of the urban environment (e.g., population density, crowding, noise, pollution) and the social, economic, and cultural dimensions of city life. See also URBAN ECOLOGY. —**urbanize** *vb.*

**urban legend** an incredible or lurid story, often involving a mixture of horror and humor, that is widely repeated as if true (often as the experience of a "friend of a friend") but can never be firmly documented. Urban legends differ from myths and folktales in that they nearly always have a contemporary setting and often involve modern technology (e.g., the many such tales about microwave ovens).

**Urban's weights** see MÜLLER—URBAN WEIGHTS.

**Urecholine** *n.* a trade name for BETHANECHOL.

**urethra** *n.* a membrane-lined duct that carries urine from the urinary bladder to the exterior. In males, it passes through the CORPUS SPONGIOSUM of the penis and also serves as a channel for semen at ejaculation. In females, the urethra is less than 4 cm long and leads to an opening anterior to the vaginal orifice. —**urethral** *adj.*

**urethral eroticism** in psychoanalytic theory, sexual pleasure derived from urination. Also called **urethral erotism**. See UROLAGNIA.

**urethritis** *n.* inflammation of the urethra, with symptoms of painful urination (DYSURIA) and urethral dis-

charge. The infection may be transmitted by sexual contact, as in cases of GONORRHEA and NONGONOCOCCAL URETHRITIS.

**urge incontinence** a type of URINARY INCONTINENCE involving a sudden, strong desire to urinate followed by involuntary contractions of the bladder regardless of the amount of urine in the bladder. Because the bladder actually contracts, urine is released quickly, making it difficult for people with urge incontinence to predict or control the occurrence of the problem.

**urinary incontinence** loss of conscious control of urination due to an organic condition, such as a neurological disorder or age-related changes in the bladder or kidneys. See STRESS INCONTINENCE; URGE INCONTINENCE. Compare ENURESIS.

**urination** *n.* the discharge of urine from the bladder, which is effected by voluntary relaxation of the SPHINCTER at the junction of the bladder and urethra and reflex contraction of the bladder wall (see MICTURITION REFLEX). Also called **micturition**.

**urn model** a THOUGHT EXPERIMENT in which objects of interest (e.g., people, events) are represented as colored balls placed in an urn or other container. In imagination, the experimenter randomly removes one ball from the urn, notes its color, and places it back before repeating the process; the goal is to determine the probability of drawing one color or another. The urn model is a convenient way to calculate certain basic probabilities using CONDITIONAL PROBABILITIES.

**uro-** (**ur-**) *combining form* urine or the urinary system.

**urogenital** *adj.* referring to organs concerned with both excretion and reproduction. Also called **urinogenital**.

**urolagnia** *n.* sexual interest focused on urine and urination. This may involve watching others urinate, being urinated on during sexual activity, urinating on the partner during sexual activity, or drinking one's own urine. Also called **urophilia**. See also URETHRAL EROTICISM.

**URT** abbreviation for UNCERTAINTY REDUCTION THEORY.

**urticaria** *n.* see HIVES.

**US** abbreviation for UNCONDITIONED STIMULUS.

**usability engineering** a specialty that applies knowledge of human capabilities and limitations to the design of systems (typically human-computer systems) with the goal of ensuring ease of use. This can be achieved by enhancing such attributes as design intuitiveness, learnability, and comprehensibility. See also ENGINEERING PSYCHOLOGY; USER-CENTERED DESIGN.

**usable** *adj.* in ergonomics, describing a product or system that is designed to be easy to use with a minimum of frustration, errors, and inconvenience. —**usability** *n.*

**U.S. Department of Veterans Affairs (VA)** an agency of the U.S. government established in 1930 to administer the laws providing benefits and other services to veterans, their dependents, and their beneficiaries. Its mission is to serve U.S. veterans and their families with compassion; to be their principal advocate in ensuring that they receive medical care, benefits, social support, and lasting memorials; and to promote the health, welfare, and dignity of all veterans in recognition of their service to the nation.

**US devaluation** abbreviation for UNCONDITIONED STIMULUS DEVALUATION.

**U.S. Drug Enforcement Administration (DEA)** the branch of the U.S. Department of Justice responsible for enforcing the CONTROLLED SUBSTANCES ACT and other drug-related laws and regulations.

**use-and-disuse theory** see LAMARCKISM.

**useful field of view** denoting a brief computer-administered test of cognitive selective attention in the visual periphery that predicts accident risk while driving. Performance on the test typically declines with adult age but can be improved through training.

**user-centered design** in ergonomics, design practice with a central focus on understanding the characteristics of the target group in order to produce USABLE products or systems. See also ENGINEERING PSYCHOLOGY; USABILITY ENGINEERING.

**user-friendly** *adj.* describing a product or system that is easy to understand or use.

**U.S. Food and Drug Administration (FDA)** the U.S. agency responsible for the regulation and approval of prescription and over-the-counter medications. Following clinical trials on a new agent, drug manufacturers submit to the FDA a New Drug Application that includes trial results, data analyses, and information about the drug's mechanism of action. An FDA review team evaluates the application to ascertain whether the efficacy of the drug outweighs its side effects; the team then decides whether to approve the drug for the U.S. market. The FDA also regulates vaccines, veterinary medications, medical devices, medical and nonmedical radiation-emitting products (e.g., ultrasound equipment, microwave ovens), food, dietary supplements, cosmetics, and tobacco products.

**U-shaped distribution** a graphical representation of a FREQUENCY DISTRIBUTION that is shaped more or less like the letter U, with the maximum frequencies at both ends of the range of the variable. For example, the number of people infected by the flu each year may have a U-shaped distribution by age, with those who are very young or very old having the highest frequency of occurrence. In an **inverted U-shaped distribution**, the most frequent values are in the middle of the distribution and the least frequent values are at the extremes.

**Usher syndrome** a genetic disorder, inherited as an autosomal recessive trait (see RECESSIVE ALLELE), causing SENSORINEURAL DEAFNESS, deterioration of vision due to RETINITIS PIGMENTOSA, and in some cases, loss of balance. [Charles Howard **Usher** (1865–1942), British ophthalmologist]

**US preexposure effect** abbreviation for UNCONDITIONED STIMULUS PREEXPOSURE EFFECT.

**usual, customary, and reasonable fees (UCR fees)** see CUSTOMARY, PREVAILING, AND REASONABLE FEES.

**us-versus-them effect** the tendency of individuals to view the social world in terms of an INGROUP (“us”) and an OUTGROUP (“them”). Consequently, people prefer to associate with those who are similar over those who are different, preferentially allocate resources to similar others, and hold more positive beliefs about similar others.

**UTCPAB** abbreviation for UNIFIED TRI-SERVICE COGNITIVE PERFORMANCE ASSESSMENT BATTERY.

**uterine orgasm** see VULVAL ORGASM.

**utero- (uter-)** *combining form* womb (uterus).

**uterus** *n.* the hollow muscular organ in female mammals in which the embryo develops from the time of IMPLANTATION until birth. It is connected to the ovaries via the FALLOPIAN TUBES and to the exterior via the vagina, into which the cervix (neck) of the uterus projects. The ENDOMETRIUM (lining) of the uterus undergoes changes during the MENSTRUAL CYCLE. Also called **womb**. —**uterine** *adj.*

**U test** see MANN–WHITNEY U TEST.

**utilitarian function of an attitude** the role an attitude can play in obtaining rewards, avoiding punishments, or both. For example, a person might adopt a positive attitude toward a particular product because it is effective and a negative attitude toward its chief competitor because it is ineffective. See also FUNCTIONAL APPROACH TO ATTITUDES.

**utilitarianism** *n.* an ethical theory based on the premise that *the good* is to be defined as that which brings the greatest amount or degree of happiness; thus, an act is considered moral if, compared to possible alternatives, it provides the greatest good for the greatest number of people. The doctrine is often reduced to the single maxim: The greatest good for the greatest number. The classical formulation of utilitarianism is that of British jurist and philosopher Jeremy Bentham (1748–1832), especially as championed by James MILL and popularized by John Stuart MILL. Utilitarianism is heavily influenced by HEDONISM and EUDEMONISM; it also shares with BEHAVIORISM the notion that the fundamental motive for action is pleasure or benefit. Because it rejects the idea that actions may be intrinsically good or bad, irrespective of their consequences, and can provide no objective means of calculating the amount of happiness that derives from particular actions, utilitarianism is in practice a species of ethical RELATIVISM. Compare NATURAL LAW THEORY. —**utilitarian** *adj.*

**utility** *n.* **1.** in decision making and economic theory, the subjective value of some outcome to the individual. **2.** in industrial and organizational psychology, the value of an intervention or program as judged on the basis of its monetary worth to the organization. For example, there are methodologies for assessing the monetary gains achieved from using particular tests to select employees or particular training programs. **3.** in biology, the usefulness of a characteristic in preserving the life of an organism or continuing the species. Both ARTIFICIAL SELECTION and NATURAL SELECTION operate to increase utility. **4.** in UTILITARIANISM, the goodness of an act as determined by the amount or degree of happiness derived from it. **5.** in general, the capacity of a thing to accomplish its designed purpose, as in the explanatory utility of a psychological theory.

**utility standards** the information requirements of those for whom an evaluation research study is carried out. These standards include identifying all STAKEHOLDERS, selecting evaluation objectives appropriate to the intended recipients of the findings, providing clear and timely reporting of information, and following procedures that maximize the study's utilization. See also ACCURACY STANDARDS; FEASIBILITY STANDARDS; PROPRIETY STANDARDS.

**utility theory** in decision making, any normative theory of UTILITY that attempts to describe rational or optimal choice behavior.

**utilization deficiency** the inability of individuals to improve task performance by using strategies that they have already acquired and demonstrated the ability to use because they are not spurred to do so by memory. Although historically utilization deficiency has been most frequently studied in children, current research suggests that it may occur at any age as a by-product of diminished WORKING MEMORY capacity. Compare MEDIATIONAL DEFICIENCY; PRODUCTION DEFICIENCY.

**utilization-focused evaluation** attempts to maximize the usefulness of the results of an evaluation research study for its intended users or STAKEHOLDERS. All aspects of the design and the execution of the evaluation should be directed to this end. See also UTILITY STANDARDS; PARTICIPATORY EVALUATION.

**utilization review (UR)** a formal review of the necessity and quality of services provided in a hospital or clinic or by an individual provider. Conducted by a specially appointed committee, a utilization review often addresses whether the level of service provided is the most appropriate to the severity of the presenting problem. See also CONTINUED-STAY REVIEW; EXTENDED-STAY REVIEW.

**utopia** *n.* an idealized, perfect society. Coined by English statesman and author Thomas More (1478–1535) in his speculative political fiction *Utopia* (1516), the term is of Greek derivation (literally, “no place”). By contrast, the term **dystopia**, coined in about 1950, refers to an imaginary society of nightmarish conditions. —**utopian** *adj.*

**utopianism** *n.* **1.** belief in the possibility of establishing an ideal social system (see UTOPIA) on the basis of rational and moral principles. **2.** any idealistic approach to political or social questions that is thought to depend on an unrealistic view of human nature.

**utricle** *n.* the larger of the two VESTIBULAR SACS in the inner ear, the other being the SACCULE. Like the saccule, the utricle senses not only the position of the head with respect to gravity but also acceleration and deceleration. This is achieved by a special patch of epithelium—the MACULA—inside both the utricle and saccule. —**utricular** *adj.*

**utterance** *n.* a unit of spoken language, which may be of any length but can usually be identified by conversational turn taking or by clear breaks in the stream of speech. MEAN LENGTH OF UTTERANCE is considered an important index of language development in young children.

**UV** abbreviation for ULTRAVIOLET.

**uveal tract** see EYE.

**uvula** *n.* **1.** a fleshy appendage that hangs from the SOFT PALATE. It plays an important role as part of the apparatus for sound production of the human voice (see UVULAR). Also called **palatine uvula**. **2.** any similarly shaped structure, such as those located in the urinary bladder and the cerebellum.

**uvular** **1.** *adj.* of or relating to the UVULA. **2.** *n.* a speech sound produced with the back of the tongue pressing against the uvula, such as the [r] sound in French.

**uxoricide** *n.* the murder of a wife by her husband.

**uxorilocal** *adj.* see MATRILOCAL.

# Vv

**V** abbreviation for VERBAL ABILITY.

**V1** VISUAL AREA 1, which in primates is coextensive with the STRIATE CORTEX (primary visual cortex). Neurons in V1 have relatively simple stimulus requirements for maximum activation, unlike the visual areas to which V1 projects, which include V2, V4, and V5. V1 is the preferred name of this cortex for discussions of the functional differences between cortical regions; striate cortex, primary visual cortex, and area 17 are the preferred names for discussions of cortical anatomy.

**V2** VISUAL AREA 2, which in primates is a band of cerebral cortex located adjacent and anterior to V1. It is coextensive with Brodmann's area 18 (see PRESTRIATE CORTEX) and receives its major input from V1.

**V3** VISUAL AREA 3, which in primates is located in the PRESTRIATE CORTEX anterior to V2, from which it receives signals. It is specialized for monochromatic pattern perception. The ventral region is also referred to as area VP (ventral posterior area), whereas the dorsal region is often divided into two regions, V3a and V3b. The relationship among these three aspects of V3 is not fully understood.

**V4** VISUAL AREA 4, which in primates is located in the occipitotemporal cortex. Most neurons in V4 are sensitive to wavelength, and damage to a similar area in the human brain causes cerebral achromatopsia, a form of cortical color blindness (see ACHROMATISM).

**V5** VISUAL AREA 5, which in primates is located in the temporal cortex. Most neurons in V5 are sensitive to the rate and direction of motion of a stimulus, and damage to a similar area in the human brain causes AKINETOPSIA (motion agnosia). Also called **MT** (i.e., **middle temporal**, because V5 is located toward the back of the MIDDLE TEMPORAL GYRUS); **visual area MT**.

**VA** abbreviation for U.S. DEPARTMENT OF VETERANS AFFAIRS.

**VABS** abbreviation for VINELAND ADAPTIVE BEHAVIOR SCALES.

**vACC** abbreviation for ventral ANTERIOR CINGULATE CORTEX.

**vacuum activity** in classical ethology, the occurrence of a FIXED ACTION PATTERN in the absence of the usual external stimulus (the RELEASER, or sign stimulus) that triggers the pattern. This is believed to be caused by a build-up of action-specific or motivational energy that overrides the INNATE RELEASING MECHANISM. Also called **vacuum response**. [proposed by Konrad LORENZ]

**vagabond neurosis** see DROMOMANIA.

**vagal tone** a measure of the variability of the heart rate associated with inhalation and exhalation (see RESPIRATORY SINUS ARRHYTHMIA), which is thought to reflect parasympathetic influence via the VAGUS NERVE.

**vagina** *n.* a tubelike structure in female mammals that leads from the cervix (neck) of the uterus to the exterior. The muscular walls of the vagina are lined with mucous membrane, and two pairs of VESTIBULAR GLANDS around

the vaginal opening secrete a fluid that facilitates penetration by the penis during coitus. —**vaginal** *adj.*

**vagina dentata** in folklore, a vagina with teeth that can castrate the male partner. In the classical psychoanalytic theory of Sigmund FREUD, for women, it is a fantasy believed to stem from intense PENIS ENVY and a desire to castrate the partner as an act of revenge; for men, it is believed to stem from CASTRATION ANXIETY.

**vagina envy** a psychological characteristic of men who desire the ability to become pregnant and bear children. See also FEMININITY COMPLEX; WOMB ENVY.

**vaginal administration** see ADMINISTRATION.

**vaginal orgasm** **1.** female orgasm achieved through vaginal stimulation. **2.** in early psychoanalytic theory, the "mature, feminine" orgasm, as opposed to "immature, masculine" orgasms produced from clitoral stimulation. This view has long since been refuted. Indeed, researchers have demonstrated that the clitoris is the focus of female sexual response and that vaginal orgasms are primarily related to indirect stimulation of the clitoris and labia during intercourse. See COITAL ANORGASMIA.

**vaginal plethysmograph** see PLETHYSMOGRAPHY.

**vaginal sex** sexual intercourse by means of vaginal penetration. See COITUS.

**vaginismus** *n.* a sexual dysfunction in which spasmic contractions of the muscles around the vagina occur during or immediately preceding sexual intercourse, causing the latter to be painful or impossible. See also FUNCTIONAL VAGINISMUS.

**vagotomy** *n.* surgical cutting or interruption of the VAGUS NERVE, which has motor, sensory, and physiological functions.

**vagus nerve** the tenth CRANIAL NERVE, a mixed nerve with both sensory and motor fibers that serves many functions. The sensory fibers innervate the external ear, vocal organs, and thoracic and abdominal VISCERA. The motor nerves innervate the tongue, vocal organs, and—through many ganglia of the PARASYMPATHETIC NERVOUS SYSTEM—the thoracic and abdominal viscera. Also called **cranial nerve X**; **pneumogastric nerve**.

**VAKT** abbreviation for visual, auditory, kinesthetic, and tactile (senses). See FERNALD METHOD.

**valence** *n.* **1.** in the FIELD THEORY of Kurt LEWIN, the subjective value of an event, object, person, or other entity in the LIFE SPACE of the individual. An entity that attracts the individual has **positive valence**, whereas one that repels has **negative valence**. **2.** in certain theories of motivation, the anticipated satisfaction of attaining a particular goal or outcome.

**valence-instrumentality-expectancy theory** a theory of WORK MOTIVATION holding that the level of effort exerted by employees will depend on a combination of three variables: (a) the EXPECTANCY of employees that effort will lead to success in the job, (b) the belief of employees

that success will lead to particular outcomes (see INSTRUMENTALITY THEORY), and (c) the value of these outcomes (see VALENCE). A numerical value can be obtained for variable (a) using the SUBJECTIVE PROBABILITY estimates of employees, for variable (b) by measuring the correlation of performance to rewards, and for variable (c) by asking employees to rate the desirability of the rewards. The motivational force, or the amount of effort employees will exert, can then be calculated. See also PATH–GOAL THEORY OF LEADERSHIP; PORTER–LAWLER MODEL OF MOTIVATION. [proposed in 1964 by Canadian organizational psychologist Victor H. Vroom (1932– )]

**validating marriage** a long-lasting marriage in which the partners express mutual respect even when they disagree.

**validation** *n.* the process of establishing the truth or logical cogency of something. An example is determining the accuracy of a research instrument in measuring what it is designed to measure. In some forms of psychotherapy, validation may take the form of MIRRORING of the client's judgment or experience by the therapist. —**validate** *vb.*

**validity** *n.* **1.** the characteristic of being founded on truth, accuracy, fact, or law. **2.** the degree to which empirical evidence and theoretical rationales support the adequacy and appropriateness of conclusions drawn from some form of assessment. Validity has multiple forms, depending on the research question and on the particular type of inference being made. For example, the three major types of test validity are CRITERION VALIDITY, based on correlation with an accepted standard; CONSTRUCT VALIDITY, based on the conceptual variable underlying a test; and CONTENT VALIDITY, based on the subject matter of a test. Other forms of validity prominent in the social sciences include ECOLOGICAL VALIDITY, EXTERNAL VALIDITY, INTERNAL VALIDITY, and STATISTICAL CONCLUSION VALIDITY. —**valid** *adj.*

**validity check** the process of verifying that a data set is free of errors and adheres to standard or intended rules. Performed manually or using software, a validity check may involve such things as verifying the accuracy of calculations and the legitimacy of included values (e.g., impossible values are not present), confirming that information is consistent across records, and confirming that no records are missing.

**validity coefficient** an index, typically a CORRELATION COEFFICIENT, that reflects how well an assessment instrument predicts a well-accepted indicator of a given concept or criterion. For example, if a measure of criminal behavior is valid, then it should be possible to use it to predict whether a person (a) will be arrested in the future for a criminal violation, (b) is currently breaking the law, and (c) has a previous criminal record. A validity coefficient could be used to relate scores on the measure to each of these criteria and thus determine how useful the measure actually is for behavioral forecasting.

**validity criterion** an external concept or standard of comparison that is used to define the attribute an instrument is purported to measure and that is applied in estimating how well the measurement instrument actually fulfills its intended purpose.

**validity generalization** the use of META-ANALYSIS and other statistical procedures to assess the evidence of a test's adequacy and appropriateness in multiple situations and settings. Validity generalization typically involves correct-

ing all of the correlations being examined for methodological and statistical limitations and flaws and providing estimates of correlations or results that would have been obtained in the absence of such limitations.

**validity tag** see METACOGNITIVE MODEL OF ATTITUDES.

**Valium** *n.* a trade name for DIAZEPAM.

**valor** *n.* see COURAGE.

**valproic acid** a carboxylic acid (also formulated as **valproate sodium**; U.S. trade name: **Depacon**) used as an ANTI-CONVULSANT and MOOD STABILIZER. Although exact mechanisms of action remain unclear, valproic acid may exert its effects by reducing membrane sodium-channel activity (see ION CHANNEL), thereby slowing neuronal activity. It may also stimulate the synthesis of the inhibitory neurotransmitter gamma-aminobutyric acid (GABA). Valproic acid and valproate sodium are officially approved by the U.S. Food and Drug Administration for the management of seizures and of manic episodes associated with bipolar disorders. Although in general less toxic than lithium, these drugs have been associated with fatalities due to liver failure, particularly in children under 2 years of age, as well as pancreatitis; serum monitoring of drug levels and liver function is therefore required, particularly on starting treatment. Valproic acid and valproate sodium should not be taken during pregnancy due to risks of NEURAL TUBE defects in the fetus; fetal exposure to valproic acid in the first trimester has also been linked to an increased risk of autism. U.S. trade name: **Depakene**.

**VALS** *n.* Values, Attitudes, and Lifestyles: a proprietary method of segmenting consumers according to their personal characteristics. Eight categories of consumers are identified on the basis of responses to proprietary questionnaires.

**value** *n.* **1.** the mathematical magnitude or quantity of a variable. **2.** a moral, social, or aesthetic principle accepted by an individual or society as a guide to what is good, desirable, or important. **3.** the worth, usefulness, or importance attached to something.

**value analysis** a type of CONTENT ANALYSIS of written material, consisting of a table or other systematic notation documenting the frequency of appearance in the material of all expressions referring to specified values.

**value-driven care** a federally backed movement to improve quality and reduce costs in U.S. health care by increasing system transparency and encouraging consumer choice. Such an emphasis on quality contrasts with the current volume-driven model of care in which consumers are passive recipients of treatments and providers are reimbursed for the number of cases they handle, regardless of patient outcome or the standard of services rendered. The central premise underlying value-driven care is that informed consumers are active and discriminating decision makers who will examine their available service options and choose those that will be the most beneficial and cost effective, and that this in turn will foster competition among providers to provide better services at reduced costs (e.g., by eliminating waste, improving cooperation and coordination among providers, preventing foreseeable patient complications).

For example, if a person needing an operation is able to review readily available statistics on outcome, price, and so forth, he or she will likely avoid choosing hospitals, procedures, or medical professionals having poor success rates or costing too much. According to the U.S. government,

however, the success of value-driven care requires not only the consistent measurement and public reporting of provider quality and cost information but also the nationwide adoption of standardized, interoperable health information technology and the use of incentives that motivate all parties within the system—payors, patients, providers, and health care facilities—to achieve better care for less money.

**value-expressive function of an attitude** the role an attitude can play in the expression of core values. For example, a person might adopt a positive attitude toward a religious symbol because that symbol is associated with important religious values. See also FUNCTIONAL APPROACH TO ATTITUDES.

**value-free evaluation** see GOAL-FREE EVALUATION.

**value judgment** an assessment of individuals, objects, or events in terms of the values held by the observer rather than in terms of their intrinsic characteristics objectively considered. In some areas, such as aesthetics or morality, where there often are no objective right or wrong responses, value judgments are common, but in hard and social sciences they are frequently considered undesirable.

**Values and Preferences Scale (VPS)** a 24-item questionnaire on the importance of certain aspects of daily life to individuals with cognitive impairment, as assessed both from their perspective and that of their caregivers. Each party rates the items on a 1 to 3 scale, ranging from *not at all important* (1) to *very important* (3), with the items relating to the recipients' values and preferences for safety, personal autonomy, financial independence, need for support and assistance, social relationships, spiritual or religious needs, and other concerns of everyday life. The VPS is designed to help clarify the recipients' current and future care needs. [developed in 2005 by U.S. psychologist Carol J. Whitlatch, U.S. social worker Lynn Friss Feinberg, and Shandra S. Tuck]

**Values, Attitudes, and Lifestyles** see VALS.

**values clarification** any process intended to promote an individual's awareness and understanding of his or her moral principles and ethical priorities and their relationships to behavior in daily life. Individuals may be asked to carry out a series of exercises to this effect in some forms of psychotherapy.

**values education** **1.** instruction that is focused on principles, moral standards, or ethical qualities that are considered desirable, in addition to academic instruction. **2.** education focused on socially acceptable or correct living.

**value system** the moral, social, aesthetic, economic, and religious concepts accepted either explicitly or implicitly by an individual or a particular society.

**vampirism** **n. 1.** in folk belief and literature, the practices associated with **vampires** ("undead" corpses supposed to drink the blood of living beings). In the portrayal of vampirism in literature, sexual pleasure is often associated with sucking blood from another person, a representation of the "love bite." **2.** a **PARAPHILIA** whereby the drinking of blood elicits sexual arousal or pleasure. Also called **Renfield's syndrome**. [first described by German psychiatrist Richard von Krafft-Ebing (1840–1902); named after the lawyer and later insane follower of Dracula in the 1897 novel by Bram Stoker] **3.** a rare symptom of schizophrenia, characterized by vampiric or other delusions and the drinking of blood. Both of the last two senses are also called **clinical vampirism**.

**van Buchem's syndrome** an AUTOSOMAL ABERRATION marked by thickening and osteosclerosis of bones of the face, skull, and trunk, resulting in facial paralysis and loss of hearing and vision. The symptoms usually begin around puberty. [Francis Steven Peter **van Buchem** (1897–1979), Dutch physician]

**vandalism** **n.** willful defacement or destruction of property. A persistent pattern of vandalism is one symptom of CONDUCT DISORDER.

**Vandenbergh effect** the effects of CHEMICAL COMMUNICATION in influencing age of puberty in rodent populations. Adult males produce an odor that can accelerate puberty in young females, leading to earlier reproduction. However, adult females produce odors that inhibit puberty in females. As a result, in low-density populations with more males than females, young females mature earlier, but in dense populations with many adult females, young females mature more slowly, leading to a regulation of population density. See also WHITTEN EFFECT. [John G. **Vandenbergh** (1935– ), U.S. biologist]

**vanishing cues methodology** a computer-assisted training technique designed to teach new, complex knowledge to individuals with memory impairment. The technique takes advantage of the patient's preserved ability to respond to partial cues. Initially, as much information is provided as is needed for the patient to make a correct response. Across learning trials, information is gradually withdrawn until the patient can respond correctly in the absence of any cues.

**variability** **n. 1.** the quality of being subject to change or variation in behavior or emotion. **2.** the degree to which members of a group or population differ from each other, as measured by statistics such as the RANGE, STANDARD DEVIATION, and VARIANCE.

**variable** **n.** a condition in an experiment or a characteristic of an entity, person, or object that can take on different categories, levels, or values and that can be quantified (measured). For example, test scores and ratings assigned by judges are variables. Numerous types of variables exist, including CATEGORICAL VARIABLES, DEPENDENT VARIABLES, INDEPENDENT VARIABLES, MEDIATORS, MODERATORS, and RANDOM VARIABLES. Compare CONSTANT.

**variable error** see RANDOM ERROR.

**variable-interval schedule (VI schedule)** in free-operant conditioning, a type of INTERVAL REINFORCEMENT in which the reinforcement or reward is presented for the first response after a variable period has elapsed since the previous reinforcement. Reinforcement does not depend on the number of responses during the intervals. The value of the schedule is given by the average interval length; for example, "VI 3" indicates that the average length of the intervals between potential reinforcements is 3 minutes. This type of schedule generally produces a relatively constant rate of responding. It was formerly known as an **aperiodic reinforcement schedule**.

**variable rate theory** a group of theories that describe aging as resulting from individual differences that are affected by internal factors such as disease, genetic mutations, or metabolism and by external factors such as environment, diet, or exercise. Compare GENETIC PROGRAMMING THEORY.

**variable-ratio schedule (VR schedule)** in free-operant conditioning, a type of INTERMITTENT REINFORCEMENT

in which a response is reinforced after a variable number of responses. The value of the schedule is given by the average number of responses per reinforcer; for example, "VR 10" indicates that the average number of responses before reinforcement is 10.

**variable stimulus** in PSYCHOPHYSICAL RESEARCH, any one of a set of experimental stimuli that are to be systematically compared to a constant stimulus.

**variable-time schedule (VT schedule)** a schedule of stimulus presentation in which stimuli are presented, independently of any behavior, at variable time intervals. The value of the schedule is given as the mean of the intervals. See also NONCONTINGENT REINFORCEMENT.

**variance** (symbol:  $\sigma^2$ ) *n.* a measure of the spread, or DISPERSION, of scores within a sample or population, whereby a small variance indicates highly similar scores, all close to the sample MEAN, and a large variance indicates more scores at a greater distance from the mean and possibly spread over a larger range. See also STANDARD DEVIATION.

**variance-covariance matrix** see COVARIANCE MATRIX.

**variance estimate** an index of variation in a population that has been calculated using a sample of that population. For example, a sample STANDARD DEVIATION is an estimate of the deviation in the larger population.

**variance-stabilizing transformation** in REGRESSION ANALYSIS or ANALYSIS OF VARIANCE, any of a class of mathematical processes that convert data showing HETEROGENEITY OF VARIANCE to a different form, so as to enable the application of specific analytical techniques or to simplify considerations.

**variant** *n.* in a group of objects or events, one that differs from the others in some way while remaining essentially similar to them.

**variate** *n.* **1.** a specific value of a particular VARIABLE. **2.** a RANDOM VARIABLE itself.

**variation** *n.* **1.** the existence of qualitative differences in form, structure, behavior, and physiology among the individuals of a population, whether due to heredity or to environment. Both ARTIFICIAL SELECTION and NATURAL SELECTION operate on variations among organisms, but only GENETIC VARIATION is transmitted to offspring. **2.** in statistics, the degree of VARIANCE or DISPERSION of values that is obtained for a specific variable.

**variation coefficient** see COEFFICIENT OF VARIATION.

**variations of aging** individual differences in the effects of aging caused either by intrinsic factors (e.g., disease, genetics) or by extrinsic factors (e.g., lifestyle, environment, culture).

**varicella** *n.* see CHICKEN POX.

**varicella-zoster** *n.* see CHICKEN POX; HERPES INFECTION.

**varied mapping** in a SEARCH task, a condition in which target and distractor stimuli change roles randomly over the course of an experiment, so that a stimulus may be a target in one trial and a distractor in the next. Compare CONSISTENT MAPPING.

**variety** *n.* **1.** in BIOLOGICAL TAXONOMY, a subdivision of a species comprising those members of the species that are distinct with reference to particular minor characteristics that do not affect their ability to interbreed to produce fer-

tile offspring. The various BREEDS of domestic animals are examples of varieties. **2.** in linguistics, a version of a language that is phonologically or grammatically distinct from the STANDARD LANGUAGE and may be associated with such categories as region, ethnicity, or social class. See also DIALECT; REGISTER.

**variform universal** see PSYCHOLOGICAL UNIVERSAL.

**varimax rotation** a statistical procedure applied within FACTOR ANALYSIS and PRINCIPAL COMPONENTS ANALYSIS to simplify solutions and enhance interpretation of the results. It is a type of ORTHOGONAL ROTATION intended to make each factor have a small number of large FACTOR LOADINGS and a large number of zero (or small) factor loadings. Thus, following a varimax rotation, each original variable tends to be associated with a small number of factors, and each factor represents only a small number of variables. See FACTOR ROTATION.

**vas-** combining form see VASO-.

**vascular dementia** severe loss of cognitive functioning as a result of cerebrovascular disease. It can be due to repeated strokes, a single large stroke, or chronic cerebral ischemia. It is one of the most common types of dementia. Also called **multi-infarct dementia**.

**vascular depression** a MAJOR DEPRESSIVE EPISODE that occurs shortly after the onset or treatment of cardiovascular disease or that is assumed to be caused by cardiovascular disease. Often, this episode is characterized by ANHEDONIA rather than depressed mood.

**vascular insufficiency** failure of the cardiovascular system to deliver an adequate supply of blood to the body tissues. This may involve large regions of the body or a particular organ or area of an organ. ATHEROSCLEROSIS, for example, can reduce the blood supply to the leg muscles, causing cramplike pains and limping; the heart, resulting in angina pectoris; or the brain, causing perceptual abnormalities and stroke.

**vascular sclerosis** thickening of the walls of the blood vessels, possibly related to hypertension. In audition, the condition can lead to hearing loss, often seen as a function of aging (see PRESBYCUSIS).

**vasculitis** *n.* inflammation of a blood vessel.

**vas deferens** (*pl.* **vasa deferentia**) a duct that conveys spermatozoa from the EPIDIDYMIS and unites with the duct of the SEMINAL VESICLE to form the ejaculatory duct, which leads to the urethra. Also called **ductus deferens**; **seminal duct**; **spermatic duct**.

**vasectomy** *n.* a surgical procedure for male STERILIZATION in which the vas deferens, which carries sperm from the testes to the urethra, is removed, segmented, or cut and the resulting openings blocked. The procedure must be regarded as permanent as it cannot always be reversed.

**vaso-** (**vas-**) combining form **1.** blood vessel (e.g., VASODILATION). **2.** the vas deferens (e.g., VASECTOMY).

**vasoconstriction** *n.* narrowing of blood vessels, which is controlled by VASOMOTOR nerves of the sympathetic nervous system or by such agents as VASOPRESSIN or SYMPATHOMIMETIC DRUGS. It has the effect of increasing blood pressure. See also ERGOT DERIVATIVE.

**vasoconstrictor** *n.* any drug or other agent (e.g., the hormone vasopressin) that causes constriction of blood vessels so that the diameter of the vessels is reduced. The



vasomotor nerves of the SYMPATHETIC NERVOUS SYSTEM also serve as vasoconstrictors. Vasoconstrictor drugs are used to increase blood pressure that has fallen to dangerously low levels. Also called **vasopressor**.

**vasodilation** *n.* widening of blood vessels, as by the action of a VASOMOTOR nerve or a drug, which has the effect of lowering blood pressure.

**vasodilator** *n.* any drug or other agent that serves to increase the diameter of blood vessels, generally by relaxing smooth muscle in arterial walls. Vasodilators are commonly used in the treatment of hypertension and angina pectoris.

**vasomotor** *adj.* describing or relating to nerve fibers, drugs, or other agents that can affect the diameter of blood vessels, especially small arteries, by causing contraction or relaxation of the smooth muscle of their walls. Fibers of the sympathetic and parasympathetic divisions of the AUTONOMIC NERVOUS SYSTEM have a vasomotor effect.

**vasopressin** *n.* a PEPTIDE hormone produced in the PARAVENTRICULAR NUCLEUS and SUPRAOPTIC NUCLEUS of the hypothalamus and released by the posterior PITUITARY GLAND into the blood as controlled by OSMORECEPTORS. It has two forms that differ by a single amino acid—**lysine vasopressin (LVP)** in pigs and **arginine vasopressin (AVP)** in humans and all other mammals—and that bind to one of three distinct receptors, called V1a, V1b, and V2. Both forms increase fluid retention in the body by signaling the kidneys to reabsorb water instead of excreting it in urine, and they raise blood pressure by signaling specific smooth muscle cells to contract and narrow small blood vessels. Beside these and other physiological functions, vasopressin modulates complex cognitive functions—such as attention, learning, and the formation and recall of memories—and may also modulate emotion. Additionally, vasopressin and the chemically related peptide hormone OXYTOCIN have been implicated in a range of mammalian social behaviors, such as aggression, territoriality, maternal and paternal care, PAIR-BOND formation and mating, social recognition, attachment, affiliation, and vocalization, as well as components of human-specific social behaviors and disorders (e.g., autism).

Vasopressin itself may be involved in the pathophysiology of anxiety disorders, including posttraumatic stress disorder, and has been implicated in the pathophysiology of depression as well. AVP secretion appears to play a critical role in the stress response through activation of the HYPOTHALAMIC–PITUITARY–ADRENAL AXIS (HPA axis): In times of stress, the HPA axis secretes CORTICOTROPIN-RELEASING FACTOR and AVP to stimulate the release of CORTICOTROPIN from the anterior pituitary gland synergistically, culminating in a rise in circulating GLUCOCORTICOIDs. Vasopressin is produced synthetically (e.g., DESMOPRESSIN) for such therapeutic purposes as helping the body conserve fluids (e.g., in the treatment of DIABETES INSIPIDUS), restoring blood pressure (e.g., in the treatment of hypotension), and facilitating blood clotting (e.g., in the treatment of hemophilia). Also called **antidiuretic hormone (ADH)**.

**vasopressor** **1.** *adj.* causing constriction of blood vessels and thereby raising blood pressure. **2.** *n.* see VASOCONSTRICTOR.

**vasovagal syncope** see SYNCOPE.

**Vater's corpuscle** see PACINIAN CORPUSCLE. [Abraham Vater (1684–1751), German anatomist and botanist]

**VCP** abbreviation for VISUAL COMFORT PROBABILITY.

**VD** abbreviation for venereal disease. See SEXUALLY TRANSMITTED DISEASE.

**vection** *n.* see INDUCED MOVEMENT.

**vector** *n.* **1.** a mathematical entity with magnitude and direction. Compare SCALAR. **2.** in MULTIVARIATE ANALYSIS, a one-dimensional arrangement in which the scores of *n* individuals on a particular measure are arrayed. **3.** in MATRIX ALGEBRA, a column or row of a matrix. **4.** an animal or other organism that carries and spreads disease. **5.** see GENE THERAPY.

**Vedanta** *n.* a collection of metaphysical theories and mental disciplines that emerged in India around the 6th century BCE and derived from the sacred texts of HINDUISM, the *Upanishads*. The sophistication of certain of these philosophies has influenced modern science, including the development of quantum theory. See OBJECT OF CONSCIOUSNESS; PURE CONSCIOUSNESS.

**vegetative** *adj.* **1.** pertaining to basic physiological functions, such as those involved in growth, respiration, sleep, digestion, excretion, and homeostasis, that are governed primarily by the AUTONOMIC NERVOUS SYSTEM, which is sometimes called the **vegetative nervous system**. **2.** living without apparent cognitive neurological function or responsiveness, as in persistent VEGETATIVE STATE. **3.** denoting ASEXUAL reproduction, especially in plants.

**vegetative soul** in the thought of ARISTOTLE, the type of soul possessed by plants. The vegetative soul has the capacity for growth and reproduction but does not have the capacity to receive and react to sense impressions or the capacity for rational thought. Compare RATIONAL SOUL; SENSITIVE SOUL.

**vegetative state** a condition in which a person appears awake but lacks any self-awareness, environmental awareness, or basic or higher level cognitive functions (e.g., information processing, language comprehension and production, perception). The individual exhibits normal reflexes, circadian rhythms (including SLEEP–WAKE CYCLES), respiration, circulation, and other brainstem- and hypothalamus-governed functions but shows no voluntary behavior or other purposeful response to stimuli. Additionally, ELECTROENCEPHALOGRAPHY often reveals slowed electrical activity. Typically associated with destruction of vast areas of cerebral cortex or its integrating connections as a result of trauma, the condition is most often seen following COMA but also occurs in those who have various degenerative disorders or severe congenital malformations of the nervous system. A **persistent vegetative state (PVS)**, or **persistent noncognitive state** is one lasting more than 4 weeks from which there is the possibility—however slim—of recovery, whereas a **permanent vegetative state** is one lasting more than 3 to 12 months (depending upon cause) from which there is no chance of regaining consciousness. The vegetative state is distinct from both BRAIN DEATH and the MINIMALLY CONSCIOUS STATE but nonetheless is misdiagnosed as the latter nearly half the time.

The assessment of residual cognitive abilities is extremely difficult, and uniform assessment protocols for the vegetative state have yet to be established. However, advanced functional neuroimaging techniques (e.g., EVENT-RELATED POTENTIALS, FUNCTIONAL MAGNETIC RESONANCE IMAGING) are being investigated as a source of information beyond the traditional clinical method to aid diagnosis, and several recently developed measures using structured be-

havioral observations, such as the **Sensory Modality Assessment and Rehabilitation Technique (SMART)** and the **Wessex Head Injury Matrix (WHIM)**, are now available. [defined in 1972 by British neurologist William Bryan Jennett (1926–2008) and U.S. neurologist Fred Plum (1924–2010)]

**vegetotherapy** *n.* see ORGONE THERAPY.

**velar** **1.** *adj.* of or relating to the SOFT PALATE. **2.** *adj.* denoting a speech sound articulated by the soft palate, for example, the [hl] in Welsh *Llandoverly* or the [kh] in Scottish *loch* or German *Bach*. **3.** *n.* a speech sound made in this way.

**velocity of conduction** the speed at which nerve impulses travel along the axon of a neuron. Measurements by various techniques show that axons vary considerably in velocity of conduction, from 80 m/s to 120 m/s for large, myelinated A FIBERS to 0.5 m/s to 2 m/s for small, unmyelinated C FIBERS. Conduction velocity was first measured by Hermann von HELMHOLTZ. See also PERIPHERAL NERVE FIBER CLASSIFICATION.

**Velten technique** a MOOD-INDUCTION technique that is widely used to put people in a more positive frame of mind. Individuals are asked to read a series of 58 statements about their mood, energy level, achievements, and potential and to reflect on the truth of each one as it applies to their own experience. The statements, which are printed on separate cards, are carefully graded so that each one is slightly more positive than the previous ones: The series begins with the statement, “Today is neither better nor worse than any other day,” and ends with the statement, “Wow, I feel great!” The aim is to create an IDEAL PERFORMANCE STATE through positive SELF-TALK. [Theodore **Velten**, U.S. psychologist]

**velum** *n.* (*pl.* **vela**) **1.** an anatomical structure resembling a veil, such as the **velum medullare superior**, a thin layer of white matter that forms the roof of the superior part of the fourth VENTRICLE of the brain. **2.** the SOFT PALATE.

**velum palatinum** see SOFT PALATE.

**venereal disease (VD)** see SEXUALLY TRANSMITTED DISEASE.

**venesection** *n.* see PHLEBOTOMY.

**venire** *n.* a panel of prospective jurors drawn from the community. Typically, they are randomly selected from large lists, such as voter registration lists or lists of licensed drivers. Before individuals are included in the venire, they may be screened for factors such as age, citizenship, criminal history, and prior jury service. Also called **jury pool**.

**venlafaxine** *n.* an antidepressant that works by inhibiting the reuptake of both serotonin and norepinephrine; it belongs to a class called the SNRIs (serotonin and norepinephrine reuptake inhibitors). Its mechanism of action therefore differs from that of the SSRIs, which some believe makes it a more effective treatment for depression. It is also appropriate for treatment of generalized anxiety disorder and social anxiety disorder. Like other antidepressants, it should not be administered concurrently with MONOAMINE OXIDASE INHIBITORS. U.S. trade name: **Effexor**.

**Venn diagram** a visual depiction of elements and relations. Circles represent the elements of a set, and the union and intersection between or among the circles represent relationships between the sets (i.e., the degree to which

they are mutually inclusive or exclusive). [John **Venn** (1834–1923), British logician]

**venous thrombosis** see THROMBOSIS.

**ventilation** *n.* in psychotherapy and counseling, a client’s full and free expression of feelings or emotions, especially in session.

**ventr-** *combining form* see VENTRO-.

**ventral** *adj.* denoting the abdomen or the front surface of the body. In reference to the latter, this term sometimes is used interchangeably with ANTERIOR. Compare DORSAL. —**ventrally** *adv.*

**ventral amygdalofugal pathway** the larger of the two efferent pathways from the AMYGDALA in the brain (see also STRIA TERMINALIS). It carries fibers from the basolateral group of nuclei and the central nucleus to the hypothalamus and various regions of the forebrain (including the CINGULATE CORTEX and ORBITOFRONTAL CORTEX) and brainstem (with which it has reciprocal connections).

**ventral anterior cingulate cortex** see ANTERIOR CINGULATE CORTEX.

**ventral anterior nucleus** a nucleus of the anterior THALAMUS that receives inputs from the BASAL GANGLIA and sends connections to the precentral cerebral cortex.

**ventral horn** either of the bottom regions of the H-shaped pattern formed by the PERIAQUEDUCTAL GRAY in the spinal cord. The ventral horns contain large motor neurons whose axons form the ventral roots. Also called **anterior horn**. Compare DORSAL HORN.

**ventral lateral nucleus** see LATEROVENTRAL NUCLEUS.

**ventral posterior cingulate cortex** see POSTERIOR CINGULATE CORTEX.

**ventral root** any of the SPINAL ROOTS that carry motor nerve fibers and arise from the spinal cord on the front surface of each side. Also called **anterior root**; **motor root**. Compare DORSAL ROOT. See also BELL–MAGENDIE LAW.

**ventral stream** a series of cortical maps of the visual field that flow from the occipital cortex to the temporal lobe. These maps represent nameable visual features of objects, such as color, size, texture, object identity, and the like. The ventral stream is known informally as the “what” pathway of perception. Compare DORSAL STREAM.

**ventral tegmental area** an area in the midbrain ventral to the PERIAQUEDUCTAL GRAY and dorsal to the SUBSTANTIA NIGRA. It forms part of the LIMBIC SYSTEM, sending DOPAMINERGIC neurons to the MESOCORTICAL SYSTEM and MESOLIMBIC SYSTEM.

**ventral white commissure** see WHITE COMMISSURE.

**ventricle** *n.* **1.** an anatomical cavity in the body, such as any of the ventricles of the heart. **2.** any of the four interconnected cavities inside the brain, which serve as reservoirs of CEREBROSPINAL FLUID. Each of the two LATERAL VENTRICLES communicates with the THIRD VENTRICLE via the INTERVENTRICULAR FORAMEN; the third and fourth ventricles communicate with each other via the CEREBRAL AQUEDUCT, and with the central canal of the spinal cord and the SUBARACHNOID SPACE. Also called **cerebral ventricle**. —**ventricular** *adj.*

**ventricular puncture** a surgical procedure in which an opening from the outside is made to the lateral ventricle areas of the brain. The procedure may be performed in

order to reduce INTRACRANIAL PRESSURE, to inject medications (e.g., antibiotics) directly into the brain, or to obtain cerebrospinal fluid.

**ventricular system** the network of VENTRICLES and passageways in the brain, spinal cord, and subarachnoid space through which the CEREBROSPINAL FLUID circulates as a source of nutrients for tissues of the central nervous system.

**ventricular zone** a region of actively dividing tissue cells lining the cerebral VENTRICLES that provides neurons in early development and generates glial cells (see GLIA) throughout life. See SUBVENTRICULAR ZONE.

**ventriculoatrial shunt** see SHUNT.

**ventriculomegaly** *n.* abnormal enlargement of a ventricle.

**ventriculostomy** *n.* a treatment for HYDROCEPHALUS in which an opening is created between the floor of the third ventricle of the brain and the underlying cisterna to permit the free flow of cerebrospinal fluid.

**ventriloquism effect** the tendency for sounds to appear to emanate from plausible visual objects, regardless of the actual source of the sound. For example, the voices of actors in a movie are localized to the images on the screen, rather than to the speakers that produce the sound. The ventriloquism effect stems from VISUAL CAPTURE.

**ventro-** (**ventr-**) *combining form* front.

**ventrodorsal** *adj.* oriented or directed from the front (ventral) region of the body to the back (dorsal) region. Compare DORSOVENTRAL. —**ventrodorsally** *adv.*

**ventromedial hypothalamic syndrome** a set of symptoms caused by induced lesions in the VENTROMEDIAL NUCLEUS of the hypothalamus in the brain of an experimental animal (e.g., rat). The syndrome consists of two stages. The first (or **dynamic**) stage is characterized by HYPERPHAGIA (overeating) and subsequent weight gain, resulting in obesity. The second (or **static**) stage includes stabilization of body weight, resistance to food-getting behavior, and finickiness, such that the animal is willing to eat only easily obtainable and palatable foods. Also called **hypothalamic hyperphagia**. Compare LATERAL HYPOTHALAMIC SYNDROME.

**ventromedial hypothalamus (VMH)** a region of the hypothalamus primarily associated with feelings of satiety. In studies in which the VMH is lesioned, animals overeat to the point of extreme obesity. The VMH also has a role in thermoregulation.

**ventromedial nucleus** a group of nuclei within the ventromedial hypothalamus that receives input from the AMYGDALA and is associated particularly with eating and sexual behavior. The ventromedial nucleus traditionally has been referred to as the **satiety center** because of its presumed dominance over the cessation of eating (indeed, structural or functional damage results in excessive eating), but it is now known that other neural areas are involved in this function as well. See also VENTROMEDIAL HYPOTHALAMIC SYNDROME.

**ventromedial pathway** any of four major descending groups of nerve fibers within the MOTOR SYSTEM, conveying information from diffuse areas of the cerebral cortex, mid-brain, and cerebellum. These pathways include the anterior CORTICOSPINAL TRACT, which descends directly from motor cortex to the anterior horn of the spinal cord; the

VESTIBULOSPINAL TRACT, which carries information from the VESTIBULAR NUCLEI for control of equilibratory responses; the TECTOSPINAL TRACT, for control of head and eye movements; and the **reticulospinal tract**, for maintaining posture.

**ventroposterior nucleus** a nucleus of the THALAMUS in the brain that relays messages from the spinal cord to the PRIMARY SOMATOSENSORY AREA in the anterior parietal cortex. It includes the medial and lateral ventroposterior subnuclei, representing the face and body respectively, and receives input from CUTANEOUS RECEPTORS. The ventroposterior nucleus is part of the **ventroposterior nuclear complex**; this also includes the ventroposterior superior nucleus, which receives input from muscle spindles, and the ventroposterior inferior nucleus, which receives spinothalamic terminations related to touch, pain, and temperature. Also called **posterior ventral lateral nucleus**; **postventral nucleus**; **ventral posterior lateral nucleus**.

**venue sampling** see TIME-LOCATION SAMPLING.

**VEP** abbreviation for VISUAL EVOKED POTENTIAL.

**verapamil** *n.* see CALCIUM-CHANNEL BLOCKER.

**veratrine** *n.* see HELLEBORE.

**verb** *n.* a word or phrase used to describe an action, occurrence, or state, forming the essential part of the PREDICATE of a sentence. The verb is also identifiable as the element of the sentence that marks temporality (TENSE), MOOD, voice (see ACTIVE VOICE; PASSIVE VOICE), and number AGREEMENT with the SUBJECT. See also ACTIONAL VERB; AUXILIARY VERB; CAUSATIVE VERB.

**verbal ability (V)** demonstrated skill to comprehend and communicate effectively with words. Sometimes a distinction is made between receptive abilities (comprehension) and productive abilities (fluency). Brain areas necessary for normal speech appear to be distributed over a broad region of the cerebral cortex and can be mapped by electrical stimulation. For right-handed individuals, language is primarily localized in the left hemisphere. See also PRIMARY ABILITY.

**verbal abuse** extremely critical, threatening, or insulting words delivered in oral or written form and intended to demean, belittle, or frighten the recipient.

**verbal alexia** a form of AGNOSIA in which an individual may recognize single letters but not whole words or combinations of letters. See ALEXIA.

**verbal amnesia** a loss of the ability to remember words due to neurological disorder or disease. See NEUROLOGICAL AMNESIA.

**verbal aphasia** another name for expressive APHASIA.

**verbal apraxia** see APRAXIA.

**verbal behavior** all behavior that involves words, including speaking, listening, writing, and reading. The term is used by those who favor a behavioristic account of language (see BEHAVIORISM) in which human verbal behavior is thought to be explained by general laws of learning and behavior observable in other species; that is, its reinforcement is socially mediated by the responses of others. This contrasts with the cognitive approach dominant in PSYCHOLINGUISTICS and specifically with the theory of the cognitive TASK SPECIFICITY OF LANGUAGE. [first described by B. F. SKINNER in 1957]

**verbal behavior therapy** based on the principles of APPLIED BEHAVIOR ANALYSIS and B. F. SKINNER's concept of verbal behavior, a therapy that is primarily used to teach speech to nonverbal children with autism. The therapy uses various reinforcers (food, toys) first to prompt the child to vocalize sounds and then to imitate whole words and phrases. The therapy also aims to improve the child's attentional ability and social and cognitive skills. Also called **applied verbal behavior**.

**verbal communication** see COMMUNICATION.

**verbal comprehension** an individual's ability to understand the language used by others, as determined by his or her RECEPTIVE VOCABULARY and RECEPTIVE LANGUAGE skills.

**Verbal Comprehension Index** on the WECHSLER ADULT INTELLIGENCE SCALE and other Wechsler tests, a subset of verbal tests thought to measure verbal knowledge and comprehension more purely than the other tests included in the VERBAL IQ.

**verbal conditioning** the conditioning of a verbal response (such as the use of a specific word) through reinforcement, usually given in the form of attention or praise. For instance, the experimenter might respond "Okay" whenever the participant uses the pronoun *I* but does not respond to the use of other pronouns. [introduced in 1955 by U.S. behaviorist Joel Greenspoon (1920–2004)]

**verbal deprivation hypothesis** the hypothesis that children who are denied regular experience of an ELABORATED CODE of language—that is, a more formal use of language involving complex constructions and an unpredictable vocabulary—may develop an educational and even cognitive deficit. The concept is controversial as it has been associated with the view that nonstandard or vernacular forms of a language (e.g., BLACK ENGLISH) are inherently inferior. The idea that nonstandard forms inhibit higher level cognitive processes (e.g., abstract reasoning) is now discredited, but concerns remain that lack of early exposure to the more formal codes of a language appears to correlate with educational underachievement. [proposed in 1973 by British sociologist Basil Bernstein (1924–2000)]

**verbal factor** a factor obtained by FACTOR ANALYSIS that represents the latent trait underlying verbal abilities.

**verbal fluency test** any of a group of tests in which participants are required, within a limited period, to generate words that fit a specific category or have specific characteristics (e.g., they may all start with the same letter or be from the same semantic category). Compare DESIGN FLUENCY TEST.

**verbal intelligence** the ability to use words and combinations of words effectively in communication and problem solving.

**verbal IQ** a broad measure of verbal ability as obtained on standardized intelligence tests and affected by native verbal skills, experience, education, test taking skills, and test motivation. See IQ.

**verbalization** *n.* 1. the expression of thoughts, feelings, and fantasies in words. Verbalization is a common feature of most forms of psychotherapy. Apart from the general communication that occurs between therapist and client as part of the PSYCHOTHERAPEUTIC PROCESS, a particularly striking form of verbalization occurs in the use of FREE AS-

SOCIATION. 2. in psychiatry, a symptom involving excessive or uncontrolled speech, as in CIRCUMSTANTIALITY or PRESURED SPEECH. —**verbalize** *vb.*

**verbal leakage** SLIPS OF THE TONGUE, verbal ambiguities, or other aspects of speech thought to reveal information about an individual's motives and behavior that he or she has attempted to conceal. Body language that is similarly revealing is described by some psychologists as **nonverbal leakage**. See also FREUDIAN SLIP; PARAPRAXIS; SYMPTOMATIC ACT.

**verbal learning** the process of learning about verbal stimuli and responses, such as letters, digits, nonsense syllables, or words. The methods used include PAIRED-ASSOCIATES LEARNING and SERIAL LEARNING. Researchers in the **verbal learning tradition**, influenced by Hermann EBBINGHAUS and by ASSOCIATIONISM, sought to uncover basic laws of learning by studying simple materials under controlled conditions. Compare NONVERBAL LEARNING.

**verbally governed behavior** see RULE-GOVERNED BEHAVIOR.

**verbal masochism** a sexual disorder in which an individual enjoys hearing words that are humiliating and insulting and derives sexual excitement from the abuse. According to Theodor REIK, the sexual excitement may depend on the choice and emphasis of words or sentences used.

**verbal memory** the capacity to remember something written or spoken that was previously learned (e.g., a poem). Compare MOTOR MEMORY; VISUAL MEMORY.

**verbal narrative** an oral recounting of an event, as when a person describes a recent date to a friend over the telephone. Such spoken-word narratives help provide an individual with a sense of self and of history and often include descriptions of mood, conflicts, stressors, and concerns. They contrast with **visual narratives**, which describe events through images, and **textual narratives**, which describe events in writing. Research has revealed that the ability to narrate life experiences is significant in understanding and treating certain disorders, particularly POST-TRAUMATIC STRESS DISORDER. The use of such narratives as a specific therapeutic technique is known as NARRATIVE THERAPY.

**verbal overshadowing** the tendency for the verbal description of a stimulus to impair later accurate memory of the stimulus. For instance, verbally describing a face that has just been seen may reduce later recognition or identification of that face in a picture lineup.

**verbal paraphasia** a form of PARAPHASIA characterized by the inclusion of inappropriate words and phrases in a person's speech.

**verbal protocol** a method of eliciting verbal reports of individuals' thoughts as they perform a set of specified research tasks. Participants are asked to describe whatever they are seeing, thinking, doing, and feeling as it occurs during task performance. Rather than capturing mere summaries of a task's results, the method provides the researcher with insight about the cognitive processes involved in task completion and the representations on which they operate.

**verbal protocol analysis** see PROTOCOL ANALYSIS.

**verbal report** see REPORTABILITY.

**verbal satiation** see MASTURBATORY SATIATION.

**verbal test** any test or scale in which performance depends upon one's ability to comprehend, use, or otherwise manipulate words.

**verbal thought** a reasoning process that requires language and thus represents the merging of language and thought. Children first use language to guide thought by speaking out loud; only later does speech go underground to become covert verbal thought. See EGOCENTRIC SPEECH; INNER LANGUAGE. [proposed by Lev VYGOTSKY]

**verbatim recall** recollection of the exact wording of verbal material (e.g., a conversation, poem, or quotation). See also ROTE RECALL.

**verbatim trace** see FUZZY TRACE THEORY.

**verbigeration** *n.* apparently meaningless repetition of specific words or phrases. Also called **catalogia**; **cataphasia**.

**vergence** *n.* a turning movement of the eyes to focus on an item in the depth plane. If they turn toward each other, the movement is CONVERGENCE; if they turn away from each other, it is DIVERGENCE.

**veridical** *adj.* **1.** truthful. **2.** of mental phenomena, such as memories or beliefs, corresponding to external reality.

**veridical hallucination** in PARAPSYCHOLOGY, a hallucination depicting events later proven to be true.

**veridical perception** accurate perception of what is real.

**verification** *n.* the process of establishing the truth or accuracy of something, especially the use of objective, empirical data to test or support the truth of a statement, conclusion, or hypothesis.

**verification time** in studies of cognition, a measure of the time taken by a participant to indicate whether a statement is true or to verify that a particular stimulus meets some prespecified condition.

**verisimilitude** *n.* the appearance of being true. In scientific investigation, a theory or model is said to have verisimilitude if it can be shown to be more consistent with empirically verified fact than its predecessors or competitors.

**vermis** *n.* (*pl.* **vermes**) the median lobe of the CEREBELLUM, which lies between the two cerebellar hemispheres. Also called **vermis cerebelli**. —**vermicular** *adj.*

**vernacular** *n.* the indigenous or characteristic language or DIALECT spoken routinely by a particular group of people: everyday language. It usually coexists with an official formal language (see STANDARD LANGUAGE) used in schools and government. See DIGLOSSIA.

**Versed** *n.* a trade name for MIDAZOLAM.

**verstehende Psychologie** understanding psychology (German): an approach to psychology advocated by German philosopher Wilhelm Dilthey (1833–1911). Dilthey argued that psychology belonged to the human sciences (*Geisteswissenschaften*) as opposed to the natural sciences (*Naturwissenschaften*) and that its goal was therefore understanding (*Verstehen*) rather than explanation in terms of natural laws. For psychology, the object of understanding is lived experience (*Erlebnis*), and the goal must be articulation of the meaning of the experience from the perspective of the person living it. This approach was influential in the development of PHENOMENOLOGY, modern HERMENEUTICS,

and EXISTENTIAL PSYCHOLOGY. See GEISTESWISSENSCHAFTLICHE PSYCHOLOGIE; NATURWISSENSCHAFTLICHE PSYCHOLOGIE.

**vertebral artery** a paired artery that runs upward alongside the vertebrae of the neck. Each vertebral artery enters the skull through the foramen magnum (see FORAMEN) near the top of the spinal column, where it joins the vertebral artery from the other side to form the BASILAR ARTERY.

**vertebral column** see SPINAL COLUMN.

**vertex potential** a brain potential recorded by electrodes placed at the vertex (top) of the skull. The vertex potential seems to be evoked by a variety of stimuli but is closely associated with attention.

**vertical décalage** in PIAGETIAN THEORY, the invariable sequence in which the different stages of development (sensorimotor, preoperational, concrete operational, formal operational) are attained. Compare HORIZONTAL DÉCALAGE.

**vertical group** a group composed of individuals who come from different social classes. Compare HORIZONTAL GROUP.

**vertical–horizontal illusion** see HORIZONTAL–VERTICAL ILLUSION.

**vertical job enlargement** see JOB ENLARGEMENT.

**vertical loading** see JOB ENLARGEMENT.

**vertical mobility** the movement or displacement of individuals or groups from one social class to another. This may take the form of UPWARD MOBILITY or DOWNWARD MOBILITY. Compare HORIZONTAL MOBILITY. See SOCIAL MOBILITY.

**vertical transmission** see HORIZONTAL TRANSMISSION.

**vertigo** *n.* an unpleasant, illusory sensation of movement or spinning of oneself or one's surroundings because of neurological disorders, psychological stress (e.g., anxiety), or activities that disturb the labyrinth (which contains the organs of balance) in the inner ear (as in a roller-coaster ride).

**very low birth weight (VLBW)** see LOW BIRTH WEIGHT.

**vesicle** *n.* a fluid-filled saclike structure, such as any of the SYNAPTIC VESICLES in axon terminals that contain neurotransmitter molecules. —**vesicular** *adj.*

**vested interest** the extent to which an ATTITUDE OBJECT is seen as being related to a person's material self-interest. It is assumed to be a determinant of related constructs, such as the IMPORTANCE OF AN ATTITUDE and EGO INVOLVEMENT. It is also a determinant of ATTITUDE STRENGTH.

**vestibular adaptation** an effect of repeated stimulation that can result in suppression of the vestibular (balance) function and may be observed in individuals whose daily activities require frequent or repeated turning of the head (e.g., ballet dancers and figure skaters).

**vestibular apparatus** the organ of balance and equilibrium, which is situated in the inner ear and contains receptors that detect the orientation and changes in the position of the head in space. It consists of the SEMICIRCULAR CANALS and VESTIBULAR SACS. See also VESTIBULAR SYSTEM.

**vestibular glands** two pairs of glands situated on either side of the vaginal orifice. Their secretions lubricate the

vulva and vagina and assist penetration by the penis during coitus. The larger pair (the **greater vestibular glands**) are also called **Bartholin's glands**.

**vestibular illusion** a spatial disorientation due to inaccurate vestibular (balance) information, for example, following adaptation of a VESTIBULAR RECEPTOR.

**vestibular membrane** see REISSNER'S MEMBRANE.

**vestibular nerve** a division of the VESTIBULOCOCHLEAR NERVE that carries nerve fibers from the VESTIBULAR SYSTEM in the inner ear; it is associated with the sense of balance and orientation in space. Fibers of the vestibular nerve terminate in the VESTIBULAR NUCLEI of the brainstem.

**vestibular nuclei** nuclei in the dorsolateral part of the PONS and the MEDULLA OBLONGATA in the brain that receive fibers from the VESTIBULAR NERVE and serve the sense of balance and orientation in space. They send fibers to the cerebellum, reticular formation, thalamus, and the vestibulospinal tract (see VENTROMEDIAL PATHWAY).

**vestibular nystagmus** involuntary eye movements consisting of slow drift in one direction followed by a rapid movement in the opposite direction, caused by stimulation of the vestibular apparatus during rotation of the head. Also called **rotational nystagmus**. Compare PHYSIOLOGICAL NYSTAGMUS.

**vestibular receptors** nerve cells associated with the sense of balance, located in the cristae of the SEMICIRCULAR CANALS and in the MACULAE of the UTRICLE and SACCULE. They occur in two similar forms: a HAIR CELL enclosed in a chalicelike nerve ending and a cylindrical hair cell that synapses at its base with a nerve ending.

**vestibular sacs** two sacs in the inner ear—the UTRICLE and SACCULE—that, together with the SEMICIRCULAR CANALS, comprise the VESTIBULAR APPARATUS (see also VESTIBULAR SYSTEM). The vestibular sacs respond both to gravity to encode information about the head's orientation and to linear acceleration.

**vestibular sense** see SENSE OF EQUILIBRIUM.

**vestibular system** a system in the body that is responsible for maintaining balance, posture, and the body's orientation in space and that plays an important role in regulating locomotion and other movements. It consists of the VESTIBULAR APPARATUS in the inner ear, the VESTIBULAR NERVE, and the various cortical regions associated with the processing of vestibular (balance) information.

**vestibule** *n.* a chamber that leads to a body cavity or that connects one cavity to another. The **vestibule of the vagina** is the cavity in the VULVA, between the two LABIA MINORA, into which the vagina, urethra, and greater vestibular glands open. The **vestibule of the inner ear** is the cavity of the bony LABYRINTH that contains the utricle and saccule (the VESTIBULAR SACS) and is connected to the semicircular canals and cochlea. —**vestibular** *adj.*

**vestibule training** an approach to personnel training in which new employees, before starting their work duties, spend some time learning in a special section (vestibule), apart from the actual work environment, that duplicates as precisely as possible the setting and conditions in which the employees will actually be working once their training is complete. See OFF-THE-JOB TRAINING; ON-THE-JOB TRAINING.

**vestibulocochlear nerve** the eighth cranial nerve: a sensory nerve containing tracts that innervate both the

sense of hearing and the sense of balance. It has two divisions, the VESTIBULAR NERVE, originating in the vestibule and the semicircular canals, and the AUDITORY NERVE (acoustic or cochlear nerve), originating in the cochlea. The vestibulocochlear nerve transmits impulses from the inner ear to the medulla oblongata and pons and has fibers that continue into the cerebrum and cerebellum. Also called **cranial nerve VIII**.

**vestibulo-ocular reflex (VOR)** the involuntary compensatory movement of the eyes that occurs to maintain fixation on a visual target during small, brief head movements. It is triggered by vestibular signals and thus does not depend on visual inputs. Compare OPTOKINETIC REFLEX.

**vestibulospinal tract** a TRACT that sends impulses from the VESTIBULAR NUCLEUS to the spinal cord. It is divided into lateral and medial branches and serves to control balance and orientation in space.

**vestigial body image** the subjective or internal image of one's appearance that is not necessarily modified by changes to one's external features. For example, individuals who have lost large amounts of weight may continue to have a vestigial body image of themselves as being overweight.

**vestured genital apposition** sexual activity in which clothed participants place their genital regions together and thrust or rub against each other, simulating coitus. The activity may or may not be carried to the point of orgasm for one or both partners.

**VFDT** abbreviation for Visual Form Discrimination Test. See VISUAL FORM DISCRIMINATION.

**VI** abbreviation for variable interval. See VARIABLE-INTERVAL SCHEDULE.

**vibration** *n.* a periodic motion of an object, such as a tuning fork, with a frequency that is usually measured in HERTZ.

**vibration disease** an occupational health hazard resulting from acoustic or mechanical vibration and shock to the body. The extent of the damage depends on the frequencies of vibrations and the duration of exposure. See also HAND-ARM VIBRATION SYNDROME.

**vibration environment** an environment in which the oscillations of an operational vehicle in motion are transmitted to humans by supporting seats, floors, walls, and handles. Such vibration can have mechanical effects on the human body that are similar to those caused by acceleration. The magnitude of the vibration effects depends on the frequency range of the vibration force and its relationship to the body's dynamic response.

**vibration experience** a sensation produced by contact with a pulsating or rapidly vibrating object that stimulates receptors in the skin. The vibration sense can be measured with a mechanical vibrator that can be adjusted for threshold frequencies of the effect.

**vibration receptor** a nerve ending that responds to various ranges of vibration frequencies. Vibration receptors have been identified through histological studies as PACINIAN CORPUSCLES, located at depths ranging from the skin surface to the connective tissue covering the surface of a bone. Some vibration receptors seem most sensitive to vibrations between 100 Hz and 500 Hz, whereas others are most sensitive to those below 100 Hz.

**vibration sense** see VIBRATION EXPERIENCE.

**vibration white finger** see HAND—ARM VIBRATION SYNDROME.

**vibrator** *n.* an appliance containing a small electric motor that produces a vibrating action, used to stimulate the genitals and other sensitive areas during masturbation or sexual activity with a partner. The device may be powered by batteries or by household electric current. Some vibrators strap on the hand, making the fingers vibrate during sexual stimulation. Another type has a vibrating mechanism on which a number of attachments of different sizes, shapes, and textures can be placed, and these stimulate the body directly. Other vibrators are cylinders that can be used externally or inserted into the vagina or anus.

**vibrotactile aid** see TACTILE SENSORY AID.

**vibrotactile masking** the interference of one vibrotactile stimulus pattern with another that may occur if the two patterns are presented in close temporal proximity. MASKING may be forward or backward.

**vibrotactile threshold** the minimum level of stimulation at which a vibration is perceived. Different types of MECHANORECEPTORS are sensitive to different specific frequencies of vibration.

**vicarious** *adj.* **1.** substitutive or secondhand: applied, for example, to the satisfaction obtained by viewing the experiences of others in television programs. It is widely believed that human conditioning of fear responses can occur through vicarious means and that gratification of needs can be partially accomplished through watching the actions of others. See also OBSERVATIONAL LEARNING. **2.** occurring when one organ performs part of the functions normally performed by another.

**vicarious brain process** see VICARIOUS FUNCTION.

**vicarious conditioning** see OBSERVATIONAL LEARNING.

**vicarious extinction** a phenomenon in which behavioral inhibitions are eliminated by observational experiences alone, with accompanying generalized and enduring reductions in fear arousal and avoidance behavior. Vicarious extinction requires exposing observers to stimulus events in which a model repeatedly exhibits approach responses toward a feared object without incurring any aversive consequences. For example, vicarious extinction for a person who is afraid of dogs might involve watching as another individual engages with a series of different dogs in a pen and interacts with each one in a way that becomes progressively more involved (e.g., petting, then feeding, then leash walking, then picking up each animal) without being bitten or experiencing other negative consequences.

**vicarious function** a theory to explain the ability to recover from the effects of brain damage. It is based on evidence that many functions are not strictly localized in the brain and that many brain areas can assume a function previously performed by a brain area that has been damaged. Also called **vicarious brain process**.

**vicarious learning** see OBSERVATIONAL LEARNING.

**vicarious reinforcement** the process whereby a person becomes more likely to engage in a particular behavior (response) by observing another individual being reinforced for that behavior. An important concept in SOCIAL LEARNING THEORY, vicarious reinforcement often leads to imitation: for example, a student who hears the teacher praise a classmate for neat penmanship on an assignment

and who then carefully handwrites his or her own assignment is considered to have received vicarious reinforcement. See also OBSERVATIONAL LEARNING.

**vicarious traumatization (VT)** the impact on a therapist of repeated emotionally intimate contact with trauma survivors. More than COUNTERTRANSFERENCE, VT affects the therapist across clients and situations. It results in a change in the therapist's own worldview and sense of the justness and safety of the world. Therapist isolation and overinvolvement in trauma work can increase the risk of vicarious traumatization. Also called **secondary traumatization**.

**vicious circle** a situation or behavioral pattern in which an individual's or group's problems become increasingly difficult because of a tendency to address or ignore them repetitively through unhealthy defensive reactions that, in fact, compound them.

**vicious circularity** the logical problem that is presented by certain kinds of self-referring PARADOX, such as *This sentence is a lie*, and by certain related cruxes in SET THEORY, notably those arising from the idea that a set can be the member of itself. See also CIRCULAR REASONING.

**Vicodin** *n.* a trade name for a combination of HYDROCODONE and ACETAMINOPHEN.

**victim** *n.* **1.** an individual who is the target of another person's violent, discriminatory, harassing, or assaultive behaviors. **2.** an individual who has experienced an accident or natural disaster. See VICTIMIZATION.

**victim blaming** see BLAMING THE VICTIM.

**victim impact statement** a spoken or written statement made during the sentencing phase of a trial by the victim of a crime or, in cases when the crime resulted in death, by the family of the victim, describing the harm and suffering experienced as a result of the defendant's acts.

**victimization** *n.* the act or process of singling someone out for cruel or unfair treatment, typically through physical or emotional abuse.

**victimology** *n.* see CRIMINAL PROFILING.

**video conferencing** see TELECONFERENCING.

**video-recall technique** a research procedure in which participants review a video recording of their behavior in a previous situation and report what they were thinking, feeling, or otherwise experiencing at that time. The video-recall technique is intended to reduce distortion in SELF-REPORTS, the premise being that reimmersion in the situation generates a more representative set of recollections with less defensive justification than memory alone.

**videotape method** in clinical psychology and psychiatry, the use of video recordings of therapy sessions for therapeutic, research, or teaching purposes. Recorded sessions are typically reviewed as a part of clinical supervision and are useful in providing trainees with feedback. Occasionally, patients are invited to view the recordings with the therapist and to recall their thoughts and emotions.

**Vienna Circle** a group of philosophers, logicians, and mathematicians who were based in Vienna in the 1920s and 1930s. The unifying theme of their work was an attempt to systematize the empirical and positivist tradition using the methods of modern SYMBOLIC LOGIC—an approach that became known as LOGICAL POSITIVISM. Prominent members of the group included German philosopher

Rudolf Carnap (1891–1970) and Czech-born mathematical logician Kurt Gödel (1906–1978).

**Vienna Psychoanalytic Society** see WEDNESDAY EVENING SOCIETY.

**Viennese School** a group of early 20th-century practitioners of psychoanalysis, based in Vienna, who followed the theories of Sigmund FREUD. Also called **Vienna School**; **Wiener Schule**. See also WEDNESDAY EVENING SOCIETY.

**Vierordt's law** the principle that the TWO-POINT THRESHOLD for a stimulus is lower in mobile body parts than in those that are less mobile. [Karl von **Vierordt** (1817–1884), German physiologist]

**Vieth–Müller circle** a theoretical circle in space in front of an observer containing points that will fall on corresponding retinal locations in the two eyes when a point on the circle is fixated. A Vieth–Müller circle is an example of a HOROPTER. [G. U. **Vieth**; J. P. **Müller**]

**view invariance** in RECOGNITION BY COMPONENTS THEORY, an unchanging property of three-dimensional elements called GEONS that enables them to be identified when looked at from different angles. Such properties include the curvature of a sphere and the parallel lines of a cube. More broadly, the term **view invariant** may be used in the context of object recognition, meaning that an object can be identified from any angle. For example, a horse can be identified if it is viewed from above or from the side.

**vigilance** *n.* a state of extreme awareness and watchfulness directed by one or more members of a group toward the environment, often toward potential threats (e.g., predators, intruders, enemy forces in combat). In animal behavior, vigilance increases in females after the birth of their young and in response to ALARM CALLS. In large groups, there can be a division of labor, with individuals taking turns in vigilance. In a military context, vigilance tasks (e.g., sentry duty, ship and air traffic control, anti-aircraft and missile defense tracking) demand maximum physiological and psychological attention and readiness to react, characterized by an ability to attend and respond to stimulus changes for uninterrupted periods of time. This level of vigilance can produce significant cognitive stress and occasional physiological stress reactions. Also called **vigilant attention**. Compare AMBIENT AWARENESS; SITUATION AWARENESS. —**vigilant** *adj.*

**vigilance decrement** in a vigilance task, a decrease in the number of targets detected that occurs after a short period on the task. In many situations, the decrement is due to a shift in the response criterion, although in some cases it reflects a decrease in sensitivity for detecting the target.

**vigor** *n.* physical and mental robustness and energy. —**vigorous** *adj.*

**vindictory damages** a sum of money a defendant is ordered to pay the plaintiff in a civil lawsuit for infringement of the latter's constitutional rights. For example, a plaintiff who receives \$100,000 for false imprisonment by the defendant has been awarded vindictory damages.

**Vineland Adaptive Behavior Scales (VABS)** an assessment of four domains of personal and social functioning—communication, daily living skills, socialization, and motor skills—in individuals with dementia, brain injury, intellectual disability, or autism and other developmental problems. A modification and replacement of the **Vineland Social Maturity Scale** developed in 1936 by Edgar A. DOLL,

the VABS currently contains items for individuals ranging in age from infancy to 90 years. Data are gathered through a rating form or semistructured interview with each individual's parents or caregivers. The scales are used not only to diagnose and evaluate the individual but also to formulate educational and treatment (habilitative or rehabilitative) programs. The VABS was originally published in 1984; the most recent version is the **VABS-II**, published in 2005. [originally developed by psychologists Sara S. Sparrow (1933–2010), David A. Balla, and Domenic V. Cicchetti (1937– )]

**violation of assumptions** a situation in which the theoretical ASSUMPTIONS associated with a particular statistical or experimental procedure are not fulfilled. Common assumptions for statistical tests include NORMALITY of the distribution, equal VARIANCES within the cells of treatment levels, HOMOGENEITY OF VARIANCE, and LINEARITY. Research designs also need to meet certain assumptions, such as RANDOM SAMPLING and RANDOM ASSIGNMENT, sample REPRESENTATIVENESS, and the like. Because violation of assumptions introduces BIAS, the validity of assumptions must be confirmed prior to data analysis to ensure that the methods and strategies chosen are appropriate and will yield valid results.

**violation-of-expectation method** a technique for studying infant cognition, based on habituation and dishabituation procedures, in which increases in an infant's looking time at an event or other stimulus are interpreted as evidence that the outcome he or she expected has not occurred. For example, while a baby watches, a researcher may repeatedly return a toy to a blue box. If the researcher sometime later retrieves the same toy from a nearby red box (after a CONFEDERATE surreptitiously moved it) and the baby looks longer at that red box, it is assumed that he or she has some understanding of object permanence and was not expecting the toy to be there.

**violence** *n.* **1.** the expression of hostility and rage with the intent to injure or damage people or property through physical force. See also PATHOLOGICAL AGGRESSION. **2.** passion or intensity of emotions or declarations. —**violent** *adj.*

**viral hypothesis** the theory, first suggested in the early 20th century, that psychoses resembling schizophrenia are associated with influenza epidemics. It was later observed that several types of viral ENCEPHALITIS may involve schizophrenia-like symptoms, and many studies have investigated the effect of exposure to viral agents, especially in utero, on subsequent development of schizophrenia. In particular, U.S. psychiatrist E. Fuller Torrey (1937– ) has noted that the viral hypothesis accounts for the greater number of people with schizophrenia born from January to April (see SEASONALITY EFFECT), a period during which there is a high incidence of viral infections. More recently, however, it has been suggested that virus exposure is a risk factor for—rather than a key causative event in—the development of schizophrenia.

**viral marketing** a form of Internet marketing in which businesses encourage consumers to publicize their products or services by forwarding advertising material in e-mails or posting links on blogs or social media.

**viral meningitis** see MENINGITIS.

**Virchow–Seckel syndrome** see SECKEL SYNDROME.

**virgin** **1.** *n.* a person who has never had sexual intercourse. **2.** *n.* a person who has never had sexual contact of



any sort, including FELLATIO and CUNNILINGUS. **3.** *adj.* referring to a pure or natural state, as in a virgin forest. —**virginal** *adj.*

**virginity** *n.* the state of a person who has not participated in sexual intercourse. Traditionally, a woman was assumed to be a virgin if her HYMEN was not ruptured, but a ruptured hymen is no longer regarded as *prima facie* evidence of loss of virginity, as other events can cause this.

**virilism** *n.* the presence in a female of secondary sexual characteristics that are peculiar to men, such as muscle bulk and hirsutism. The condition is due to overactivity of the adrenal cortex with excessive secretion of androgen, which can be corrected in some cases. Also called **masculinization**.

**virility** *n.* the state of possessing the qualities of an adult male, especially capacity for coitus. See also MALENESS; MASCULINITY. —**virile** *adj.*

**virilocal** *adj.* see PATRILOCAL.

**virtual pitch** the low pitch of a complex sound. For a complex periodic sound, the virtual pitch generally corresponds to that of the fundamental FREQUENCY even when the fundamental is not present in the sound (the phenomenon of the **missing fundamental**). The terms **periodicity pitch** and **residue pitch** are now used synonymously with virtual pitch, although they have different historical antecedents.

**virtual reality** a simulated three-dimensional environment created through the memory, graphics, and processes of a computer. It is often used to create simulated environments for activities such as flying a plane or exploring space, which are expensive or dangerous to experience directly. Supporting hardware and software tools, including gloves and head monitors with real-time feedback, are often used to immerse and train humans in this virtual reality.

**virtual reality therapy** a form of IN VIVO EXPOSURE therapy in which clients are active participants in a three-dimensional computer-generated interactive environment that allows them a sense of actual involvement in scenarios related to their presenting problems. This treatment is currently used primarily for anxiety-related disorders, such as fear of flying.

**virtual team** two or more people in separate locations who work as a group toward a common goal or related goals and who interact electronically via e-mail, teleconferencing, and other means.

**virtue** *n.* **1.** a quality or characteristic that has positive connotations in a particular society and that is considered beneficial to psychological health. **2.** moral goodness. —**virtuous** *adj.* —**virtuousness** *n.*

**virus** *n.* **1.** a microscopic parasitic agent that consists of an RNA or DNA core surrounded by a protective protein coat. Because viruses cannot replicate on their own but must invade a living host cell in an organism to do so, they are generally considered nonliving. Viral infection is responsible for many human illnesses and diseases, including influenza, poliomyelitis, mumps, several forms of cancer, and AIDS (see HIV). **2.** a computer program designed to disrupt the functioning of other programs or to scramble or destroy computer files. It gains access to programs or systems surreptitiously, often by means of an attachment to an innocent-looking e-mail message. Viruses are typically

designed to spread from computer to computer; for that reason, they can be extremely destructive.

**viscera** *pl. n.* (*sing.* **viscus**) the organs in any major body cavity, especially the abdominal organs (stomach, intestines, kidneys, etc.). —**visceral** *adj.*

**visceral brain** in MACLEAN'S THEORY OF EMOTION, the area of the brain that is involved in the neurophysiological control of emotional behavior and experience (including motivated behavior). It is now more commonly known as the LIMBIC SYSTEM.

**visceral drive** a drive that is derived from a physiological need. Also called **viscerogenic drive**. See PHYSIOLOGICAL MOTIVE.

**visceral learning** the use of INSTRUMENTAL CONDITIONING procedures, particularly BIOFEEDBACK techniques, to enable an individual to deliberately modify physiological processes that are ordinarily and nonconsciously regulated by the autonomic nervous system, such as heart rate and blood pressure.

**visceral reaction** a response of the visceral (internal or abdominal) organs, such as contractions of the stomach.

**visceral sensation** see ORGANIC SENSATION.

**visceral sense** the sense associated with functions of the viscera.

**viscerotonia** *n.* the personality type that, according to SHELDON'S CONSTITUTIONAL THEORY OF PERSONALITY, is associated with an endomorphic physique (see ENDOMORPH) and is characterized by a tendency toward love of comfort, food, relaxation, and sociability. —**viscerotonic** *adj.*

**viscus** *n.* see VISCERA.

**visible spectrum** see SPECTRUM.

**vision** *n.* **1.** the sense of sight, in which the eye is the receptor and the stimulus is radiant energy in the visible SPECTRUM. See also VISUAL SYSTEM. **2.** a visual hallucination often involving a religious or mystical experience. **3.** a mental image of something or someone produced by the imagination. —**visual** *adj.*

**vision impairment** see VISUAL IMPAIRMENT.

**vision rehabilitation** the REHABILITATION of individuals with visual impairment ranging from blindness to low vision. Services provided include functional assessments of a person's visual abilities, if any; ORIENTATION AND MOBILITY TRAINING; rehabilitation teaching (e.g., adaptive skills training in managing one's ACTIVITIES OF DAILY LIVING); instruction in the use of optical devices and ASSISTIVE TECHNOLOGY; career services and training; and psychological counseling.

**visitation rights** see CHILD VISITATION.

**visiting nurse** a REGISTERED NURSE who provides nursing services to patients in their homes. Visiting nurses are usually employed by a local visiting nurse association.

**Vistaril** *n.* a trade name for HYDROXYZINE.

**visual acuity** the degree of clarity, or sharpness, of visual perception. It may be measured in several ways; for example, by testing one's ability to detect very small gaps between two parts of a figure (the MINIMUM SEPARABLE method), or to discern a fine dark line on a light background or a fine light line on a dark background. See also ACUITY GRATING; LANDOLT CIRCLES; SNELLEN CHART.

**visual adaptation** the changes that occur in the visual system itself or in visual perception as a result of continuous stimulation. For example, the range of light intensities over which photoreceptors are responsive changes with prolonged exposure to dark, and many visual AFTEREFFECTS are caused by adaptation of neurons within the visual system. See also DARK ADAPTATION; LIGHT ADAPTATION.

**visual agnosia** loss or impairment of the ability to recognize and understand the nature of visual stimuli. Classically, a distinction between **apperceptive** and **associative** forms of visual agnosia has been made. Individuals with the former are said to have deficits in the early stages of perceptual processing, whereas those with the latter either do not display such problems or do so to a degree not sufficient to substantially impair the ability to perform perceptual operations. Subtypes of each form exist based on the type of visual stimulus the person has difficulty recognizing, such as objects (**visual object agnosia** or **visual form agnosia**), multiple objects or pictures (**simultanagnosia**), or colors (**color agnosia**). See also INTEGRATIVE AGNOSIA; PROSOPAGNOSIA.

**visual agraphia** an impaired ability to write resulting from a failure to recognize letters, numbers, or words. The condition is caused by lesions in the occipitoparietal area of the brain. See AGRAPHIA.

**visual allesthesia (visual allaesthesia)** see ALLESTHESIA.

**visual amnesia** loss of the ability to recognize familiar objects, printed words, or handwriting by sight, due to neurological disease or injury.

**visual analogue scale** a psychometric instrument used to evaluate subjective characteristics that extend over a range of continuous values. Respondents specify their level of the characteristic of interest by indicating a position along a continuous line, anchored at its end points by word descriptors. For example, a visual analogue scale for performance might have *poor* on the left end with a blank line across to *excellent* on the right end. The respondent would mark a place along that line to indicate his or her perceived performance level. Also called **unnumbered graphic rating scale**.

**visual angle** the angle subtended by a visual target at the nodal point of the eye. The width of an adult thumb at arm's length subtends about 1° of visual angle, and there are 360° of visual angle around the entire head.

**visual anomia** failure to name visual stimuli correctly despite intact visual recognition.

**visual anosognosia** see ANTON'S SYNDROME.

**visual apperception test** a PROJECTIVE TECHNIQUE in which participants (most often children and adolescents) are presented with a visually oriented task, such as drawing a person, object, or situation; finishing an incomplete drawing; or creating a narrative from a single or multiple visual stimuli.

**visual area** any of many regions of the cerebral cortex in which the neurons are primarily sensitive to visual stimulation. Together, all the visual areas comprise the VISUAL CORTEX. Most visual areas can be distinguished from one another on the basis of their anatomical connections (i.e., their CYTOARCHITECTURE) and their specific visual sensitivities. Individual areas are designated by "V" and a number that indicates roughly how distant the area is from STRIATE CORTEX. See V1; V2; V3; V4; V5.

**visual area MT** see V5.

**visual association cortex** any of the VISUAL AREAS in the cerebral cortex that lie outside the striate cortex, including V2, V3, V4, and V5. See also PRESTRIATE CORTEX.

**visual attention** the process by which one item (the target) is selected for analysis from among several competing items (the distractors). See also FEATURE-INTEGRATION THEORY.

**visual attention disorder** any disturbance of a person's ability to detect and attend to visual stimuli. Examples include BÁLINT'S SYNDROME and VISUAL NEGLECT. See also PERCEPTUAL EXTINCTION.

**visual aura** see AURA.

**visual axis** a straight line that extends from the external fixation point through the nodal point of the eye to the fovea. Compare PRIMARY LINE OF SIGHT.

**visual blurring** the sensation resulting from impairment of the ability to perceive form in the central field region, which is typically associated with poor visual acuity and reduced spatial CONTRAST SENSITIVITY. Visual blurring can occur as a result of retinal disease (e.g., macular degeneration, diabetic retinopathy) or damage to the optic nerve (e.g., associated with multiple sclerosis) or visual cortex; it has also been reported as a side effect of anticholinergic drugs and as a consequence of ACCOMMODATIVE SPASM. Patients experience difficulties with reading and face perception (especially in black-and-white photographs).

**visual cache** see VISUOSPATIAL SKETCHPAD.

**visual capture** the tendency for vision to override the other senses. It is responsible for the VENTRILOQUISM EFFECT.

**visual cliff** an apparatus to investigate the development of DEPTH PERCEPTION in nonverbal human infants and in nonhuman animals, and in particular, whether depth perception is an innate ability or learned through visuomotor experience. The apparatus consists of a table with a checkerboard pattern, dropping steeply down a "cliff" to a surface with the same pattern some distance below the tabletop. The apparatus is covered with a transparent surface, and the participant is positioned on this at the border between the tabletop and the cliff. Reluctance to crawl onto the surface covering the cliff is taken as an indication that the participant can discriminate the apparent difference in depth between the two sides of the apparatus. Most infants as young as 6 months of age will not cross to the side over the cliff. [devised by Eleanor J. GIBSON and Richard D. WALK]

**visual closure** the ability to identify a familiar object from an incomplete visual presentation.

**visual comfort probability (VCP)** a measure of the acceptability of discomfort glare (interference with vision caused by excessive illumination), calculated as the percentage of users who are likely to find the level of glare in a room or work area acceptable.

**visual communication** the use of distinctive colors, shapes, or movements that are detected by the visual system as a means of communication between individuals. For example, nonhuman animals may have distinctive colors in the breeding season to indicate reproductive state, fluff out fur to appear larger in a threat context, or gesture with limbs or head in a variety of other contexts.

**visual consciousness** those contents of consciousness that have a visual origin. Operationally, such consciousness consists of those visual events that can be reported, distinguished from each other, and acted upon on request. Given these criteria, visual consciousness does not include BLINDSIGHT.

**visual constructional impairment** see VISUOCONSTRUCTIONAL IMPAIRMENT.

**visual-construction test** see VISUOCONSTRUCTIVE TEST.

**visual cortex** the cerebral cortex of the occipital lobe, specifically the STRIATE CORTEX (primary visual cortex). In humans, this occupies a small region on the lateral surface of the occipital pole of the brain, but most is buried in the banks of the calcarine fissure on the medial surface of the brain. The visual cortex receives input directly from the LATERAL GENICULATE NUCLEUS via the OPTIC TRACT and sends output to the multiple visual areas that make up the VISUAL ASSOCIATION CORTEX.

**visual cycle** the biophysical and biochemical sequence of events that includes the release of all-*trans* retinal from RHODOPSIN during light stimulation, followed by its conversion to 11-*cis* retinal in the retinal PIGMENT EPITHELIUM, and then the return of the 11-*cis* retinal to the photoreceptor for the reconstitution of rhodopsin.

**visual discrimination** the ability to distinguish shapes, patterns, hidden figures, or other images from similar objects that differ in subtle ways.

**visual dominance** **1.** the phenomenon in which visual stimuli, when presented simultaneously with auditory or other stimuli, tend to dominate awareness. **2.** the phenomenon in which the view from one eye dominates the PERCEPT when viewing a scene with two eyes. See OCULAR DOMINANCE.

**visual dyslexia** a form of acquired DYSLEXIA characterized by multiple reading errors involving the substitution or transposition of letters within words (see PARALEXIA). The resulting misread words are often very similar to the actual words (e.g., reading *wife* as *life*, or *bug* as *dug*). [proposed in 1973 by British neuropsychologists John C. Marshall (1939–2007) and Freda Newcombe (1925–2001)]

**visual encoding** the neural processes by which stimuli seen in the external world are converted into internal (mental) representations that can subsequently be processed and stored in memory. For example, when a person looks at a photograph, PHOTORECEPTORS in the individual's RETINA receive the visual sensory information and convey it to additional neurons, which in turn convey the information to populations of RETINAL GANGLION CELLS. The cylindrical extensions (AXONS) of the retinal ganglion cells form the OPTIC NERVE, which projects to the LATERAL GENICULATE NUCLEUS in the thalamus and the SUPERIOR COLLICULUS in the midbrain. The sensory input reaches VISUAL AREAS in the cerebral cortex and ultimately the HIPPOCAMPUS within the medial TEMPORAL LOBE, where—by mechanisms yet to be explained—it is analyzed and combined with input from the AMYGDALA, ENTORHINAL CORTEX, and other brain regions into a single abstract representation of the visual experience that is suitable for incorporation into short-term and possibly long-term memory. In other words, visual encoding may be conceptualized as a process intermediate to the extraction of meaning. Parallel neural conversion processes occur for stimuli that are heard (**acoustic encoding**),

smelled (**olfactory encoding**), tasted (**gustatory encoding**), or felt (**tactile encoding**).

**visual environment** in natural or built settings, the aggregate of external features (e.g., objects) and conditions (e.g., light) that surround an organism and influence its visually guided behavior.

**visual evoked potential (VEP)** an electric potential recorded from the scalp overlying the visual cortex in response to visual stimulation.

**visual extinction** a form of VISUAL NEGLECT in which a previously visible stimulus in one half of the visual field is not consciously reported when a second stimulus appears simultaneously in the other half of the visual field. Visual extinction occurs as a result of brain damage, usually to the parieto-occipital cortex contralateral to the visual field in which the extinction occurs.

**visual fatigue** the fading of visual images, particularly in bright light. Visual fatigue is often experienced by patients with optic neuritis; it can also occur after head injuries, especially following prolonged periods of visual testing or reading, as a result of reduced VISUAL ATTENTION.

**visual field** the extent of visual space over which vision is possible with the eyes held in a fixed position. In humans, the outer limit of vision for each eye extends approximately 60° nasally, 90° temporally, 50° superiorly, and 70° inferiorly. The extent varies with age: Very young children and older people have a smaller visual field. Objects nearest to the fixation point are seen with greatest clarity because visual acuity, spatial contrast sensitivity, and color vision are best in the foveal region.

**visual field defect** a reduction in the normal extent of the visual field, characterized by partial or total blindness. This is caused by an interruption in the flow of visual impulses between the retina and the visual cortex, which may be caused by a lesion before, after, or in the OPTIC CHIASM or in all or a part of the OPTIC RADIATIONS; it can involve tracts of one or both eyes. Each possible lesion produces a different defect.

**visual field sparing** the extent to which normal vision is preserved in a visually impaired or deprived half of a visual field, expressed in degrees of VISUAL ANGLE measured from the fovea. **Foveal sparing** means that the foveal region (1°) is spared; **macular sparing** refers to the preservation of the macular region (5°); **macular splitting** denotes sparing ranging from 1° to 5°.

**visual fixation** the orientation of the eyes so that the image of a viewed object falls on each fovea, in the central part of the retina.

**visual form agnosia** see VISUAL AGNOSIA.

**visual form discrimination** the ability to discriminate visually between different shapes. The **Visual Form Discrimination Test (VFDT)**, a multiple-choice, matching-to-sample test developed in the 1980s by Arthur L. BENTON, assesses an individual's ability to discriminate fine details of visual shapes and is designed to screen for visual perceptual deficits. Each of the 16 test items contains a target with three elements: two large geometric shapes and a peripheral figure. The task is to choose a correct match to the target out of four options presented below the target. Up to 2 points are awarded for responses to each of the 16 test items, with the total score for all items then compared to normative data.

**visual function** the ability to process visual stimuli.

**visual hallucination** visual perception in the absence of any external stimulus. Visual hallucinations may be unformed (e.g., shapes, colors) or complex (e.g., figures, faces, scenes). In hallucination associated with psychoses (e.g., paranoid schizophrenia, alcohol- or hallucinogen-induced psychotic disorder), the individual is unaware of the unreality of the perception, whereas insight is retained in other conditions (e.g., pathological states of the visual system). Visual hallucinations may arise in association with lesions of the peripheral or central visual pathway or visual cortical areas; they are often present in temporal-lobe epilepsy and may appear during prolonged isolation. See also PEDUNCULAR HALLUCINOSIS.

**visual hearing** the substitution of vision for hearing. This may be accomplished, within limits, by LIPREADING and gesture interpretation.

**visual illusion** a misperception of external visual stimuli that occurs as a result of a misinterpretation of the stimuli, such as a GEOMETRIC ILLUSION. Visual illusions are among the most common type of illusion.

**visual imagery** mental imagery that involves the sense of having "pictures" in the mind. Such images may be memories of earlier visual experiences or syntheses produced by the imagination (e.g., visualizing a pink kangaroo). Visual imagery can be used for such purposes as dealing with traumatic events, establishing DESENSITIZATION hierarchies, or improving physical performance. See VISUALIZATION.

**visual impairment** partial or total inability to see, or to see normally, due to partial or complete loss or absence of vision or to visual dysfunction. Visual impairment encompasses the continuum from BLINDNESS to LOW VISION. It can result from disease or degenerative disorder (e.g., CATARACT, GLAUCOMA, DIABETIC RETINOPATHY, MACULAR DEGENERATION), injury, or congenital defects (e.g., refractive errors, ASTIGMATISM). The degree of visual impairment is assessed in terms of disability in everyday life. Also called **vision impairment**. See also ADVENTITIOUS VISUAL IMPAIRMENT; CONGENITAL VISUAL IMPAIRMENT.

**visual indexing theory** see FINST THEORY.

**visual induction** the influence that one visual stimulus or part of the VISUAL FIELD can have on the perception of an adjacent stimulus or the remainder of the visual field. COLOR CONTRAST effects are examples of visual induction.

**visualization** *n.* **1.** the process of creating a visual image in one's mind (see VISUAL IMAGERY) or mentally rehearsing a planned movement in order to learn skills or enhance performance. **2.** in psychotherapy, the intentional formation by a client of mental visual images of a scene or historical incident that may be inhibited or the source of anxiety. The purpose is to bring the visualized scene into the present therapeutic situation where it can be discussed and worked out to reduce its negative implications. See also GUIDED AFFECTIVE IMAGERY. **3.** a hypnotic method used to induce or increase relaxation in which the individual is asked to imagine, for example, sitting comfortably at home and then to use all senses in perceiving the scene (e.g., the curtains blowing in the windows, the texture of the armchair). The more fully the individual concentrates on these features, the more deeply relaxed he or she becomes. **4.** in consumer psychology, a motivation-research technique using imaginary or fictitious situations or conditions in

order to induce consumers to reveal the true reasons for their choice of products. For example, instead of being asked why they like or dislike a product, consumers may be asked to characterize the type of individual they would expect to buy the product. —**visualize** *vb.*

**visual learning** training or CONDITIONING that depends upon visual cues. The brain center for visual learning is believed to be in the INFEROTEMPORAL CORTEX, where cortical cells have been demonstrated to be highly active in analyzing visual inputs.

**visually guided reaching** movements in which concurrent visual information is used to locate a target and avoid obstacles. Visually guided reaching is contrasted with movements to remembered, but unseen, targets and with movements guided by other senses (e.g., touch).

**visual masking** the ability of one visual stimulus to render another stimulus invisible when presented in close temporal proximity. See MASKING.

**visual memory** the capacity to remember what has previously been seen in the form of visual images. Compare MOTOR MEMORY; VERBAL MEMORY.

**visual memory span** see MEMORY SPAN.

**visual-motor coordination** the ability to synchronize visual information with the movements of different parts of the body.

**visual narrative** see VERBAL NARRATIVE.

**visual neglect** a form of NEGLECT in which the individual is unaware of one side of the visual field. This occurs most often in the left visual field following right parietal damage or dysfunction. See also UNILATERAL NEGLECT.

**visual object agnosia** see VISUAL AGNOSIA.

**visual organization** in GESTALT principles of perception, a visual field that appears to be organized and meaningful.

**visual organization test** any test that involves the organization of visual, nonverbal stimuli.

**visual perception** the awareness of visual sensations that arises from the interplay between the physiology of the VISUAL SYSTEM and the internal and external environments of the observer.

**visual perseveration** see PALINOPSIA.

**visual persistence** a sensation of visual stimulation that continues briefly after the actual stimulus is extinguished, perhaps caused by integration lag of visual signals. The light trail of a glowing stick moved rapidly in the dark is an example of visual persistence. Also called **persistence of vision**.

**visual phosphene** see PHOSPHENE.

**visual pigment** see PHOTOPIGMENT.

**visual-placing reflex** the reflex act of animals in placing their legs to reach a surface they can see. Animals that have undergone surgical DECORTICATION may lose this normally automatic response and fail to stretch their legs toward a visible surface.

**visual preference paradigm** a research technique for studying visual discrimination in infants in which the amount of time spent looking at different visual stimuli is measured to determine which stimulus the infants prefer. It is assumed that the stimulus looked at most often is the one

that is preferred and that such preferences indicate an ability to discriminate among stimuli.

**visual processing** the modification and analysis of visual signals at all levels of the VISUAL SYSTEM.

**visual projection** **1.** the rendering of a three-dimensional object into two dimensions to produce a silhouette. **2.** any technique for the presentation of visual stimuli.

**visual purple** see PIGMENT BLEACHING; RHODOPSIN.

**visual pursuit** movements of the eyes in an attempt to maintain fixation on a moving target. Also called **ocular pursuit**; **visual tracking**.

**visual receptive field** the region of VISUAL SPACE in which stimulation will evoke a response from a neuron in the retina. Also called **retinal receptive field**. See also RETINOTOPY.

**visual receptor** see PHOTORECEPTOR.

**visual recognition** the ability to recognize an object visually.

**visual recognition test** any test in which participants are asked to identify a series of familiar objects during single or multiple visual presentations of the objects.

**visual reproduction** the ability to draw or create an object presented visually.

**visual-righting reflex** any of the reflexes that automatically orient the head to the visual fixation point of the moment.

**visual screening** **1.** the process of assessing individuals for eye infections or disorders, for vision deficits and impairments caused by disease (e.g., glaucoma, macular degeneration) or trauma, or for visual performance on specific tasks (e.g., driving). **2.** an aversive procedure, such as holding a hand over an individual's eyes to block visual input for a brief period, that is occasionally used in the management of aggressive, self-injurious, or stereotyped behavior of children with severe intellectual or developmental disabilities.

**visual search** the process of detecting a target visual stimulus among distractor stimuli. In experimental studies, the characteristics of the target and distractors are manipulated to explore the mental operations that underlie VISUAL ATTENTION. See also FEATURE-INTEGRATION THEORY.

**visual-search perceptual disorder** a disorder exemplified by difficulty in locating a specific number in a random array on a board as a result of a lesion in one cerebral hemisphere. Normally, individuals perform better when the number sought is to the left of the midline. Individuals with left-hemisphere damage also do better when the number is to the left of the midline, whereas those with right-hemisphere damage perform better when the number is to the right of the midline.

**visual sensory memory** see ICONIC MEMORY.

**visual space** the three-dimensional perspective of the visual field.

**visual-spatial ability** the ability to comprehend and conceptualize visual representations and spatial relationships in learning and in the performance of tasks such as reading maps, navigating mazes, conceptualizing objects in space from different perspectives, and executing various geometric operations. Beginning in adolescence, males, on average, show a definite superiority in certain aspects of

visual-spatial ability, whereas females, on average, display superiority in certain aspects of VERBAL ABILITY.

**visual stimulation** stimulation by light that triggers a response in the receptor cells in the retina.

**visual system** the components of the nervous system and the nonneural apparatus of the eye that contribute to the perception of visual stimulation. The anterior structures of the eye, such as the CORNEA and LENS, focus light on the RETINA, which transduces photons into neural signals. These are transmitted via the OPTIC NERVE and OPTIC TRACT to nuclei in the thalamus and brainstem. These in turn transmit the signals either to the VISUAL AREAS of the cerebral cortex for hierarchical processing and conscious analysis or directly to motor centers in the brainstem and spinal cord to produce eye movements.

**visual texture** an attribute of a two-dimensional figure or a two-dimensional rendering of a three-dimensional object that describes its surface characteristics. Visual texture is related to, but not the same as, texture in the tactile sense. For example, the words *shiny* or *speckled* describe visual texture, whereas *smooth* or *wavy* can also describe tactile texture. Gradients of visual texture are often used to infer depth in a two-dimensional scene and also indicate slant.

**visual threshold** **1.** the minimum level of stimulation that can be detected visually. **2.** any of the thresholds for detecting various aspects of visual stimulation, including intensity, resolution, contrast sensitivity, movement acuities, position acuities, and so on.

**visual tracking** see VISUAL PURSUIT.

**visual transduction** the biochemical and biophysical process in which light energy is converted to a neural signal in a photosensitive cell containing a retinal PHOTORECEPTOR. See also ISOMERIZATION; VISUAL CYCLE.

**visual word-form dyslexia** an acquired DYSLEXIA characterized by difficulties related to analyzing the attributes of written words visually. Its major types include ATTENTIONAL DYSLEXIA, NEGLECT DYSLEXIA, and SPELLING DYSLEXIA. Also called **peripheral dyslexia**; **word-form dyslexia**. Compare CENTRAL DYSLEXIA.

**visual yellow** the bleached form of the photopigment RHODOPSIN, all-*trans* retinal. Also called **xanthopsin**. See PIGMENT BLEACHING.

**visuoconstructional impairment** an impairment characterized by difficulty in construction tasks, such as drawing or assembling the various parts of an object into a complete structure. See CONSTRUCTIONAL APRAXIA. Also called **visual constructional impairment**.

**visuoconstructive test** any of a wide range of tests that require a combination of visual and motor skills in the construction of an end product as an evaluation of these nonverbal skills. The most common examples of these tests are drawing tests, BLOCK-DESIGN TESTS, and jigsaw-puzzle tests. Also called **visual-construction test**.

**visuomotor ataxia** see OPTIC ATAXIA.

**visuomotor behavior rehearsal** a program of combining PROGRESSIVE RELAXATION and imagery for performance enhancement.

**visuospatial agnosia** a disorder of spatial orientation, which may be tested by asking the individual to point to objects or other stimuli located in different parts of his or

her visual field. Individuals can report objects in their visual fields but not the spatial relationships of the objects to one another.

**visuospatial function** the ability to perceive the spatial (relational) aspects of a figure or object in two and three dimensions.

**visuospatial sketchpad** in the model of WORKING MEMORY proposed in 1974 by British cognitive psychologists Alan D. Baddeley (1934– ) and Graham J. Hitch (1946– ), a component that briefly holds and manipulates information about the appearance of objects and their location in space. For example, if one tried to determine which of two countries is larger or to rate their proximity to one another, this would involve mentally picturing and comparing both countries within the visuospatial sketchpad. As with the analogous PHONOLOGICAL LOOP for sound, the visuospatial sketchpad is divided into two parts: the **visual cache**, specializing in information about form, color, and other aspects of visual identity, and the **inner scribe**, specializing in information about spatial location and movement representation and planning. Although not as extensively researched as the phonological loop, the idea of the sketchpad and its conceptualization as a multi-dimensional structure is increasingly supported by neuropsychological and functional imaging evidence in addition to experimental findings. Other components of the Baddeley and Hitch working memory model include the CENTRAL EXECUTIVE and the more recently introduced EPISODIC BUFFER.

**visuotopic map** see RETINOTOPIC MAP.

**vital capacity** the capacity of the lungs to hold air, measured as the maximum volume of air that can be exhaled after maximum inspiration.

**vital exhaustion** a state characterized by excessive fatigue, lack of energy, increased irritability, sleep disturbances, and feelings of demoralization. It has been associated with increased risk of cardiovascular disease and cardiovascular-related events, particularly myocardial infarction and cardiac arrest. See also BURNOUT. [defined and first investigated in the 1980s by Dutch researcher A. Appels and colleagues]

**vital functions** functions of the body (e.g., respiration, blood circulation, excretion) that are necessary to sustain life. Many vital functions are controlled by the brainstem.

**vitalism** *n.* 1. the theory that the functions of living organisms are determined, at least in part, by a life force or principle. German biologist Hans Driesch (1867–1941) was the chief exponent of this view, holding that life processes are autonomous and purposive and that potentialities for growth and development are realized through the operation of an agent to which he applied the term ENTELECHY. French philosopher Henri Bergson (1859–1941) named this creative, vital force the ÉLAN VITAL. 2. more generally, any theory that opposes NATURALISM and the reduction of psychological life to biological structures and processes. —**vitalist** *adj.*, *n.*

**vitality** *n.* physical or intellectual vigor or energy; zest. See also FITNESS.

**vital spirits** see ANIMAL SPIRITS.

**vital statistics** data, such as those compiled in a medical or governmental record, on specific life events (e.g., birth, death, disease, marriage) in a population.

**vitamin** *n.* an organic substance that in minute quantities is essential for normal growth and health. Many vitamins function as COENZYMES, aiding in the metabolism of carbohydrates, fats, and proteins. A few vitamins can be synthesized in the human body, but most must be supplied in the diet. The most important are vitamin A, the vitamin B complex (including THIAMINE, riboflavin, pyridoxine, cyanocobalamin [B<sub>12</sub>], folic acid, NICOTINIC ACID, and pantothenic acid), vitamin C (ASCORBIC ACID), vitamin E, and vitamin K. Vitamins were so named in 1913 by Polish-born U.S. biochemist Casimir Funk (1884–1967), based on his belief that all vitamins were AMINES.

**vitamin A** a fat-soluble vitamin. Its aldehyde, RETINAL, is a component of the photopigments in the retina. Vitamin A deficiency results in night blindness and other visual disorders. Also called **retinol**. See also VISUAL CYCLE.

**vitamin and mineral therapy** the treatment of mental or physical conditions through a daily intake of diagnostic-specific vitamins or mineral supplements (or both) in specific dosages. These are typically prescribed in conjunction with some psychopharmacological agent, and effectiveness is still a matter of debate and research. See also MEGAVITAMIN THERAPY.

**vitamin A toxicity** a condition caused by excessive intake of vitamin A (retinol). A large overdose of vitamin A—500,000 IU or more—can cause headache, vomiting, bone pain, weakness, blurred vision, irritability, and skin flaking. Long-term intake of 100,000 IU or more per day can also lead to toxicity. Symptoms include hair loss, headache, bone thickening, enlarged liver and spleen, anemia, menstrual problems, stiffness, joint pain, weakness, and dry skin. Although high doses of beta-carotene (which can be converted to vitamin A in the body) are not toxic, they can lead to a distinctive deep yellow pigmentation of the skin.

**vitamin deficiency** lack of a vitamin needed for normal bodily functions. For example, deficiency of thiamine (vitamin B<sub>1</sub>) is often associated with severe and chronic alcoholism (see WERNICKE'S ENCEPHALOPATHY; WERNICKE-KORSAKOFF SYNDROME).

**vitamin D toxicity** a condition caused by excessive intake of vitamin D. Long-term overdose of vitamin D can cause irreversible damage to the kidneys and cardiovascular system and can retard growth in children. Excessive amounts of the vitamin may lead to high blood pressure and premature hardening of the arteries. Nausea, abdominal pain, loss of appetite, weight loss, seizures, and an irregular heartbeat may be signs of overdose.

**vitamin model** a model proposing nine attributes of work that influence employee satisfaction. As with vitamins, employees will require some minimal amount or dosage of each attribute to be satisfied with their jobs. In the case of three attributes (money, physical security, and valued social position), employees can have an overabundance with no negative effects. However, too much of the remaining six attributes (externally generated goals, variety, clarity, control, skill use, and interpersonal contact) can lead to problems. [proposed by British organizational psychologist Peter B. Warr]

**vitex agnus castus** see AGNUS CASTUS.

**vitreous hemorrhage** a complication of diabetes mellitus marked by bleeding within the eyeball due to the rupture of capillaries of the retina. See also DIABETIC RETINOPATHY.

**vitreous humor** the thick, transparent fluid filling the cavity (the **vitreous body**) between the lens of the eye and the retina.

**viviparity** *n.* literally, live birth: reproduction in which the embryo develops within the female until a well-formed individual emerges. Compare OVIPARITY. —**viviparous** *adj.*

**vivisection** *n.* dissection performed on a living animal for research or experimental purposes. Many scientists and researchers oppose the practice, questioning its scientific validity and necessity, and numerous others criticize it as inhumane and unethical. See also ANIMAL CARE AND USE; ANIMAL RIGHTS.

**Vivitrol** *n.* a trade name for NALTREXONE.

**VLBW** abbreviation for very LOW BIRTH WEIGHT.

**VMH** abbreviation for VENTROMEDIAL HYPOTHALAMUS.

**VMI** abbreviation for DEVELOPMENTAL TEST OF VISUAL-MOTOR INTEGRATION.

**VNO** abbreviation for vomeronasal organ (see VOMERONASAL SYSTEM).

**vocabulary growth** the development of vocabulary in children. In estimating vocabulary size, a distinction is commonly drawn between RECEPTIVE VOCABULARY and PRODUCTIVE VOCABULARY; more recent research has concentrated on the process of vocabulary acquisition and the organization of the child's MENTAL LEXICON.

**vocabulary spurt** see NAMING EXPLOSION.

**vocabulary test** a test designed to determine the number and level of words that an individual can use (i.e., PRODUCTIVE VOCABULARY) or understand (i.e., RECEPTIVE VOCABULARY).

**vocal communication** communication through auditory signals usually produced by a vibrating organ, such as the larynx in the throats of some mammals or the two syringes located in the bronchial branches in birds. Vibrations produced by these organs are altered by changing configurations of the tongue and lips and the shape of the oral and nasal cavities. Other sound-producing mechanisms in nonhuman animals include **stridulation**, the rubbing together of body parts, as in crickets. See also ANIMAL VOCALIZATION.

**vocal cords** a pair of tissue folds that project from the walls of the LARYNX. They vibrate, producing sounds, when expired air passes through the narrow space (GLOTTIS) between them. Also called **vocal folds**.

**vocal-image voice** audible speech patterns that have been electronically transformed into visual patterns that can be read by people with severe hearing loss.

**vocalization** *n.* the production of sounds by means of vibrations of the vocal cords, as in speaking, babbling, singing, screaming, and so forth. See also ANIMAL VOCALIZATION. —**vocalize** *vb.*

**vocal reaction time** in studies of cognition, the time that a participant takes to begin a spoken response to a stimulus. See REACTION TIME.

**vocal register** the tonal or pitch range of an individual's voice. See also CHEST VOICE; FALSETTO; HEAD VOICE.

**vocal tract** the structures, collectively, that are involved in vocalization, including the VOCAL CORDS and glottis of

the larynx together with the pharynx, nasal cavity, mouth, and ARTICULATORS.

**vocation** *n.* an occupation or profession to which one is particularly suited, especially one involving a sense of mission or calling. —**vocational** *adj.*

**vocational adjustment** the degree to which an individual succeeds in choosing the kind of work or career best suited to his or her interests, traits, and talents. The term differs from OCCUPATIONAL ADJUSTMENT in emphasizing the match of career to personal goals and aptitudes, rather than the match of the individual to objective work conditions.

**vocational appraisal** the prediction by a vocational counselor of a client's potential for success and fulfillment in a particular occupation. A vocational appraisal is based on the counselor's understanding of occupational opportunities in relation to the client's personality, intelligence, abilities, and interests as revealed in interviews and tests. See VOCATIONAL COUNSELING.

**vocational aptitude** the personal abilities and traits required for successful performance of the tasks involved in a particular occupation.

**vocational aptitude test** any instrument designed to assess the abilities, interests, personality traits, and other factors deemed essential for success in a particular occupation. Such tests are often used to assess how well the participant's profile on these dimensions matches the profile of the typical or ideal person in the occupation.

**vocational counseling** **1.** a service provided to employees who seek guidance on such matters as adjusting to new jobs or roles, developing their careers within organizations, or any personal or other problems affecting job satisfaction or job performance. See also OUTPLACEMENT COUNSELING. **2.** see VOCATIONAL GUIDANCE.

**vocational education** see VOCATIONAL TRAINING.

**vocational guidance** the process of helping an individual to choose an appropriate vocation through such means as (a) in-depth interviews; (b) administration of aptitude, interest, and personality tests; and (c) discussion of the nature and requirements of specific types of work in which the individual expresses an interest. Also called **vocational counseling**.

**vocational maturity** a developmentally advanced and competent orientation to issues of employment and occupational choice. A person with high vocational maturity is realistic about his or her options and takes a relatively rational approach to exploring the possibilities and making career decisions.

**vocational rehabilitation** a program designed to develop or restore PRODUCTIVITY in individuals with mental or physical disabilities or those who have been injured or ill. A vocational rehabilitation program includes assessment, VOCATIONAL GUIDANCE, and training; it involves helping the individual to develop skills that have been lost or neglected and to find or return to employment in the competitive job market or another setting (see SHELTERED WORKSHOP; TRANSITIONAL EMPLOYMENT). Also called **occupational rehabilitation**. See also WORK REHABILITATION CENTER.

**vocational services** VOCATIONAL GUIDANCE, aptitude testing, and VOCATIONAL TRAINING, together with practical

assistance in finding employment, as provided by a school, college, hospital, clinic, or rehabilitation center.

**vocational training** an organized program of instruction designed to equip individuals with the requisite skills and qualifications for placement in specific jobs or trades. Also called **vocational education**. See also VOCATIONAL REHABILITATION.

**vodun** *n.* see VOODOO.

**voice** *n.* **1.** the sound produced by the larynx and modified by other elements of the vocal tract (e.g., lips, tongue) before it issues from the mouth. **2.** in phonetics, the quality of a VOICED, as opposed to an UNVOICED, speech sound. **3.** in linguistics, see ACTIVE VOICE; PASSIVE VOICE. **4.** the distinctive tone or quality of a person's speaking or singing voice.

**voice-activated control** see SPEECH-ACTIVATED CONTROL.

**voice-activated switch** an interface between a device and the user that is activated by the user's voice and is often useful for individuals with certain disabilities. For example, an individual with a motor impairment can use a voice-activated switch to turn lights, appliances, and other household devices on and off.

**voiced** *adj.* denoting speech sounds that are articulated with accompanying vibration of the vocal cords. Voiced sounds include all the vowels, semivowels, and diphthongs, as well as a number of consonants. The dichotomy voiced–UNVOICED is an important BINARY FEATURE in English and many other languages.

**voice disorder** any disorder that affects the pitch, loudness, tone, or resonance of the voice.

**voice key** an electronic device that interfaces between a microphone and a computer, used for recording vocal response times in language-production tasks, such as word or picture naming. When a stimulus is presented the voice key is activated and begins to monitor the sound level from the microphone; if the sound level then exceeds a specific threshold level, indicating speech, the voice key records the amount of time that has elapsed since it was activated.

**voiceless sound** see UNVOICED.

**voice-onset time (VOT)** in phonetics, the brief instant that elapses between the initial movement of the speech organs as one begins to articulate a VOICED speech sound and the vibration of the vocal cord. Voice-onset time has been the subject of research in adult and infant speech perception because of evidence that this continuous acoustic dimension is perceived categorically (see CATEGORICAL PERCEPTION).

**voice-output system** a system that creates a voice for a computer to provide auditory feedback for individuals with visual impairment. For example, the system may create verbal output describing a computer file.

**voiceprint** *n.* a digital image of a voice, produced by electronic recording, that can be used for identification and authentication purposes. Voiceprints may also be used to analyze such vocal and speech characteristics as frequency, duration, and amplitude.

**voice-stress analyzer** an instrument that detects minute alterations in the voice, undetectable to the human ear, that presumably occur when a person is under stress. It is sometimes used as a lie detector, although its reliability

and validity are controversial, and the results are not accepted as evidence in many U.S. courts of law.

**voice therapy** the diagnosis and remediation of voice disorders by a specialist in the physiology and pathology of voice production. See also SPEECH THERAPY.

**voicing** *n.* **1.** the use of vocal cord vibrations to produce speech sounds. See VOICED; UNVOICED. **2.** giving expression to ideas, observations, opinions, and the like through spoken communication.

**voir dire** the process of questioning prospective jurors to determine if they hold biases that may reasonably interfere with their ability to act impartially in a particular trial (from Norman French, literally: "to speak the truth"). The questions may be asked in private or in open court and may be posed by the attorneys, the judge, or both. Jurors may be asked to stand down by a CHALLENGE FOR CAUSE or a PEREMPTORY CHALLENGE.

**volatile marriage** a long-lasting marriage marked by both passionate arguments and expressions of affection, but with more positive than negative interactions.

**volition** *n.* **1.** the faculty by which an individual decides upon and commits to a particular course of action, especially when this occurs without direct external influence. The term encompasses a crucial set of activities involving the self, including choice and decision, self-control, intentional action, and an active rather than passive response to events. According to SELF-REGULATORY RESOURCES THEORY, volition depends on a limited resource that is expended whenever a person makes a decision or exerts control. **2.** the act of exercising this faculty. See also FREE WILL; WILL. —**volitional** *adj.*

**volitional tremor** see ACTION TREMOR.

**volley** *n.* a synchronous discharge, as when nerve impulses occur in phase along different fibers of a nerve.

**volley theory** the principle that individual fibers in an auditory nerve respond to one or another stimulus in a rapid succession of rhythmic sound stimuli, whereas other fibers in the nerve respond to the second, third, or *n*th stimulus. The result is that successive volleys of impulses are fired to match the inputs of stimuli, yet no single fiber is required to respond to every stimulus. Thus, a nerve can reflect a more rapid frequency of stimulation (e.g., 1000 Hz) than any individual fiber could follow. Also called **volley principle**. See also HEARING THEORIES. [proposed in 1949 by Ernest Glen WEVER]

**volt** (symbol: V) *n.* the SI (International System) unit for measuring the difference of electric potential between two regions.

**voltage-gated ion channel** an ION CHANNEL that opens or closes in response to the voltage difference across the membrane, such as the voltage-gated sodium (Na<sup>+</sup>) channel that mediates the ACTION POTENTIAL. Also called **voltage-activated gate**. Compare LIGAND-GATED ION CHANNEL.

**volubility** *n.* excessive, uncontrollable talkativeness, which is a common symptom of a MANIC EPISODE.

**volume color** see BULKY COLOR.

**volume of distribution** (symbol:  $V_d$ ) the amount of a drug in the body in relation to its concentration in various body fluids (e.g., blood, plasma, extracellular fluid). It is ex-



pressed by the equation  $V_d = \text{dose (amount of drug in body)}/\text{concentration in body fluid}$ .

**volumetric thirst** see HYPOVOLEMIC THIRST.

**voluntarism** *n.* **1.** in psychology, the view that human behaviors are, at least in part, the result of the exercise of VOLITION. See also FREE WILL. **2.** the general position that will and choice are important factors in all human activities. For example, in ethics, voluntarism emphasizes that commitment to any moral principle is, in large part, a "will to believe," over which the person has some control. In epistemology, the same is held to be true of knowledge. In the field of historical studies, voluntarism holds that the exercise of will has been a major factor in the course of human events. It is therefore opposed to such approaches as MARXISM, which emphasizes the role of impersonal economic forces. **3.** in metaphysics, the position that will, rather than mind, spirit, or some other substance, is the basis of reality. The best known philosophy of this kind is that of Arthur SCHOPENHAUER.

**voluntary** *adj.* describing activity, movement, behavior, or other processes produced by choice or intention and under cortical control, in contrast to automatic movements (e.g., reflexes) or action that is not intended (see IDEOMOTOR ACTIVITY). Compare INVOLUNTARY.

**voluntary admission** admission of a patient to a psychiatric hospital or other inpatient unit at his or her own request, without coercion. Such hospitalization can end whenever the patient sees fit, unlike INVOLUNTARY HOSPITALIZATION, the length of which is determined by a court or the hospital. Also called **voluntary commitment**; **voluntary hospitalization**.

**voluntary agencies and organizations** nonprofit groups supported in whole or in part by public contributions and devoted to the amelioration of public health or social welfare problems. The term *voluntary* distinguishes such groups from government agencies.

**voluntary attention** attention that is deliberately applied and controlled by the individual, as opposed to attention that is spontaneously captured by a stimulus in the environment. Brain-activation studies have investigated the extent to which voluntary and INVOLUNTARY ATTENTION are controlled by separate neural systems. Also called **endogenous attention**. Compare POSTVOLUNTARY ATTENTION. See also SECONDARY ATTENTION.

**voluntary behavior** behavior that is intentional in nature (e.g., walking, typing), as opposed to REFLEXIVE BEHAVIOR. See also OPERANT BEHAVIOR.

**voluntary commitment** see VOLUNTARY ADMISSION.

**voluntary dehydration** see DEHYDRATION.

**voluntary hospitalization** see VOLUNTARY ADMISSION.

**voluntary muscle** see SKELETAL MUSCLE.

**voluntary response** a deliberately chosen reaction to a stimulus that may require a complex coordination of excitatory and inhibitory impulses with feedback from visual, motor, and other systems.

**voluntary retrieval** see INVOLUNTARY RETRIEVAL.

**voluntary turnover** the number of employees who choose to leave an organization or unit during a given period, usually to take a position in another organization. A high rate of voluntary turnover can be an indicator of

low job satisfaction. Compare INVOLUNTARY TURNOVER. See TURNOVER.

**volunteer** *n.* an individual who contributes his or her services through personal choice and without compensation, for example, to a public or private health or social welfare agency or organization.

**volunteer bias** any systematic difference between individuals who volunteer to be in a study versus those who do not, which may potentially render the resulting group or sample of participants unrepresentative of the larger population.

**volunteerism** *n.* the act or practice of donating (i.e., giving without pay) one's time and energy to activities that contribute to the common good.

**vomerolateral system** a set of specialized receptor cells that in nonhuman mammals is sensitive to PHEROMONES and thus plays an important role in the sexual behavior and reproductive physiology of these animals. In humans, this system responds physiologically to chemical stimulation and, in turn, excites brain centers, but its role in human olfaction is not known. Also called **Jacobson's organ**; **vomerolateral organ (VNO)**.

**vomiting** *n.* ejecting the contents of the stomach through the mouth. Normally occurring as an autonomic physiological reaction, vomiting may also be self-induced, as in BULIMIA NERVOSA, as an inappropriate means of managing body weight (see PURGING).

**vomiting center** a nerve center in the medulla oblongata of the brain that is thought to partially govern vomiting. Another area, the CHEMORECEPTOR TRIGGER ZONE, also contributes to vomiting.

**von Domarus principle** an explanation of SCHIZOPHRENIC THINKING based on the concept that the individual perceives two things as identical merely because they have identical predicates or properties. [developed by Eilhard von Domarus, 20th-century German psychiatrist]

**von Economo's disease** see ENCEPHALITIS LETHARGICA. [Constantin von Economo (1876–1931), Austrian neurologist]

**von Frey hairs** see ESTHESIOMETRY. [Maximilian von Frey (1852–1932), German physiologist]

**von Frey specificity theory** a 19th-century theory, now disputed, that attempted to explain sensations of coldness, warmth, contact, and pain by linking them to different, specific receptors in the skin. The von Frey theory was premature, because not enough was known about anatomy at the time. [proposed in 1894 by Maximilian von Frey]

**von Recklinghausen's disease** see NEUROFIBROMATOSIS. [described in 1882 by Friedrich D. von Recklinghausen (1833–1910), German pathologist]

**von Restorff effect** see DISTINCTIVENESS EFFECT. [Hedwig von Restorff (1906–1962), German psychologist]

**voodoo** *n.* a syncretist religion, practiced chiefly in the Caribbean, in which west African traditions of magic and ancestor worship are combined with rites derived in part from Roman Catholicism. These typically involve the use of singing or chanting, drumbeating, and dancing to induce an ECSTATIC TRANCE, in which it is believed that spirits take possession of the worshippers, speaking and acting

through them. Also called **vodun**; **voodooism**. —**voodooistic** *adj.*

**voodoo death** a CULTURE-BOUND SYNDROME observed in Haiti, Africa, Australia, and islands of the Pacific and the Caribbean. An individual who has disobeyed a ritual or taboo is hexed or cursed by a medicine man or sorcerer (often through the pointing of a bone) and dies within a few days. Walter B. CANNON, one of the first researchers of voodoo death, suggested that the individual's strong belief in the curse caused physiological reactions in the body resulting in death. Also called **bone pointing**; **thanatomania**. See also PSYCHIC SUICIDE.

**VOR** abbreviation for VESTIBULO-OCULAR REFLEX.

**VOT** **1.** abbreviation for HOOPER VISUAL ORGANIZATION TEST. **2.** abbreviation for VOICE-ONSET TIME.

**vowel** *n.* **1.** a VOICED speech sound that is produced when the breath stream vibrating the vocal cords has unobstructed passage through the vocal tract. **2.** one of the letters of the alphabet used to represent these sounds in writing. Compare CONSONANT.

**voyeurism** *n.* a PARAPHILIA in which preferred or exclusive sexual interest and arousal is focused on observing unsuspecting people who are naked, in the act of undressing, or engaging in sexual activity. Although the **voyeur** seeks no sexual activity with the person observed, orgasm is usually produced through masturbation during the act of "peeping" or later, while visualizing and remembering the event. Also called **inspectionalism**. See also PEEPING TOM. —**voyeuristic** *adj.*

**vPCC** abbreviation for ventral POSTERIOR CINGULATE CORTEX.

**VPS** abbreviation for VALUES AND PREFERENCES SCALE.

**VR** abbreviation for variable ratio. See VARIABLE-RATIO SCHEDULE.

**Vroom-Yetton-Jago decision model** a model that can be used by leaders in judging how much they should allow followers to participate in decision making in different situations. The model consists of a set of decision rules and a decision tree in which the leader assesses several key situational attributes, such as the nature of the task (e.g., whether high or low in TASK STRUCTURE), the degree of conflict expected among followers over preferred solutions, the degree of confidence that followers will accept decisions they do not agree with, and the extent to which such acceptance is important. On the basis of this assessment, the leader chooses from among several degrees of em-

ployee participation, ranging from autocratic decision making by the leader, through consultative approaches, to full participation and delegation. [Victor H. **Vroom** (1932– ), Canadian organizational psychologist; Philip W. **Yetton** (1942– ), Australian management expert; Arthur G. **Jago** (1949– ), U.S. organizational psychologist]

**VT** **1.** abbreviation for variable time. See VARIABLE-TIME SCHEDULE. **2.** abbreviation for VICARIOUS TRAUMATIZATION.

**vulnerability** *n.* susceptibility to developing a condition, disorder, or disease when exposed to specific agents or conditions. —**vulnerable** *adj.*

**vulnerability factor** a variable that, if experienced or triggered, affects the probability that an individual will develop a condition, disorder, or disease.

**vulva** *n.* (*pl.* **vulvae**) the external female genitalia, including the CLITORIS, the LABIA, and the VESTIBULE of the vagina. Also called **pudendum**. —**vulval** *adj.*

**vulval orgasm** orgasm produced from stimulation of the VULVA (including the clitoris and labia). Sex researchers Josephine Singer and Irving Singer proposed in 1974 that there are two types of orgasm, vulval orgasm and **uterine orgasm**, the latter involving deep vaginal penetration that results in contractions of the uterus during orgasm. Uterine contractions are said not to occur with vulval orgasms; they are also said to result in a more complete or satisfying orgasm from intercourse than from stimulation of the vulva alone. However, many women have reported that whether uterine contractions accompany orgasm does not depend on the type of stimulation or sexual activity but rather on how intense the orgasm is, and that the most intense orgasms occur during activities such as cunnilingus or vibrator stimulation of the clitoris. See also VAGINAL ORGASM.

**vulvectomy** *n.* the surgical excision of all or part of the VULVA (external female genitalia). A vulvectomy is performed as a form of treatment for cancer of the vulva. It is also traditionally performed for cultural reasons (see FEMALE GENITAL MUTILATION).

**Vygotskian theory of intelligence** the theory that intelligence develops largely as a result of INTERNALIZATION; that is, by children absorbing what they observe in the environment and making it a part of themselves. Development occurs in part through a ZONE OF PROXIMAL DEVELOPMENT, which distinguishes what children can do on their own from what they can do with the assistance of others. [Lev VYGOTSKY]

**Vyvanse** *n.* a trade name for LISDEXAMFETAMINE.

# Ww

**W 1.** symbol for the COEFFICIENT OF CONCORDANCE. **2.** symbol for the statistic obtained from the WILCOXON RANK-SUM TEST.

**Waardenburg's syndrome** a hereditary disorder marked by a white or gray forelock, abnormal pigmentation of the iris, nerve deafness due to malfunction of the auditory nerves, and lateral displacement of the eyelids that gives the false appearance of the eyes being widely separated. [Petrus Johannes **Waardenburg** (1886–1979), Dutch ophthalmologist]

**WAB 1.** abbreviation for WEIGHTED APPLICATION BLANK. **2.** abbreviation for WESTERN APHASIA BATTERY.

**Wada test** a technique for determining hemispheric functions, typically memory and language, by injecting a small dose of a barbiturate into the carotid artery on one side of the head. This procedure selectively impairs the cerebral hemisphere on the injected side for 10 to 15 minutes. While each hemisphere is separately anesthetized, various cognitive tasks are administered; impairments on these tasks suggest that these functions are represented in the anesthetized hemisphere. The Wada test may be used prior to TEMPORAL LOBECTOMY in severe and intractable epilepsy. Also called **intracarotid amobarbital procedure**; **intracarotid sodium Amytal test (ISA)**; **Wada dominance test**; **Wada technique**. [Juhn Atsushi **Wada** (1924– ), Japanese-born Canadian neurologist]

**wage compression** an INTERNAL INEQUITY that occurs when the salary differential between newly hired employees and established employees is smaller than it should be. If left unchecked, wage compression leads to **wage inversion**, in which the salary of more recent employees is greater than that of established or more senior employees. **Wage expansion** is the increase in salaries of established employees as a countermeasure to wage compression. Also called **salary compression**. See also EXTERNAL INEQUITY; OVERPAYMENT INEQUITY; UNDERPAYMENT INEQUITY.

**waggle dance** see BEE COMMUNICATION.

**Wagner Act** see NATIONAL LABOR RELATIONS ACT.

**Wainwright v. Witt** a case resulting in a 1985 U.S. Supreme Court decision that increased the prosecution's ability to exclude jurors from DEATH-QUALIFIED JURIES. According to this decision, excluded jurors need not be completely opposed to the death penalty: Any doubts they have over the morality of the death penalty may justify their exclusion. This decision therefore altered the criteria for acceptance from those earlier established in *Witherspoon v. Illinois* (see WITHERSPOON EXCLUDABLES).

**WAIS** abbreviation for WECHSLER ADULT INTELLIGENCE SCALE.

**waist-to-hips ratio** the circumference of the waist divided by the circumference of the hips. This ratio has been widely used in cross-cultural studies of attractiveness.

**waiting-list phenomenon** in psychotherapy and counseling, the unusual occurrence of a cure in a person

who is on a waiting list for treatment. Such occurrences suggest that, in and of itself, the anticipation of treatment has profound psychological effects similar to the PLACEBO EFFECT.

**wait-list control group** a group of research participants who receive the same intervention or treatment as those in the EXPERIMENTAL GROUP but at a later time. Wait-list CONTROL GROUPS commonly are used in therapy outcome and similar studies to account for the potential influence of elapsed time on treatment effectiveness; they may also be used to address the ethical ramifications of withholding treatment from individuals.

**wakefulness** *n.* a condition of awareness of one's surroundings, generally coupled with an ability to communicate with others or to signal understanding of what is being communicated by others. It is characterized by low-amplitude, irregular, fast-wave electrical activity in the raw electroencephalogram.

**wake-promoting agent** a stimulant pill that contains CAFFEINE as the active ingredient and can be obtained without a doctor's prescription. It usually contains approximately 100 mg of caffeine, equivalent to the amount in one cup of regular coffee or two cups of strong tea. Formerly known colloquially as a **keep-awake pill**.

**waking center** an obsolete name for an area of the posterior hypothalamus formerly thought to control waking from sleep. It has now been shown that the SLEEP-WAKE CYCLE is governed by a number of areas in the brain, including the hypothalamus and RETICULAR ACTIVATING SYSTEM. See also SLEEP CENTER.

**waking dream 1.** an episode of dreamlike visual imagery that is experienced when one is not asleep. The term is sometimes applied to hallucinations, religious visions, and the like. **2.** a dreamlike phenomenon occurring in the GANZFELD. **3.** a dream process in the psychoanalytic theory of British psychiatrist Wilfred Bion (1897–1979).

**waking hypnosis** any technique in which hypnotic effects (see HYPNOTIC SUSCEPTIBILITY) are achieved without reference to sleep or a trance. It is induced through an apparently natural but carefully considered choice of simple words, gestures, and directives upon which to focus.

**Walden Two** the title of a 1948 novel by B. F. SKINNER set in a self-reliant experimental community based on operant conditioning principles of behavior change. The name derives from *Walden, or Life in the Woods* (1854), a series of essays in which U.S. naturalist and writer Henry David Thoreau (1817–1862) describes his experiences of individual self-reliance.

**Wald-Wolfowitz test** a nonparametric test of the NULL HYPOTHESIS that two samples have been taken from identical populations, based on whether the number of runs or sequences in an ordering is random. For instance, consider the following ordering of males (M) and females (F) from 1 to 27 according to their performance on a task:

MMMFMMMMFFMMFFFFFMMFM.

In this data set, there are nine runs. If the two samples are from the same population, then the males and females will be well mixed and the number of runs thus will be large (e.g., close to 25); if the number of runs is small, as in this example, the ordering cannot be caused by chance fluctuation and the null hypothesis thus is rejected. Also called **runs test**. [Abraham **Wald** (1902–1950), Hungarian-born mathematician; Jacob **Wolfowitz** (1910–1981), U.S. psychologist]

**walk-in clinic** a clinic in which diagnostic or therapeutic service is available without an appointment. See also DROP-IN CENTER.

**walk-through performance testing (WTPT)** a form of EMPLOYEE EVALUATION in which the employee is observed, interviewed, and rated as he or she performs the tasks required by the position.

**Wallerian degeneration** see ANTEROGRADE DEGENERATION. [Augustus **Waller** (1816–1870), British physiologist]

**walleye** *n.* see EXOTROPIA.

**Walter Reed Army Institute of Research (WRAIR)** the oldest school of public health and preventive medicine in the United States and the largest biomedical research organization serving the U.S. Department of Defense. Within its two centers—Infectious Disease Research and Military Psychiatry and Neuroscience Research—clinical trials are conducted in various areas from vaccine development to the effects of sleep deprivation, with the goal of improving soldier fitness and combat effectiveness. Headquartered in Silver Spring, Maryland, the institute was founded in 1893 as the Army Medical School. [named after U.S. Army physician **Walter Reed** (1851–1902)]

**wandering** *n.* a disturbance of motor activity that involves directionless, disoriented movement. This behavior typically occurs in individuals with neurological impairment, dementia, alcohol dependence, or extreme stress.

**wandering attention** an attention disturbance in which the individual appears fully alert but is distracted by almost any external stimulus. The condition may result from disorders of the central nervous system, such as tumors occurring higher in the NEURAL AXIS than is the case in DRIFTING ATTENTION.

**wanderlust** *n.* (German: “desire for wandering”) a tendency or compulsion to travel or roam. See also DROMOMANIA.

**warehousing** *n.* the practice of confining patients with mental disorders to large institutions for long-term, often lifetime, custodial care. This colloquial term implies lack of treatment beyond housing and feeding.

**warm-blooded animal** see ENDOTHERM.

**warm spot** any point on the surface of the skin that is particularly sensitive to stimuli producing the sensation of warmth.

**warm stimulus** a stimulus that is above skin temperature.

**warmth** *n.* 1. the sensation experienced on the skin and some internal parts when a stimulus exceeds the normal skin temperature of about 33 °C (91 °F). However, a degree of adaptation may occur, which may cause variations in this temperature. For example, if you put your foot in a hot bath and then into a bowl of warm water, the water in the

bowl will feel cool. 2. colloquially, human interest and affection.

**warm-up** *n.* 1. the use of a physical routine to prepare the body physiologically for physical exertion. 2. the use of a physical routine to prepare the motor pathways for the performance of specific skills.

**warm-up effect** a phenomenon observed in learning and motor tasks in which individuals perform inexactly and slowly at the start of a session, even if familiar with the task, but then progress quickly to more proficient performance.

**warning coloration** bright colors or patterns indicating that an organism is dangerous or unpalatable. Predators can learn from a single encounter to avoid other organisms with similar markings. Examples include the black and white coloration of skunks; the yellow and black markings of many stinging insects; and the red, yellow, and black bands of a coral snake. Also called **aposematic coloration**. See BATESIAN MIMICRY.

**warning overload** in ergonomics and SAFETY ENGINEERING, the situation in which an operator receives visual, auditory, or other types of warnings that exceed his or her ability to process them and react appropriately. Warning overload may result from excessive visual awareness campaigns in the workplace, overreliance on auditory alerts, or excessive use of visual alerts.

**war psychology** the application of psychological principles and methods to military settings and operations during wartime. It covers individual and group functioning in a variety of stressful environments, especially during times of crisis. See MILITARY PSYCHOLOGY.

**Warrington Recognition Memory Test** see RECOGNITION MEMORY TEST. [Elizabeth Kerr **Warrington**, British neuropsychologist]

**wash-out period** the time frame allotted for an administered drug to be eliminated from the body or for a previously administered intervention to become ineffective. Wash-out periods are particularly important in medical and other clinical research because the CARRYOVER EFFECT between treatments might otherwise confound the estimates of treatment effects.

**Wason selection task** a reasoning task involving four cards, each with a letter on one side and a number on the other, and a rule supposedly governing their correlation (e.g., if the letter is a vowel, then the number is even). One side of each card is shown (e.g., the cards might show E D 3 8), and the solver is asked which cards must be turned over to determine if the rule has been followed. Most participants demonstrate a CONFIRMATION BIAS, failing to check those instances in which the rule could have been breached (e.g., by turning over E and 3). Also called **four-card problem**. [developed in 1966 by Peter Cathcart **Wason** (1924–2003), British psychologist]

**waterfall illusion** see MOTION AFTEREFFECT.

**water-jug problem** a problem-solving task in which participants are asked how they would measure out a specific amount of water using a number of jugs (often three) of specified capacity. For example, they might be asked to obtain exactly 39 ml of water using jugs that hold 207 ml, 165 ml, and 42 ml. Actual jugs are not usually provided. Also called **water-jar problem**. [used to investigate the EINSTELLUNG effect by U.S. psychologist Abraham S.

LUCHINS and U.S. mathematician and psychologist Edith H. Luchins (1922–2005)]

**water on the brain** a colloquial name for CEREBRAL EDEMA or HYDROCEPHALUS.

**water regulation** see OSMOREGULATION.

**watershed infarction** necrosis (death) of neurons due to interruption of normal blood flow to an area lying at the periphery of a vascular bed, that is, in a WATERSHED ZONE.

**watershed zone** a zone that lies between the vascular distribution areas (vascular beds) of two arteries. Although the cerebral cortex is well supplied by arteries with collateral branches, there are areas at the junction of the parietal and occipital lobes and between the parietal and temporal lobes that are watershed zones. Such areas are particularly sensitive to anoxic injury (see WATERSHED INFARCTION).

**Watson–Glaser critical thinking appraisal** a measure of CRITICAL THINKING in which participants are asked to read and evaluate various statements, such as arguments, theses, problems, and interpretations. [Goodwin B. Watson (1899–1976) and Edward Maynard Glaser (1911–1993), U.S. psychologists]

**wave-interference patterns** in holographic photography, patterns created by light waves that converge from different angles: These can be recorded on film and projected into space to create a three-dimensional image. The phenomenon has been invoked as an analogy for the ability of the mind to store spatial information and to reconstruct a three-dimensional image by recall processes.

**wavelength** *n.* the distance between successive peaks in a wave motion of a given FREQUENCY, such as a sound wave or a wave of electromagnetic radiation. The wavelength is equal to the speed of propagation of the wave motion divided by its frequency.

**wavelength thresholds** the minimum and maximum light or sound wavelengths that can be perceived. In the human visual system, wavelength thresholds vary somewhat with intensity but are generally around a minimum of 380 nm and a maximum of 760 nm. Rod and cone functions also may be limiting factors, and species differences account for wavelength thresholds beyond human limits. In the human auditory system, wavelength thresholds are generally between 20 Hz and 20,000 Hz. Wavelength thresholds also vary in the auditory system across species and for different intensities of sound.

**wave of excitation** in physiology, the propagation of electrical activity through tissue, as through nerve or muscle tissue.

**waxy flexibility** see CATALEPSY.

**way finding** see ROUTE LEARNING.

**Ways of Coping Questionnaire (WAYS)** a 66-item questionnaire administered to identify thoughts and behaviors that adults use to cope with stressful encounters in everyday life. It consists of statements (e.g., “I talked to someone to find out more”) to which participants must respond using a 4-point LIKERT SCALE, ranging from *does not apply* and/or *not used* to *used a great deal*. The WAYS measures coping processes, not coping styles. [developed by U.S. psychologists Susan Folkman (1938– ) and Richard S. LAZARUS]

**WBIS** abbreviation for Wechsler–Bellevue Intelligence Scale. See WECHSLER ADULT INTELLIGENCE SCALE.

**WCST** abbreviation for WISCONSIN CARD SORTING TEST.

**weak central coherence** see CENTRAL COHERENCE THEORY.

**weak ego** see EGO WEAKNESS.

**weak law of effect** see LAW OF EFFECT.

**weak law of large numbers** see LAW OF LARGE NUMBERS.

**weak methods** **1.** problem-solving techniques based on general principles rather than specific, domain-relevant knowledge. Such methods can be applied to a wide variety of problems but may be inefficient in many cases. **2.** in artificial intelligence, programs based on general principles that do not take into account knowledge specific to any particular application or domain. Compare STRONG METHODS.

**weaning** *n.* the process of acclimating a young child or animal to obtaining all nutriment from sources other than milk. It usually refers to the cessation of breastfeeding. —**wean** *vb.*

**weaning aggression** in some species, aggression directed by mothers toward their young at the time of weaning to prevent them from suckling.

**weapon-focus effect** the tendency for eyewitnesses to focus their attention on any weapon present at the scene of a crime, thereby limiting their ability to remember other details of the crime scene, such as the perpetrator’s face.

**weapons effect** increased hostility or a heightened inclination to aggression produced by the mere sight of a weapon. If provoked, individuals who have previously been shown a weapon will behave more aggressively than will those who have not. Subsequent research has indicated that this aggressive behavior is primed by the sight or suggestion of weapons (see PRIMING) and that any other object associated with aggression can have the same effect. [identified in 1967 by U.S. psychologists Leonard Berkowitz (1926– ) and Anthony LePage]

**wear-and-tear theory of aging** a theory of biological aging suggesting that aging results from an accumulation of damage to cells, tissues, and organs in the body caused by dietary toxins and environmental agents. This leads to the weakening and eventual death of the cells, tissues, and organs.

**Weber–Fechner law** see FECHNER’S LAW. [Ernst Heinrich WEBER; Gustav Theodor FECHNER]

**Weber fraction** the ratio of the just noticeable difference (see DIFFERENCE THRESHOLD) to the intensity of a stimulus. Increases in the intensity of a stimulus that are just noticeably different to the observer are a constant fraction of the stimulus intensity. The size of the Weber fraction varies as a function of stimulus condition and sense modalities. See WEBER’S LAW. [Ernst Heinrich WEBER]

**Weber’s law** a mathematical model of the DIFFERENCE THRESHOLD stating that the magnitude needed to detect physical change in a stimulus is proportional to the absolute magnitude of that stimulus. Thus, the more intense the stimulus, the greater the change that must be made in it to be noticed. This can be expressed as  $\Delta I/I = k$ , where  $\Delta I$  is the difference threshold,  $I$  is the original stimulus magnitude, and  $k$  is a constant called WEBER’S FRACTION. See also FECHNER’S LAW. [proposed in 1834 by Ernst Heinrich WEBER]

**Wechsler Adult Intelligence Scale (WAIS)** an intelligence test for individuals 16 to 90 years of age. The WAIS was originally published in 1955 (revised in 1981) as a modification of and replacement for the **Wechsler-Bellevue Intelligence Scale (WBIS, 1939)**, which consisted of subtests that yielded separate verbal and performance IQs as well as an overall IQ. The third edition (**WAIS-III, 1997**) included seven verbal subtests (Information, Comprehension, Arithmetic, Similarities, Digit Span, Vocabulary, Letter-Number Sequencing) and seven performance subtests (Digit Symbol, Picture Completion, Block Design, Picture Arrangement, Object Assembly, Matrix Reasoning, Symbol Search). Depending on the specific combination of subtests administered, the test yielded a Verbal Comprehension, a Perceptual Organization, a Processing Speed, and a Working Memory index score; a Verbal IQ, a Performance IQ, and a Full Scale IQ with a mean of 100 and a standard deviation of 15; or both index scores and IQs. The current version, **WAIS-IV (2008)**, retains most of the subtests of the WAIS-III but has modified some and added three new ones (Visual Puzzles, Figure Weights, and Cancellation). Its core battery of 10 subtests yields a Full Scale IQ and index scores on the same four domains of cognitive ability (verbal comprehension, perceptual organization, processing speed, and working memory). [David WECHSLER]

**Wechsler Intelligence Scale for Children (WISC)** an intelligence test developed initially in 1949 and standardized for children of ages 6 years to 16 years 11 months. It currently includes 10 core subtests (Similarities, Vocabulary, Comprehension, Block Design, Picture Concepts, Matrix Reasoning, Digit Span, Letter-Number Sequencing, Coding, Symbol Search) and five supplemental subtests (Word Reasoning, Information, Picture Completion, Arithmetic, Cancellation) that measure verbal comprehension, perceptual reasoning, processing speed, and working memory capabilities, yielding index scores for each as well as a Full Scale IQ with a mean of 100 and a standard deviation of 15. The most recent version of the test is the **WISC-IV**, published in 2003. [David WECHSLER]

**Wechsler Memory Scale (WMS)** a collection of tests that assesses different memory functions in individuals 16 to 90 years old. It has undergone several revisions since its original publication in 1945, including the **Wechsler Memory Scale-Revised (WMS-R, 1987)**; the **WMS-III (1997)**; and the most current version, the **WMS-IV (2009)**. The latter's standard battery measures an individual's memory performance on seven subtests and yields scores on five indexes: Immediate Memory, Delayed Memory, Visual Memory, Visual Working Memory, and Auditory Memory. [David WECHSLER]

**Wechsler Preschool and Primary Scale of Intelligence (WPPSI)** an intelligence test for children ages 2 years 6 months to 7 years 7 months that currently includes two working memory subtests (Picture Memory and Zoo Locations), three processing speed subtests (Bug Search, Cancellation, and Animal Coding), six verbal comprehension subtests (Information, Vocabulary, Receptive Vocabulary, Similarities, Comprehension, Picture Naming), two visual-spatial subtests (Block Design, Object Assembly), and two fluid reasoning subtests (Matrix Reasoning, Picture Concepts). These subtests yield Full Scale IQs, primary index scores, ancillary index scores, and scaled subtest scores. The WPPSI was originally published in 1967; the most recent version is the **WPPSI-IV**, published in 2012. [David WECHSLER]

**Wednesday Evening Society** an informal group of Sigmund FREUD's disciples who met with him for instruction in psychoanalysis, beginning in 1902. The society evolved into the larger **Vienna Psychoanalytic Society** in 1910. See also VIENNESE SCHOOL.

**weekend alcoholic** a person who drinks alcohol to intoxication during weekends but drinks little or not at all during the week. See also BINGE DRINKING.

**weekend hospitalization** a form of PARTIAL HOSPITALIZATION in which psychiatric patients function in the community during the week but spend the weekend in the hospital.

**we-group** *n.* see INGROUP.

**weight** *n.* **1.** heaviness: the extent of downward gravitational force exerted on an object or body. **2.** a coefficient or multiplier used in an equation or statistical investigation and applied to a particular variable to reflect the contribution to the data. For example, a **weighted sample** is one in which different values are applied to its different constituent subgroups to reflect their representation within the larger population from which it was taken. Thus, if a population is 50% male and 50% female but the sample studied is 40% and 60%, respectively, different multipliers could be used to adjust the individual subsample results to match the makeup of the population. Similarly, a **weighted least squares regression** is a version of ordinary LEAST SQUARES REGRESSION in which different variables contribute differentially to the analysis process according to their relative importance. See WEIGHTING.

**weight discrimination** the ability to distinguish differences in weight among stimuli.

**weighted application blank (WAB)** in PERSONNEL SELECTION, a scored form used to obtain and evaluate BIOGRAPHICAL DATA on a candidate for employment. The applicant's response to each question on the form is scored according to both (a) the answer given and (b) the relative importance of the question as a means of differentiating between suitable and unsuitable candidates. Compare STANDARD APPLICATION BLANK.

**weighted average** an average calculated to take into account the relative importance of the items making up the average: Different values or WEIGHTS are assigned to different data points to reflect their relative contribution. For example, in examining grade-point average, one might give grades A through F the weights of 4, 3, 2, 1, and 0, respectively. One would multiply the number of A grades a student obtained by 4, the number of B grades by 3, and so forth and then divide the resulting sum by the total number of grades to obtain the student's overall weighted average. Also called **weighted mean**.

**weighted kappa** an index of interrater agreement that takes into account the degree of disparity between the categorizations assigned by different observers. Thus, different levels of agreement contribute more or less heavily to the overall value of kappa than others. For example, if two raters differ by two categories, that difference is assigned more importance (i.e., given a greater WEIGHT) in the analysis than if they differ only by one category. See also COHEN'S KAPPA.

**weighted mean** see WEIGHTED AVERAGE.

**weighted multidimensional scaling (WMDS)** see INDIVIDUAL-DIFFERENCES SCALING.

**weighting** *n.* the process of multiplying test items, subtests, tests that are part of a test battery, or other measures that are components of a total score by a value or WEIGHT other than 1. If all components were to be weighted by 1, the result would be **equal weighting**, which is essentially no weighting.

**weight regulation** a process, governed by a complex array of neural mechanisms and structures (including the hypothalamus), in which the brain seeks an optimum balance between an organism's food intake and energy expenditure after a certain body weight is achieved. A number of other factors, such as environmental stimuli, may influence the process as well.

**Weight Watchers** a widely available weight loss and control program that includes aspects of both SUPPORT GROUPS and SELF-HELP GROUPS.

**Weismannism** *n.* see GERM PLASM. [August Weismann (1834–1914), German cytologist]

**well-being** *n.* a state of happiness and contentment, with low levels of distress, overall good physical and mental health and outlook, or good quality of life.

**Wellbutrin** *n.* a trade name for BUPROPION.

**wellness** *n.* a dynamic state of physical, mental, and social WELL-BEING. Some researchers and clinicians have viewed wellness as the result of four key factors over which an individual has some control: biology (i.e., body condition and fitness), environment, lifestyle, and health care management. The **wellness concept** is the notion that individual health care and health care programs should actively involve the promotion of good mental and physical health rather than being concerned merely with the prevention and treatment of illness and disease.

**wellness program** a health care program emphasizing the WELLNESS concept.

**Welsh Figure Preference Test (WFPT)** a nonverbal personality assessment in which participants indicate *like* or *dislike* for each of 400 black-and-white figures varying in complexity from simple line drawings of geometric figures to detailed, multiline abstractions. Initially designed to diagnose psychiatric disorders, the WFPT currently includes several scales intended to measure a variety of constructs, both pathological (e.g., anxiety, repression) and nonpathological (e.g., creativity, originality). See also BARON-WELSH ART SCALE. [originally developed in 1949 by George S. Welsh (1918–1990), U.S. psychologist]

**Weltanschauung** *n.* any fundamental understanding of the universe and of humankind's place within it held by a person, a culture, or a subculture (German, "world-view"). Such a worldview will be influential in the material development of a culture, as well as in those theories and philosophies that a culture may produce. It establishes the UNIVERSE OF DISCOURSE that prevails among its adherents, affecting their practical attitudes and behaviors as well as their theoretical commitments.

**Werdnig–Hoffmann disease** see SPINAL MUSCULAR ATROPHY. [Guido Werdnig (1862–1919), Austrian neurologist; Johann Hoffmann (1857–1919), German neurologist]

**Werner syndrome** see AGING DISORDER. [Carl Otto Werner (1879–1936), German physician]

**Wernicke–Geschwind model** an early theory of speech that integrated the roles of the receptive language

cortex (WERNICKE'S AREA) and the language production cortex (BROCA'S AREA). Also called **Wernicke's theory**. [first suggested in 1874 by Karl Wernicke (1848–1905), German neurologist; revived and then extended by Norman Geschwind (1926–1984), U.S. neuroscientist]

**Wernicke–Korsakoff syndrome** a syndrome resulting from chronic alcoholism or nutritional insufficiency, associated with deficiency of vitamin B<sub>1</sub> (thiamine). The syndrome is characterized by an acute confusional stage, ATAXIA, and oculomotor problems (see WERNICKE'S ENCEPHALOPATHY), followed by chronic changes in mental status and memory (see KORSAKOFF'S SYNDROME). Lesions are centered in the midbrain, cerebellum, and DIENCEPHALON. [Karl Wernicke; Sergei S. Korsakoff (1854–1900), Russian psychiatrist]

**Wernicke's aphasia** loss of the ability to comprehend sounds or speech, in particular to understand or repeat spoken language and to name objects or qualities (see ANOMIA). It is a fluent APHASIA in which speech output is typically distorted, incorrect, or inappropriate (see PARAPHASIA). The condition is a result of brain damage, typically in the left posterior lateral temporal lobe, and may be associated with other disorders of communication, including ALEXIA, ACALCULIA, or AGRAPHIA. Also called **cortical sensory aphasia**; **receptive aphasia**; **sensory aphasia**. [Karl Wernicke]

**Wernicke's area** a region toward the back of the superior temporal gyrus of the left hemisphere of the cerebrum containing nerve tissue associated with the interpretation of sounds. Also called **Wernicke's speech area**. See also SPEECH AREA. [Karl Wernicke, who reported, in 1874, a lack of comprehension of speech in patients who had a brain lesion in that area]

**Wernicke's encephalopathy** a neurological disorder caused by a deficiency of vitamin B<sub>1</sub> (thiamine). The principal symptoms are confusion, oculomotor abnormalities (GAZE PALSY and NYSTAGMUS), and ataxia. The disorder is most frequently associated with chronic alcoholism but is also found in cases of pernicious anemia, gastric cancer, and malnutrition. These symptoms are likely to resolve with thiamine treatment, although most individuals then develop severe retrograde and anterograde AMNESIA as well as impairment in other areas of cognitive functioning, including executive functions (see KORSAKOFF'S SYNDROME). Also called **cerebral beriberi**; **Wernicke's disease**. [first described in 1881 by Karl Wernicke]

**Werther syndrome** a CLUSTER SUICIDE induced by the suicide of a well-known or popular role model whose death is given extensive coverage by the media. The phenomenon is named for the first identified instance of media-triggered suicide, which occurred in 1774 following the publication of the novel *Die Leiden des jungen Werthers* (The Sorrows of Young Werther) by Johann Wolfgang von Goethe (1749–1832). The book triggered a fad, in that many young men of the time imitated the eccentric style of dress of the book's hero, Werther, by dressing in blue and yellow. Some young men also killed themselves in the same way Werther did in the novel, causing the book to be banned in some communities.

**Wessex Head Injury Matrix (WHIM)** see VEGETATIVE STATE.

**Westermarck effect** the proposal that people who grow up together in the same household do not find one another sexually attractive later in life. It is based on the

observation that people who had extensive contact with one another as children rarely ever married, despite being available as mates. [Edward **Westermarck** (1862–1939), Finnish anthropologist]

**Western Aphasia Battery (WAB)** a test battery that evaluates numerous aspects of language—spontaneous speech, comprehension, repetition, naming, and so on—and is used to determine the severity and type of a language disturbance as well as to assess such skills as writing, reading, and calculation. The current version, **Western Aphasia Battery–Revised (WAB–R)**, was published in 2006. [developed by Canadian neurologist Andrew Kertesz (1935– )]

**Western blot** a method of detecting a particular protein molecule in a mixture (e.g., a sample from a tissue or organ). It involves separating the proteins with GEL ELECTROPHORESIS, blotting the separated proteins onto nitrocellulose, then using an isotopically labeled or enzyme-linked antibody to bind to and highlight the protein of interest. [named by analogy with SOUTHERN BLOT]

**wet dream** see NOCTURNAL EMISSION.

**wet-globe bulb temperature** a measure to account for effects of temperature and humidity and to monitor stress to prevent heat-related injuries or illnesses.

**wet nurse** a lactating woman who nurses an infant other than her own.

**Wever–Bray effect** see COCHLEAR MICROPHONIC. [Ernest Glen **WEVER**, U.S. psychologist; Charles W. **Bray** (1904–1982), U.S. otologist]

**WF** abbreviation for WORD FLUENCY.

**WFPT** abbreviation for WELSH FIGURE PREFERENCE TEST.

**WGTA** abbreviation for WISCONSIN GENERAL TEST APPARATUS.

**what pathway** see VENTRAL STREAM.

**wheelchair** *n.* a chair with wheels designed to increase the mobility of individuals unable to walk. One of the oldest ASSISTIVE TECHNOLOGY devices, wheelchairs may be manually driven (i.e., self-propelled by the individual in the chair, who manually turns the wheels, or pushed by an assisting individual from behind) or motorized (battery powered).

**wheelchair sport** a type of recreational or rehabilitative activity in which individuals with physical disabilities who use wheelchairs participate in competitive individual and team sports.

**where pathway** see DORSAL STREAM.

**WHIM** acronym for Wessex Head Injury Matrix. See VEGETATIVE STATE.

**whiplash** *n.* a painful injury to the soft tissues of the neck, which can persist for months, resulting from a sudden change of motion of the body. This often occurs in car accidents in which the car is struck from behind, causing the head to be snapped back suddenly. Also called **cervical sprain syndrome**.

**Whipple's disease** see LIPODYSTROPHY. [George Hoyt **Whipple** (1878–1976), U.S. pathologist]

**whipsawing** *n.* **1.** increasing productivity by pairing two or more individuals or groups on a joint task, often with a competitive orientation. The term derives from the whipsaw, a type of saw with handles on both ends of the cutting

blade used by paired workers to saw large timbers. **2.** undermining the unity of employees (and their unions) by pitting them against one another in competitive work settings.

**whirl sensation** the sensation of spinning, mediated by the VESTIBULAR SYSTEM. See DIZZINESS; VERTIGO.

**whisker barrel** a barrel-shaped column of neurons in the SOMATOSENSORY AREA of some animals that receives information from a particular whisker.

**white blood cell** see LEUKOCYTE.

**white-collar crime** nonviolent, opportunistic criminal activities committed by people of high respectability and social status in the course of their jobs. Examples include fraud and embezzlement. [originally defined by U.S. sociologist Edwin Sutherland (1883–1950)]

**white-collar worker** an employee whose work involves very little or no physical labor, especially one in a salaried professional position. Such people have traditionally worked in an office environment. Compare BLUE-COLLAR WORKER; PINK-COLLAR WORKER.

**white commissure** a bundle of MYELINATED FIBERS, both sensory and motor, that crosses from one side of the spinal cord to the other, linking the ascending and descending columns of WHITE MATTER fibers on either side. It arches around the ventral median fissure of the spinal cord. Also called **anterior white commissure**; **ventral white commissure**.

**white light** **1.** light that is a mixture of all of the visible wavelengths in the spectrum. White light can also be produced by a mixture of three single wavelengths of appropriate intensity (i.e., the PRIMARY COLORS). **2.** a brilliant light reported to be experienced by some people when dying or undergoing NEAR-DEATH EXPERIENCES.

**white matter** parts of the nervous system composed of nerve fibers that are enclosed in a MYELIN SHEATH, which gives a white coloration to otherwise grayish neural structures. The sheaths cover only the fibers, so regions containing mainly CELL BODIES are gray. Compare GRAY MATTER.

**whiteness constancy** the tendency to perceive white surfaces as having the same brightness even when lighting changes are made. See also PERCEPTUAL CONSTANCY; BRIGHTNESS CONSTANCY.

**white noise** see NOISE.

**whiteout syndrome** a psychosis occurring in individuals (e.g., arctic explorers and mountaineers) who are exposed to the same white, impoverished environment for long periods of time.

**white rami communicantes** the MYELINATED FIBERS of the preganglionic branches running from SPINAL ROOTS to ganglia of the SYMPATHETIC CHAIN in the thoracic and upper two lumbar segments.

**whitiko** *n.* see WINDIGO PSYCHOSIS.

**Whitten effect** the effect of CHEMICAL COMMUNICATION in inducing ovulation. In some rodent species, females ovulate when exposed to odors or scents from adult males. Other effects of chemical signals on reproduction include the BRUCE EFFECT and the LEE–BOOT EFFECT. See also VANDENBERGH EFFECT. [Wesley K. **Whitten** (1918–2010), Australian reproductive physiologist]

**WHO** abbreviation for WORLD HEALTH ORGANIZATION.



**whole-channel** *adj.* denoting or relating to an approach to teaching in which information is taught using methods that engage all of the possible senses.

**whole-interval recording** a strategy for observing behavior that provides information about the specific timing and duration of the behavior. In whole-interval recording, the length of an observation session is identified (e.g., 1 hour) and then broken down into smaller, equal-length time periods (e.g., 10-minute intervals). An observer then records whether the behavior of interest occurs throughout an entire interval, counts the total number of intervals in which the behavior was present, and calculates what percentage of intervals that number represents. See also PARTIAL-INTERVAL RECORDING.

**whole-language approach** a top-down approach to teaching reading that emphasizes the reader's active construction of meaning and often excludes the use of phonics.

**whole method of learning** a learning technique in which the entire block of material is memorized, as opposed to learning the material in parts. Compare PART METHOD OF LEARNING.

**whole object assumption** in language development, the tendency of children to suppose that a novel label refers to a whole object rather than to its parts, properties, or attributes. For example, if an adult points in the general direction of an object and uses a novel label for it, a child will assume that the whole object is the referent of the label. Compare MUTUAL EXCLUSIVITY ASSUMPTION; TAXONOMIC ASSUMPTION.

**whole report** a method used in studies of ICONIC MEMORY in which the participant attempts to recall all of the presented information. Compare PARTIAL REPORT.

**whole-word method** a widely used method of language and reading instruction based on the idea that students should grasp the meaning of entire words at a time and use complete words when they talk, without focusing on the individual sounds that make up those words. This method is based on learning strategies originally used to teach deaf children to read, although current findings show that such children actually use phonetics for learning and practicing sign language. Also called **look-say**; **sight method**. Compare PHONICS. [developed by U.S. educator and cleric Thomas H. Gallaudet (1787–1851)]

**whooping cough** a highly contagious bacterial infection that affects the respiratory tract from the nasopharynx to the bronchioles. It is characterized by spasmodic coughing that commonly ends in a prolonged high-pitched whooping inspiration. Complications can include brain hemorrhage, convulsions, ANOXIA, and damage to vision and hearing. Also called **pertussis**.

**Whorfian hypothesis** see LINGUISTIC DETERMINISM. [Benjamin Lee **Whorf** (1897–1941), U.S. linguist]

**WHO (10) Well-Being Index** a 10-item questionnaire, commissioned by the World Health Organization, that includes negative and positive aspects of well-being in a single unidimensional scale. The index has been used to examine well-being in patients experiencing chronic diseases.

**Wh- question** a question that begins with *Who*, *What*, *Where*, *When*, or *How*.

**Wicca** *n.* see WITCHCRAFT.

**Wide Range Achievement Test (WRAT)** a standard assessment tool used to obtain a quick, accurate assessment of reading, spelling, and arithmetic skills. The most recent version, the **Wide Range Achievement Test–Fourth Edition (WRAT-4)**, was published in 2006 for use with children, adolescents, and adults in determining skill deficits as well as appropriate levels of instruction; it can be one component in identifying a learning disability. The **Wide Range Achievement Test–Expanded Edition (WRAT–Expanded)**, published in 2001, is designed to measure academic achievement in children and adolescents. [originally developed in 1936 by Polish-born U.S. psychologist Joseph F. Jastak (1901–1979)]

**wide-range test** a brief screening instrument administered to gauge ability quickly and determine if a more comprehensive test is needed. Its items vary widely in difficulty so as to measure performance at very broad levels. For example, a wide-range test of vocabulary given to ninth-grade students might include simple words typically known by elementary-school students as well as complex words generally familiar only to college students.

**Widow-to-Widow Program** a peer support program focusing on bereavement, grief, and mourning in individuals who have lost a spouse. The program draws on the experience and compassion of people who have suffered similar losses, providing support as an alternative or complementary approach to professional GRIEF COUNSELING and therapy and to medical management. U.S. social worker Phyllis R. Silverman started the Widow-to-Widow Program in 1964; it is thought to be the first of its kind and has served as a model for many subsequent organizations.

**Wiedemann syndrome** see PROTEUS SYNDROME. [Hans Rudolf **Wiedemann** (1915–2006), German pediatrician]

**Wiener Schule** see VIENNESE SCHOOL.

**wife beating** see BATTERED WOMEN.

**wife swapping** see PARTNER SWAPPING.

**wihtigo (wihtiko)** *n.* see WINDIGO PSYCHOSIS.

**Wilcoxon–Mann–Whitney test** a NONPARAMETRIC TEST, used when data are rank ordered, to determine whether two INDEPENDENT SAMPLES have been drawn from the same population, on the basis of a comparison of their median values. It combines the MANN–WHITNEY U TEST and WILCOXON RANK-SUM TEST into a single statistical procedure. [Frank **Wilcoxon** (1892–1965), Irish-born U.S. statistician; Henry Berthold **Mann** (1905–2000), Austrian-born U.S. mathematician; Donald Ransom **Whitney** (1915–2001), U.S. statistician]

**Wilcoxon rank-sum test** a statistical test of centrality for ranked data that compares the median values of two INDEPENDENT SAMPLES to determine whether they have been drawn from the same population. In this NONPARAMETRIC equivalent of the T TEST, one combines the data points from the different groups into a single pool and ranks their values in ascending order. The ranks that have been assigned are, in turn, used to determine the test statistic, *W*, which is evaluated for statistical significance. The calculations involved in the Wilcoxon rank-sum test are nearly identical to those for the MANN–WHITNEY U TEST. [Frank **Wilcoxon**]

**Wilcoxon signed-ranks test** a NONPARAMETRIC statistical procedure used to determine whether a single sample

is derived from a population in which the median equals a specified value. The data are values obtained using a RATIO SCALE, each is subtracted from the hypothesized value of the population median, and the difference scores are then ranked. The test takes into account the direction of the differences and gives more weight to large differences than to small differences. The symbol for the test statistic is *T*. Also called **Wilcoxon *T* test**. [Frank Wilcoxon]

**wild boy of Aveyron** a supposed feral child found, at about age 12, living in the woods near Aveyron in southern France around 1800 and studied by French physician Jean-Marc-Gaspard ITARD. The boy, whom Itard named Victor, could utter speech sounds but not words, rocked when seated, trotted when upright, and had a limited attention span; on the basis of these signs, it has recently been suggested that Victor was autistic. Itard devised an intensive educational program, including sensory stimulation and repetitive physical exercises, to teach Victor social awareness, speech comprehension, and literacy. Although the results of this endeavor were disappointing—after 5 years, Victor was able to speak, read, and write only some words and phrases and was marginally socialized—Itard's effort is considered an important early development in the SPECIAL EDUCATION of children with intellectual and developmental disabilities. Itard's influence was subsequently advanced through the work of his student, Édouard SÉGUIN, and Maria MONTESSORI's approach to the education of all children was founded in part on the methods introduced by both men. Victor himself became the subject of numerous books and articles, beginning with work published by Itard in 1801 and 1807 and extending to present-day literature by both scholars and popular writers alike. His life and education with Itard have also been dramatized on film and television. Victor died in Paris in 1828. See also WOLF CHILDREN.

**wilderness experience** a group program in which demanding outdoor expeditions are undertaken for extended periods to foster enhanced self-efficacy, motivation, and social skills in the participants. The approach has been used, for example, in wilderness camps for children and adolescents with various behavioral problems, including alcohol and drug use. It has become controversial, however, amid reports of participant abuse, some of it fatal, that occurred at unregulated camps with largely untrained and unsupervised staff.

**Wildervanck syndrome** a genetic disorder associated with KLIPPEL-FEIL SYNDROME and characterized by deafness and paralysis of the abducens nerve. The cause is unknown, but because it is seen almost exclusively in females, an X-linked dominant inheritance is suspected. [reported in 1952 by L. S. Wildervanck, Dutch geneticist]

**Wilks's lambda** (symbol:  $\Lambda$ ) a statistic used in the MULTIVARIATE ANALYSIS OF VARIANCE to determine whether there are significant differences between the means of groups on a combination of DEPENDENT VARIABLES. It may be converted to an *F* RATIO to obtain a SIGNIFICANCE LEVEL or be used to calculate ETA SQUARED, which is a measure of the proportion of variance in the combination of dependent variables that is explained by the INDEPENDENT VARIABLE. [Samuel Stanley Wilks (1906–1964), U.S. mathematician]

**will** *n.* 1. the capacity or faculty by which a human being is able to make choices and determine his or her own behaviors in spite of influences external to the person. See

FREE WILL; VOLITION. 2. a determined and persistent purpose or intent.

**will disturbance** a deficiency or lack of willpower identified by Eugen BLEULER as a basic symptom of schizophrenia. The person may appear apathetic and lacking in objectives and motivation. Another form of will disturbance is characterized by a high degree of activity that is trivial, inappropriate, or purposeless.

**will-do factors** factors contributing to an employee's performance in a job that are attributable to his or her motivation rather than to his or her knowledge and abilities (**can-do factors**).

**Wille zur Macht** see WILL TO POWER.

**Williams syndrome (Williams–Barratt syndrome; Williams–Beuren syndrome)** a rare autosomal dominant disorder caused by deletion of a segment of chromosome 7. In addition to the symptom of mild to moderate intellectual disability, it is characterized by FAILURE TO THRIVE, high concentrations of calcium in the blood, narrowing of blood vessels (particularly the aorta, which restricts blood flow from the heart), and unusual facial features (e.g., short nose with a broad tip, wide mouth, small chin). Individuals with Williams syndrome are highly sociable and, although their ability to perform visual–spatial tasks is typically impaired, their verbal skills are superior. Most cases are not inherited but occur randomly during the development of reproductive cells (eggs or sperm) in a parent of an affected individual. [described in the 1960s by J. C. P. Williams, 20th-century New Zealand cardiologist; Brian Gerald Barratt-Boyes (1924–2006), New Zealand cardiologist; and Alois J. Beuren (1919–1984), German cardiologist]

**Williams v. Florida** an influential 1970 U.S. Supreme Court ruling that juries of fewer than 12 people are constitutionally permissible. The court indicated that although the size of a jury is an important factor in its effectiveness, juries having as few as six members could function as effectively as juries of 12 members. This ruling was also notable for upholding the notion that in a criminal trial, the Fifth Amendment does not allow the defendant to refuse to provide to the prosecution details about his or her alibi witnesses.

**Willie M. class action** a class action lawsuit in North Carolina, settled out of court in 1979, that established a special class of children ages 18 years and younger as mandated service recipients of appropriate treatment programs and education if they have emotional, mental, or neurological disabilities and a history of violent or assaultive behavior.

**Willowbrook Consent Judgment** a landmark agreement in 1975 between agencies, parents, and friends of the court (the plaintiffs) and New York State (the defendant), detailing the rights of people with intellectual disabilities who lived at the Willowbrook State School in Staten Island, New York, for several years. It set out standards for the residents' living environment, evaluation of services, personnel, education, recreation, food and nutrition services, dental services, psychological services, physical therapy services, speech and audiology services, medical and nursing services, safety procedures, treatment and medication, building maintenance, emergencies, records, and movement to community settings. Willowbrook State School was later renamed Staten Island Development-

tal Center; it closed during the 1980s. Also called **Willowbrook Consent Decree**.

**willpower** *n.* the ability to carry out one's intentions. See SELF-CONTROL.

**will psychology** see ACTION THEORY.

**will therapy** a form of psychotherapy based on the theory that neuroses can be avoided or overcome by asserting the will (or "counterwill") and by achieving independence. According to this theory, will is central to personality formation and to the struggle to separate oneself from the mother psychologically, just as one is physically separated from her during birth. Also called **Rankian therapy**. See also BIRTH TRAUMA. [developed by Austrian psychoanalyst Otto Rank (1884–1939)]

**will to live** see WILL TO SURVIVE.

**will to meaning** the need to find a suitable meaning and purpose for one's life. Will to meaning is the basis and fundamental motivation of LOGOTHERAPY, a technique for addressing problems related to the experience of MEANINGLESSNESS. See EXISTENTIAL VACUUM.

**will to power** **1.** in the individual psychology of Alfred ADLER, the determination to strive for superiority and domination, which he believed to be particularly strong in men who feel a need to escape the feelings of insecurity and inferiority that they associate with femininity. **2.** in the thought of Friedrich NIETZSCHE, the determination to affirm oneself through courage, strength, and pride, which necessitates casting off the "slave morality" of Christianity, democracy, and false compassion. The will to power is the motive principle of the SUPERMAN. Also called **Wille zur Macht**.

**will to survive** the determination to live in spite of an adverse situation (e.g., a severe illness or disabling disorder) or extreme conditions (e.g., lack of food and water or long-term or harsh imprisonment). Also called **will to live**.

**windigo psychosis** a severe CULTURE-BOUND SYNDROME occurring among northern Algonquin Indians living in Canada and the northeastern United States. The syndrome is characterized by delusions of becoming possessed by a flesh-eating monster (the windigo) and is manifested in symptoms including depression, violence, a compulsive desire for human flesh, and sometimes actual cannibalism. The psychosis is also known by numerous variant names and spellings, among them **whitiko**, **wihtigo**, **wihtiko**, **witigo**, **witiko**, and **wittigo**.

**windmill illusion** an illusion of motion of rotating objects, such as windmills and automobile wheels, which appear to reverse direction intermittently.

**wind tunnel** a structure designed as a corridor through which air can be blown at controlled velocities and patterns of turbulence. Wind tunnels are mainly used to test the performance of aircraft or other objects or materials in a simulated outdoor environment. They may also be used in experiments to study the effects of wind or changing air pressures on the performance or behavior of humans or nonhuman animals. See also AIR-PRESSURE EFFECTS.

**winkte** *n.* see TWO-SPIRIT.

**win-lose dynamic** the conflict-promoting processes that occur in situations in which COMPETITIVE REWARD STRUCTURES cause participants to feel they can only succeed if others fail.

**winner effect** in many species, the increased likelihood that an individual will win aggressive encounters as a result of having won previous encounters. The winner effect may be associated with increased levels of testosterone. Compare LOSER EFFECT.

**Winsorized mean** a measure of CENTRAL TENDENCY that is less sensitive to OUTLIERS than is a standard mean. To obtain a Winsorized mean, one replaces the highest and lowest values from a set of data with less extreme values, sums the values in the modified set, and calculates the average. [Charles P. Winsor (1895–1951), U.S. statistician]

**Winsorizing** *n.* an IMPUTATION strategy, intended to reduce the influence of OUTLIERS, in which extreme values in a data set are replaced with the highest and lowest remaining values before any calculations are performed. Typically, an equal number of high and low values are replaced, representing 10% to 25% of the total distribution. [Charles P. Winsor]

**win-stay, lose-shift strategy** in discrimination learning, a mental or behavioral strategy in which an organism continues to give the same response as long as it is being rewarded for doing so but changes the response once it is no longer being rewarded. The opposite **win-shift, lose-stay strategy** may also be seen: An organism changes responses when rewarded and maintains the response when not rewarded.

**wireless** *adj.* denoting or relating to communication (e.g., radio, broadcast television, Internet) without the use of wires to connect the communicating sites. Wireless communication is used both for very long-range transmission (as with communication satellites) and for very short-range transmission (to connect computers within the same building or neighborhood).

**WISC** abbreviation for WECHSLER INTELLIGENCE SCALE FOR CHILDREN.

**Wisconsin Card Sorting Test (WCST)** a test that requires participants to deduce from feedback (right vs. wrong) how to sort a series of cards depicting different geometric shapes in various colors and quantities. Once the participant has identified the underlying sorting principle (e.g., by color) and correctly sorts 10 consecutive cards, the principle is changed without notification. Although the task involves many aspects of brain function, it is primarily considered a test of EXECUTIVE FUNCTIONS, particularly abstract reasoning and cognitive flexibility in response to external changes. [originally developed in 1948 by U.S. psychologists David A. Grant (1916–1977) and Esta A. Berg]

**Wisconsin General Test Apparatus (WGTA)** an apparatus used to study primate learning that consists of a tray on which various objects can be placed and a movable partition over the tray separating the animal from the experimenter. A small piece of food is hidden beneath one of the objects, and the animal must displace that object to obtain the food reward. This basic design has been modified to create a number of learning tasks of varying complexity. [developed by Harry HARLOW]

**wisdom** *n.* the ability of an individual to make sound decisions, to find the right—or at least good—answers to difficult and important life questions, and to give advice about the complex problems of everyday life and interpersonal relationships. The role of knowledge and life experience and the importance of applying knowledge toward a com-

mon good through balancing one's own, others', and institutional interests are two perspectives that have received significant psychological study.

**wisdom of crowds** the gain in accuracy achieved when many individuals' estimates are averaged. The phenomenon was first identified by Francis GALTON after he examined the responses of contestants attempting to judge the weight of an ox; the average of all of these independent estimates was more accurate than were the individual estimates of experts.

**wish** *n.* **1.** in classical psychoanalytic theory, the psychological manifestation of a biological INSTINCT that operates on a conscious or unconscious level. **2.** in general language, any desire or longing.

**wish fulfillment** in psychoanalytic theory, the gratification, in fantasy or in a dream, of a wish.

**wishful thinking** a thought process in which one interprets a fact or reality according to what one wishes or desires it to be.

**wit** *n.* **1.** a mental function consisting of the ability to make amusing, incisive comments that throw light on a subject or person. **2.** in psychoanalysis, a verbal retort, jibe, or pun that suddenly and strikingly releases a repressed or hidden feeling or attitude. —**witty** *adj.*

**witchcraft** *n.* **1.** the supposed use of magical powers and practices, particularly to cause harm to other people or their property, including crops and livestock. In Christian countries, witches were believed to derive their powers from a pact with the devil, whom they worshipped in orgiastic rites known as witches' sabbaths. Such beliefs led to outbreaks of fanatical persecution in the 16th and 17th centuries (so-called witch hysteria or witch mania), in which the great majority of the victims were women (especially poor, old, and illiterate women). Belief in the power of witchcraft remains prevalent in many traditional societies (notably in Africa). **2.** a neopagan religion revolving around reverence for nature and goddess worship. Also called **Wicca**.

**witch doctor** in many traditional societies, a person believed to possess magical powers who uses these chiefly to cure sickness and protect people from the WITCHCRAFT of others. See also SHAMAN.

**withdrawal** *n.* see SUBSTANCE WITHDRAWAL.

**withdrawal design** an experimental design in which the treatment or other intervention is removed during one or more periods. A typical withdrawal design consists of three phases: an initial condition for obtaining a baseline, a condition in which the treatment is applied, and another baseline condition in which the treatment has been withdrawn. Often, the baseline condition is represented by the letter A and the treatment condition by the letter B, such that this type of withdrawal design is known as an A-B-A DESIGN. A fourth phase of reapplying the intervention may be added, as well as a fifth phase of removing the intervention, to determine whether the effect of the intervention can be reproduced.

**withdrawal-destructiveness** *n.* in the psychoanalysis of Erich FROMM, a style of relating based on withdrawal and isolation from others, destructive behavior directed toward others, or a combination of the two. Fromm held that this style of relating was motivated by a need to establish emotional distance arising from a fear of dependency.

**withdrawal dyskinesia** distortion of voluntary movements (see DYSKINESIA) associated with withdrawal from drugs or other substances.

**withdrawal reflex** a reflex that may be elicited by any painful stimulus or unexpected threat to the well-being of the individual. It is characterized by sudden movement away from the potentially damaging stimulus, which requires rapid coordination of neuromuscular units.

**withdrawing response** in behavioral psychology, any behavior designed to sever contact with a noxious stimulus. See also ESCAPE BEHAVIOR.

**withdrawn-rejected child** in sociometric measures of peer acceptance, a child who displays fearful or anxious behavior and is often perceived by peers as socially awkward. Such children are at risk for victimization by bullies. Compare AGGRESSIVE-REJECTED CHILD. See also SOCIOMETRIC STATUS.

**Witherspoon excludables** prospective jurors who so strongly oppose the death penalty that they are unwilling to consider it as a sentencing option and are therefore excludable from a DEATH-QUALIFIED JURY. The allusion is to the 1968 U.S. Supreme Court decision in *Witherspoon v. Illinois*. See also WAINWRIGHT V. WITT.

**within-dimension attitude consistency** the extent to which pieces of ATTITUDE-RELEVANT KNOWLEDGE related to a single underlying dimension (i.e., a distinct category of information) are evaluatively consistent with one another. If the information within each underlying dimension of the attitude is evaluatively consistent (e.g., all positive or all negative), within-dimension attitude consistency is high. However, this type of consistency does not necessarily imply that CROSS-DIMENSION ATTITUDE CONSISTENCY is high. For example, the information related to one dimension could be extremely positive and the information related to a second dimension could be extremely negative, resulting in high within-dimension consistency but low cross-dimension consistency. Likewise, high cross-dimension consistency does not necessarily imply high within-dimension consistency. See also AMBIVALENCE OF AN ATTITUDE; COMPLEXITY OF AN ATTITUDE.

**within-groups design** see WITHIN-SUBJECTS DESIGN.

**within-groups variance** variation in experimental scores among identically treated individuals within the same group who experienced the same experimental conditions. It is determined through an ANALYSIS OF VARIANCE and compared with the BETWEEN-GROUPS VARIANCE to obtain an F RATIO. Also called **within-subjects variance**.

**within-subjects analysis of variance** a variation of the standard ANALYSIS OF VARIANCE that is applied to data from a study in which the independent variable has multiple levels and each participant experiences each treatment level or is otherwise measured more than once (see WITHIN-SUBJECTS DESIGN). Because such designs involve recording multiple responses from the same person, it is necessary to examine how each individual varies in his or her responses, so as to separate such unique fluctuation from variation that is due to the influence of the treatment under investigation. For example, a researcher studying how amount of daily walking (e.g., none, 30 minutes, 60 minutes, 90 minutes) affects quality of sleep might have participants walk each length of time across consecutive weeks and then evaluate the results using a within-subjects analysis of variance. Also called **repeated measures**

**analysis of variance.** Compare BETWEEN-SUBJECTS ANALYSIS OF VARIANCE.

**within-subjects design** an experimental design in which the effects of treatments are seen through the comparison of scores of the same participant observed under all the treatment conditions. For example, teachers may want to give a pre- and postcourse survey of skills and attitudes to gauge how much both changed as a result of the course. Such a design could be analyzed with a DEPENDENT-SAMPLES T TEST, a WITHIN-SUBJECTS ANALYSIS OF VARIANCE, or an ANALYSIS OF COVARIANCE. Also called **related-measures design**; **repeated measures design**; **within-groups design**. Compare BETWEEN-SUBJECTS DESIGN.

**within-subjects factor** the independent variable under study in a WITHIN-SUBJECTS ANALYSIS OF VARIANCE. This variable has multiple levels to which each participant is exposed. For example, if a researcher is interested in job performance differences as a function of work shift length (e.g., 8 hours, 12 hours, 24 hours) and has each participant work each shift length during the study, then work shift length is a within-subjects factor. Also called **within-subjects variable**.

**within-subjects variance** see WITHIN-GROUPS VARIANCE.

**witigo (witiko; wittigo)** *n.* see WINDIGO PSYCHOSIS.

**Wittmaack-Ekbom syndrome** see EKBOM'S SYNDROME. [Theodor **Wittmaack** (1817–1873), German physician; Karl-Axel **Ekbom** (1907–1977), Swedish physician]

**Witzelsucht** *n.* a type of joking mania (German: “compulsive wisecracking”) that is characterized by a morbid desire to tell poor jokes and meaningless stories and that can be a symptom of damage to the frontal lobe of the brain. See also MORIA.

**WLM** abbreviation for WOMEN'S LIBERATION MOVEMENT.

**WMDS** abbreviation for weighted multidimensional scaling. See INDIVIDUAL-DIFFERENCES SCALING.

**WMS** abbreviation for WECHSLER MEMORY SCALE.

**wobble switch** an interface between a device and the user that is similar to a joystick. The switch is activated when the stick is pushed off-center in any direction and can therefore be activated by the gross body movements of users with physical disabilities.

**Wohlwill–Corino Andrade syndrome** see ANDRADE'S SYNDROME.

**wolf children** two girls, Amala and Kamala, who were reported to have been discovered in a wolves' den in India (in 1920) and who had adopted all of the major lupine life patterns, such as eating raw meat, howling in the night, and ambulating on all fours. When captured, they were approximately 18 months and 8 years old, respectively; Amala died within a year. Kamala lived until about age 17 (dying in 1929), having learned only minimal human behavioral skills, such as walking on two feet in a half-crouch, acquiring a very rudimentary vocabulary, wearing clothes, and running simple errands. The original account was always controversial and treated with some degree of skepticism. In 2007, a French surgeon, Serge Aroles, published a study that debunked much of the veracity of the source and some of the subsequent research. See also WILD BOY OF AVEYRON.

**Wolffian duct** a rudimentary duct system in the embryo

that develops into structures of the male reproductive system (the epididymis, vas deferens, and seminal vesicles). In the female, the Wolffian duct does not develop. Compare MÜLLERIAN DUCT. [Kaspar F. **Wolff** (1734–1794), German embryologist]

**Wolf–Hirschhorn syndrome** see CHROMOSOME 4, DELETION OF SHORT ARM. [first described in 1965 independently by Ulrich **Wolf**, German geneticist, and Kurt **Hirschhorn** (1926– ), Austrian-born U.S. pediatrician]

**Wolf Man** in the annals of psychoanalysis, a landmark case reported by Sigmund FREUD in 1918. It involved a conversion symptom (constipation), a phobia (for wolves and other animals), a religious obsession (piety alternating with blasphemous thoughts), and an appetite disturbance (anorexia), all of which proved to be reactions to early experiences. Freud saw this case as confirmation for his theory of infantile sexuality.

**Wolman's disease** a genetic metabolic disorder characterized by a deficiency of acid lipase, an enzyme needed to break down lipid molecules. The adrenal glands become enlarged and calcified. Psychomotor development in affected infants appears delayed, and intellectual disability may be present but difficult to document because of overriding effects of vomiting, diarrhea, and other signs of acute illness. Also called **primary familial xanthomatosis**. [Moshe **Wolman** (1914–2009), Polish-born Israeli pathologist]

**woman-centered psychology** an approach to psychology that emphasizes the physical, psychological, and social experiences that are particularly characteristic of women. See ENGENDERING PSYCHOLOGY; FEMINIST PSYCHOLOGY.

**womb envy** in psychoanalytic theory, the envy felt by some men for the reproductive capacity of women, regarded as an unconscious motive that leads them to denigrate women. See also VAGINA ENVY. [proposed by Karen D. HORNEY]

**womb fantasy** in psychoanalytic theory, the regressive FANTASY of returning to the womb or existing in the womb, usually expressed in symbolic form, such as living underwater or being alone in a cavern.

**women's liberation movement (WLM)** **1.** a SOCIAL MOVEMENT, derived from earlier women's social activism (e.g., the suffragist movement of the 19th and early 20th centuries), that came into existence in the late 1960s and campaigned for a wide range of feminist goals. These included the securing of (a) equal employment and educational opportunities through legislation and government policy; (b) freedom from male domination through social action against pornography and male violence toward women; and (c) the overthrow of racism, homophobia, and capitalism, which was regarded as essential to achieving gender equality. The movement comprised numerous local women's groups and benefited from an influx of women from the student movement, the anti-Vietnam War movement, and the Civil Rights movement. **2.** more generally, a movement among some women to free themselves from the sexual DOUBLE STANDARD; from total responsibility for child rearing and homemaking; and from the traditional stereotype of women as fragile, passive, dependent individuals who are governed by emotion rather than reason. See also FEMINISM; RADICAL FEMINISM.

**Women's Sexual Interest Diagnostic Interview**

**(WSID)** a structured clinical interview designed to diagnose HYPOACTIVE SEXUAL DESIRE DISORDER. Available in clinician-administered and self-report versions, the WSID consists of 39 items for evaluating signs of sexual dysfunction, such as lack of desire, arousal difficulties, inability to achieve orgasm, physical pain during intercourse, failure to find sex pleasurable, and personal distress associated with these signs. WSID was originally developed in 2008 by U.S. psychologist Leonard R. DeRogatis (1938– ); a short form (**WSID-SF**) was introduced in 2010.

**Woodcock-Johnson Psychoeducational Battery** an assessment, now in its third edition, that measures cognitive ability and academic achievement in children, young people, or adults. The tests of cognitive ability produce a full-scale intelligence score and determine strengths and weaknesses of information processing. The tests of academic achievement assess abilities in reading, written language, mathematics, and knowledge. They also assess basic skills in each of these areas and the level of application of those skills by the person being assessed. This battery is one of the main diagnostic tools used to evaluate a student for specific learning disabilities. Test results on the cognitive portion, when combined and compared with the results of the achievement portion, reveal the learning style of a student who may have a learning disability, documented by a statistically significant numerical difference between actual performance and cognitive potential. [developed in 1977 by Richard W. **Woodcock** (1928– ), U.S. psychologist, and his business partner Mary E. Bonner **Johnson**]

**wool-hwa-byung** *n.* see HWA-BYUNG.

**word approximation** a speech disturbance in which conventional words are used in unconventional or inappropriate ways (as in METONYMY), or new but understandable words are constructed out of ordinary words (e.g., *easyfy* for *simplify*).

**word-association test** a test in which the participant responds to a stimulus word with the first word that comes to mind. The technique was invented by Francis GALTON in 1879 for use in exploring individual differences, and Emil KRAEPELIN was the first to apply it to the study of abnormality. Carl JUNG and other psychoanalysts later adapted it for use as a PROJECTIVE TECHNIQUE.

**word attack** the method used to break down an unfamiliar word into its basic PHONEMES.

**word blindness** see ALEXIA.

**word count** a study of the rate of occurrence or the prevalence of specific words in a designated sample of spoken or written speech, such as in 50 children's books for third- and fourth-graders or in a particular presidential address.

**word deafness** see AUDITORY APHASIA.

**word fluency (WF)** the ability to list words rapidly in certain designated categories, such as words that begin with a particular letter of the alphabet. The ability is associated with a part of the brain anterior to BROCA'S AREA in the dominant frontal lobe. Individuals with lesions in that part of the brain are likely to experience word-fluency deficits in verbal tests and tasks. See also PRIMARY ABILITY.

**word-form dyslexia** see VISUAL WORD-FORM DYSLEXIA.

**word-fragment completion task** an indirect way of detecting memory for a word presented previously. A word fragment consists of some of the letters of the word with

blank spaces for deleted letters; the participant's task is to fill in the blanks. Word fragments are frequently used in tests of IMPLICIT MEMORY.

**word-frequency study** a study in which the frequency of to-be-remembered words is manipulated to investigate the effect of this variable on later memory. Typically, in studies of FREE RECALL, higher frequency words are better remembered, but in studies of RECOGNITION memory, lower frequency words are better remembered. See also FREQUENCY JUDGMENT.

**word-gustatory synesthesia** see SYNESTHESIA.

**word-length effect** in a test of MEMORY SPAN, the fact that one can usually remember a greater number of shorter words than longer words. Short-term retention is affected by the length of time it takes to rehearse the words.

**word of mouth** the unofficial channel of communication in which facts, opinions, rumors, and gossip are transmitted orally from person to person.

**word realism** see NOMINAL REALISM.

**word-recognition skills** the cluster of strategies that are used to recognize words in reading, including the instant recognition of SIGHT WORDS, the interpretation of CONTEXT CLUES, and the use of phonics and structural analysis.

**word-recognition threshold** in tests involving word recognition, the minimum amount of time that a word must be exposed for a person to identify it correctly.

**word salad** severely disorganized and virtually incomprehensible speech or writing, marked by severe LOOSENING OF ASSOCIATIONS strongly suggestive of schizophrenia. The person's associations appear to have little or no logical connection. Also called **jargon aphasia**. See also NEOLOGISTIC JARGON; SCHIZOPHRENIC THINKING.

**word-span test** a test of one's ability to remember a list of words in sequential order.

**word spurt** see NAMING EXPLOSION.

**word-stem completion** a procedure in which participants are presented with sets of introductory letters and asked to form complete words. For example, a person given the stem *ele\_\_* might respond with *elevate* or *elephant*. Numerous variations of this basic procedure exist, including ones in which only certain target words are considered correct and ones in which the complete words must fulfill certain additional criteria (e.g., be nouns, consist of five to seven letters in total) or must be provided from a previously studied list. Word-stem completion most commonly is used in cognitive research on perceptual PRIMING and IMPLICIT MEMORY. Also called **stem-completion task**. See also COMPLETION TEST.

**word-superiority effect (WSE)** the finding that, when presented briefly, individual letters are more easily identified in the context of a word than when presented alone. A similar but weaker effect is obtained when letters are presented as part of a pronounceable but meaningless vowel-consonant combination, such as *deet* or *pling*. Also called **Reicher-Wheeler effect**. See CONFIGURAL SUPERIORITY EFFECT; OBJECT-SUPERIORITY EFFECT. [first described in 1886 by James McKeen CATTELL and subsequently investigated by U.S. psychologists Gerald M. **Reicher** (1939– ) and Daniel D. **Wheeler** (1942– )]

**work** *n.* **1.** any physical, mental, or emotional activity directed toward accomplishing a task or transforming inputs in the form of physical materials, information, and other resources into goods or services. **2.** the tasks or duties involved in earning a livelihood. **3.** in physics, the product of a force and the distance through which its point of application moves, measured in joules. —**worker** *n.*

**workaholism** *n.* the compulsive need to work and to do so to an excessive degree. A **workaholic** is one who has trouble refraining from work. This type of driven overinvolvement in work is often a source of significant stress, interpersonal difficulties, and health problems. Also called **ergomania**.

**work ethic** an emphasis on the importance of work or other forms of effortful activity as a social, moral, and psychological good. Associated attitudes include individualism, competitiveness, and high personal expectations, with an emphasis on self-discipline, self-improvement, and deferred gratification. The term was introduced by German sociologist Max Weber (1864–1920), who drew a celebrated correlation between the emergence of such an ethic in 16th-century Protestant thought and the origins of European capitalism. Also called **Protestant work ethic**. See also **ACHIEVEMENT ETHIC**.

**work evaluation** see **EMPLOYEE EVALUATION**.

**workflow integration** the engineering of work tasks to provide a more efficient coordination of activities among employees involved in interdependent activities.

**work-for-pay unit** an inpatient or aftercare work facility constituting a component of a comprehensive rehabilitation program for patients with mental disorders. Such units offer prevocational screening and evaluation, vocational training, ego-strength assessment, and simple to complex work-related tasks, performed under supervision, for which patients receive payment. See **SHELTERED WORKSHOP**.

**work group** any group of people whose primary objective is to perform a set of assigned tasks. The degree to which this collection becomes a cohesive unit with a distinct identity determines whether a work group becomes a **TEAM**. See also **ACTION GROUP**; **TASK-ORIENTED GROUP**.

**working backward** a problem-solving strategy in which the solver begins at the goal state and attempts to find a path back to the problem's starting conditions. See also **BACKWARD SEARCH**.

**working forward** a problem-solving strategy in which the solver proceeds from the initial conditions to find a path to the desired goal state.

**working hypothesis** a provisional but empirically testable statement about the relationship between two or more variables that is readily subject to revision upon further experimentation.

**working knowledge** see **ATTITUDE-RELEVANT KNOWLEDGE**.

**working memory** **1.** as originally described in 1960 by U.S. cognitive psychologist George Armitage MILLER, U.S. experimental psychologist Eugene Galanter (1924– ), and Austrian-born U.S. neuropsychologist Karl H. PRIBRAM, any of various hypothetical systems involved in the brief retention of information in a highly accessible state. The term has evolved, however, to refer primarily to the 1974 model of British cognitive psychologists Alan D. Bad-

deley (1934– ) and Graham J. Hitch (1946– ) for the short-term maintenance and manipulation of information necessary for performing complex cognitive tasks such as learning, reasoning, and comprehension. According to their multicomponent conceptualization, working memory comprises a **PHONOLOGICAL LOOP** for temporarily manipulating and storing speech-based information and a **VISUO-SPATIAL SKETCHPAD** that performs a similar function for visual and spatial information. Both are supervised by a limited capacity **CENTRAL EXECUTIVE**, a control system responsible for the distribution of attention and general coordination of ongoing processes. A fourth component, the **EPISODIC BUFFER**, was added to the model in 2000; it binds together information about the same stimulus or event from the different subsidiary systems to form an integrated representation that is essential to **LONG-TERM MEMORY** storage.

The Baddeley and Hitch working memory model, which introduced an element of assessment and planning into the memory mechanism, has replaced the idea of a unitary **SHORT-TERM MEMORY** system and become one of the most influential and well-known concepts within memory psychology, continuing to stimulate research and debate some 40 years after its introduction. Indeed, the model has proved valuable in accounting for experimental data from a wide range of participants under a rich array of task conditions. Current interest focuses most strongly on the link between working memory and long-term memory and on the processes allowing the integration of information from the component subsystems.

**2.** in animal cognition, a temporally based representation of an object, stimulus, or spatial location that is used within a single trial of an experimental session to guide behavior. **DELAYED MATCHING TO SAMPLE**, maze running, and various other tasks involving **CONDITIONAL DISCRIMINATION** are commonly used to assess working memory in nonhuman animals. For example, a rat searching a **RADIAL MAZE**, the arms of which radiate outward from a center platform like spokes of a wheel, for a single food pellet at the end of each arm relies on working memory to retain information about which arms have already been entered so as to avoid repeating any arm while searching. Compare **REFERENCE MEMORY**. [initially described in 1978 by German-born U.S. psychologist Werner Konstantin Honig (1932–2001) and subsequently elaborated by U.S. physiological psychologist David Stuart Olton (1943–1994) and various colleagues]

**3.** in computing, see **PRODUCTION SYSTEM**.

**Working Memory Index** an index used in older versions of the **WECHSLER MEMORY SCALE** as well as the Wechsler intelligence tests that evaluates the ability to manipulate and process visual and auditory stimuli in short-term or working memory.

**working self-concept** see **PHENOMENAL SELF**.

**working through** **1.** in psychotherapy, the process by which clients identify, explore, and deal with psychological issues, on both an intellectual and emotional level, through the presentation of such material to and in discussion with the therapist. **2.** in psychoanalysis, the process by which patients gradually overcome their **RESISTANCE** to the disclosure of unconscious material; are brought face to face with the repressed feelings, threatening impulses, and internal conflicts at the root of their difficulties; and develop conscious ways to rebound from, resolve, or otherwise deal with these feelings, impulses, and conflicts.

**working vocabulary** see **PRODUCTIVE VOCABULARY**.

**work-life balance** the level of involvement between the multiple roles in a person's life, particularly as they pertain to employment and family or leisure activities. Achieving a good balance or fit is thought to increase LIFE SATISFACTION. See also QUALITY OF LIFE.

**work-limit test** a test in which all examinees perform the same task, with scores based on the time required for the performance.

**work motivation** the desire or willingness to make an effort in one's work. Motivating factors may include salary and other benefits, desire for status and recognition, a sense of achievement, relationships with colleagues, and a feeling that one's work is useful or important. A variety of theories of work motivation exist, including the EXISTENCE, RELATEDNESS, AND GROWTH THEORY, the JOB-CHARACTERISTICS MODEL, the PORTER-LAWLER MODEL OF MOTIVATION, the VALENCE-INSTRUMENTALITY-EXPECTANCY THEORY, and the TWO-FACTOR THEORY OF WORK MOTIVATION.

**workplace violence** physical force or intimidation against workers at or outside a place of employment, including threats, harassment, verbal abuse, physical assaults, and homicide.

**work psychology** see INDUSTRIAL AND ORGANIZATIONAL PSYCHOLOGY.

**work rehabilitation center** a facility in which injured employees recuperate and prepare for returning to employment. Rehabilitation efforts focus on an individual's specific therapeutic needs, include participation in simulated work activities, and incorporate workplace education designed to prevent future injury. See also VOCATIONAL REHABILITATION.

**work-rest cycle** any fixed or recurring sequence in which time spent performing tasks is interspersed with rest breaks. Researchers have used SCIENTIFIC MANAGEMENT in attempts to determine empirically the ideal work-rest cycle for the optimal performance of tasks.

**work-sample test** in personnel selection, a job-specific test that replicates the day-to-day tasks required in the job. The applicant may be required to use actual or simulated equipment in a controlled testing situation (e.g., driving a loaded forklift around a standard course) or to respond to typical problems or scenarios that occur at work, as in an IN-BASKET TEST. See also SITUATIONAL INTERVIEW.

**work satisfaction** see JOB SATISFACTION.

**workspace** *n.* the physical area in which an employee performs his or her main work tasks, together with any fixed equipment. Some typical workspaces include a desk with computer, a station on an assembly line, or the cab of a vehicle.

**workspace design** in HUMAN ENGINEERING, the design of fixed workstations for effective, comfortable, and safe performance of tasks. Aspects of good workspace design include the placement of materials, tools, machines, and controls within easy reach (see REACH ENVELOPE) and a comfortable, adjustable seat adapted to the particular task. See also EQUIPMENT DESIGN; TOOL DESIGN.

**work-study program** any of a variety of educational programs combining classroom study with job experience for the purpose of providing students with financial assistance or practical training.

**work system 1.** from a traditional time and motion perspective (see TIME AND MOTION STUDY), the structures, oper-

ations, and schedules required to meet the demands of a production or process system. **2.** from a more holistic, ergonomic perspective, the totality of the technological and environmental factors (physical and social) that are relevant to the human achievement of an organizational objective. See MACROERGONOMICS; SOCIOTECHNICAL SYSTEMS APPROACH; SYSTEMS ENGINEERING.

**work therapy** the use of compensated or uncompensated work activities as a therapeutic agent for individuals with mental or physical disorders. For example, self-esteem or interpersonal or cognitive skills may be enhanced when these individuals function in a safe, controlled environment, where they may either acquire fundamental training for new skills or receive retraining in skills that have been lost or diminished.

**workup** *n.* in health care, a total patient evaluation, which may include laboratory assessments, radiologic series, medical history, and diagnostic procedures.

**world design** in EXISTENTIAL PSYCHOLOGY, a person's worldview or fundamental orientation toward life: his or her essential mode of BEING-IN-THE-WORLD. The term and concept come from the work of Swiss existential psychologist Ludwig Binswanger (1881-1966). A person's world design includes the way in which that person integrates the totality of his or her personality with the world as he or she experiences it. In this approach, understanding a person's world design is essential in understanding the person.

**World Federation for Mental Health** an international, nongovernmental association of organizations and individuals formed in 1948 to advance the prevention of mental and emotional disorders, the proper treatment and care of those with such disorders, and the promotion of mental health worldwide. The federation organizes World Mental Health Day.

**World Health Organization (WHO)** the directing and coordinating authority for health within the United Nations. Founded in 1948, it is responsible for providing leadership on global health matters, shaping the health research agenda, setting norms and standards, articulating evidence-based policy options, providing technical support to countries, and monitoring and assessing health trends worldwide. WHO's six core functions are (a) promoting development through socioeconomic progress and increased resources; (b) fostering health security with regard to outbreaks of emerging and epidemic-prone diseases; (c) strengthening health care systems; (d) harnessing health-related research, information, and evidence; (e) enhancing partnerships with other international organizations and entities; and (f) improving performance through results-based management. Its headquarters are in Geneva, Switzerland.

**world regions** in the thought of German philosopher Martin Heidegger (1889-1976), three different aspects of a person's lived experience characterized as three worlds simultaneously inhabited by DASEIN—the EIGENWELT, or private and subjective world; the MITWELT, or social world; and the UMWELT, or immediate physical environment.

**worldview** *n.* see WELTANSCHAUUNG.

**worm** *n.* a computer program designed to replicate itself and to pass its self-replicating code from computer to computer. See also VIRUS.

**worry** *n.* a state of mental distress or agitation due to concern about an impending or anticipated event, threat, or



danger. Difficult to control, persistent and excessive worry is a primary symptom of GENERALIZED ANXIETY DISORDER. See also METAWORRY.

**worse-than-average effect** see BELOW-AVERAGE EFFECT.

**worship** *n.* **1.** reverence or adoration for a divine or supernatural being, a person, or a principle. **2.** the formal expression of RELIGIOUS FAITH in ritual, prayer, and other prescribed practices.

**WPPSI** abbreviation for WECHSLER PRESCHOOL AND PRIMARY SCALE OF INTELLIGENCE.

**WRAIR** abbreviation for WALTER REED ARMY INSTITUTE OF RESEARCH.

**wraparound services** a philosophy of care and service provision characterized by a planning process involving a focal person, concerned family members, and service providers. It results in a highly individualized set of closely coordinated community services and natural supports for the person and his or her family, which achieves a variety of intervention outcomes. Wraparound services have been developed in several service sectors, including mental health, child welfare, and developmental disabilities, and have been proven effective as an alternative to residential services for multiproblem individuals and their families.

**WRAT** abbreviation for WIDE RANGE ACHIEVEMENT TEST.

**writer's block** inhibited ability to start or continue working on a piece of writing. Such difficulty is attributed primarily to psychological factors (e.g., fear of failure) but may also result from fatigue or BURNOUT. Suggested remedies often include writing spontaneously about an unrelated topic, doing more reading, and changing something about the physical environment to make it more conducive to writing.

**writer's cramp** a painful spasm of the muscles involved in writing or typing, which may be a form of OCCUPATIONAL CRAMP or a FUNCTIONAL DISORDER. See also REPETITIVE STRAIN INJURY.

**writing disorder** any motor, sensory, or language disorder that interferes with the ability to write.

**writing test** any test designed to sample and measure writing skills, which can include the motor act of writing, spelling, grammar, and content.

**wrong number technique** a method for assessing individuals' willingness to help members of specific social groups and categories. Researchers call participants on a

telephone and emphasize their identity as members of a particular social or ethnic group, such as male or female, Black or White. They claim that they are experiencing a minor emergency (e.g., an automobile breakdown), that they have mistakenly dialed the wrong number from a payphone, and that they have now used the last of their coins. The researchers then ask the participants to place a call for them (e.g., to an auto repair shop). Willingness to help is indicated if the participant makes the call. [first used by U.S. psychologists Samuel L. Gaertner (1942– ) and Leonard B. Bickman (1941– ) and described in their 1971 research report]

**WSE** abbreviation for WORD-SUPERIORITY EFFECT.

**WSID** abbreviation for WOMEN'S SEXUAL INTEREST DIAGNOSTIC INTERVIEW.

**WTPT** abbreviation for WALK-THROUGH PERFORMANCE TESTING.

**Wundt curve** a bell-shaped curve illustrating that as a stimulus intensity (e.g., light) increases from low to moderate levels, its effect is pleasant or rewarding, but that as it increases to higher levels, its effect is unpleasant and even painful. The Wundt curve has been related to theories of human motivation, novelty seeking, and aesthetics, the latter most notably in the work of Daniel E. BERLYNE. See AROUSAL-REDUCTION MECHANISM. [developed by Wilhelm WUNDT]

**Wundt illusion** an illusion in which straight lines that appear to be curved when viewed through a prism appear to curve in the opposite direction when the prism is removed. [described in 1896 by Wilhelm WUNDT]

**Würzburg school** a school of psychology developed at the end of the 19th century by Oswald KÜLPE and his associates in Würzburg, Germany. It arose largely as a reaction to the structuralist approach of Edward Bradford TITCHENER, who insisted that conscious experience consisted of images that could be analyzed into basic elements (sensations, feelings). For the Würzburg school, the focus was on intangible mental activities, such as judgments, meanings, and DETERMINING TENDENCIES, which were conscious but had no image quality associated with them (see IMAGELESS THOUGHT). See also AUFGABE.

**Wyatt v. Stickney decision** a 1972 Alabama District Court decision stipulating that the state could not hold people involuntarily in hospital facilities that did not meet proper standards. These standards include a humane environment, adequate staff, and appropriate treatment.

# Xx

**x** a letter used to symbolize a variable of interest. For example, in a REGRESSION EQUATION, *x* may represent a particular predictor or INDEPENDENT VARIABLE.

**$\bar{X}$  (X bar)** symbol for SAMPLE MEAN.

**$x'$**  symbol for X PRIME.

**Xanax** *n.* a trade name for ALPRAZOLAM.

**xanthine** *n.* see METHYLBXANTHINE.

**xantho- (xanth-)** *combining form* yellow.

**xanthocyanopsia** *n.* a form of color blindness in which red and green are not perceived and objects are thus seen in shades of yellow or blue.

**xanthomatosis** *n.* any of several disorders marked by an accumulation of excess lipids, such as cholesterol, in the body due to a metabolic disturbance. This accumulation leads to the formation of foam cells in skin lesions and other symptoms. These disorders include **bulbi xanthomatosis**, marked by fatty degeneration of the cornea; WOLMAN'S DISEASE; **hypercholesterolemic xanthomatosis**, or Type II hyperlipoproteinemia, associated with accelerated atherosclerosis and premature heart attacks; and normal cholesterolic xanthomatosis (see HAND—CHRISTIAN—SCHÜLLER SYNDROME). A related form of xanthomatosis results in cutaneous lesions and other effects in some people with diabetes.

**xanthopsia** *n.* see CHROMATOPSIA.

**xanthopsin** *n.* see VISUAL YELLOW.

**x-axis** *n.* the horizontal axis on a graph. See ABSCISSA.

**X chromosome** the SEX CHROMOSOME that is responsible for determining femaleness in humans and other mammals. The body cells of normal females possess two X chromosomes (XX), whereas males have one X chromosome and one Y CHROMOSOME (XY). In humans, various authorities estimate that the X chromosome carries between 1,000 and 2,000 genes, including many responsible for hereditary diseases (see SEX-LINKED). Abnormal numbers of X chromosomes lead to genetic imbalance and a range of disorders and syndromes. See also FRAGILE X SYNDROME.

**x-coordinate** *n.* the horizontal value in a pair of graph coordinates (*x*, *y*), which indicates how far to move left or right from the origin along the X-AXIS. For example, in the ordered pair (4, 8), the *x*-coordinate is 4 and the corresponding vertical Y-COORDINATE value is 8. See CARTESIAN COORDINATE SYSTEM.

**Xenazine** *n.* a U.S. trade name for TETRABENAZINE.

**xeno- (xen-)** *combining form* different, strange, or foreign. [from Greek *xenos*, "stranger"]

**xenoglossophilia** *n.* a tendency to use strange or foreign words, particularly in a pretentious manner.

**xenoglossy** *n.* in parapsychology, the ostensible ability of a person to speak or write in a language that is entirely unknown to him or her.

**xenophobia** *n.* 1. a strong and irrational, sometimes

pathological, fear of strangers. 2. hostile attitudes or aggressive behavior toward people of other nationalities, ethnic groups, regions, or neighborhoods. In nonhuman animals, xenophobia is manifested by territorial behavior (see TERRITORIALITY) and is also seen in social groups where intruders are typically attacked and repelled. —**xenophobic** *adj.*

**xenorexia** *n.* the pathological ingestion of inedible objects.

**xeroderma pigmentosum** a syndrome acquired as an autosomal recessive trait (see RECESSIVE ALLELE) and marked by extreme photosensitivity. It is caused by a defect in the ability of the body to repair damage to DNA resulting from exposure to ultraviolet light, which leads to cancerous changes in skin cells and increased mortality. Additionally, about 30% of people with this syndrome develop progressive neurological symptoms, including hearing loss, movement problems, loss of intellectual function, and seizures.

**xerophthalmia** *n.* excessive dryness of the eyes, due to histological changes in the cornea and conjunctiva. Xerophthalmia is a characteristic symptom of **Sjögren's syndrome**, a systemic autoimmune disease with an onset between 40 and 65 years. Xerophthalmia is also one of the ocular effects of vitamin A deficiency.

**x-intercept** *n.* in an equation representing a straight-line relationship between two variables, the value of variable *x* when the value of variable *y* equals zero. For example, in the general LINEAR equation format  $x = a + by$ , *a* represents the *x*-intercept.

**X-linked** *adj.* see SEX-LINKED.

**x prime** (symbol:  $x'$ ) the predicted or EXPECTED VALUE of a given variable of interest, *x*.

**X-ray** *n.* an electromagnetic emission of short wavelength produced by bombarding a heavy metal target, such as tungsten, with high-energy electrons in a vacuum tube. X-rays are used for diagnostic purposes to visualize internal body structures: The radiation can penetrate most substances and produce images of objects on photographic film (see RADIOGRAPHY) or can cause certain chemicals to fluoresce. Prolonged or unnecessary exposure can be extremely damaging; therefore, when X-rays are used therapeutically for diagnosis or to destroy malignant cells (see RADIATION THERAPY), great precautions are taken to limit and target exposure. Also called **roentgen ray**.

**XX** see SEX CHROMOSOME.

**XXX syndrome** a rare disorder characterized by the presence of three X (female) chromosomes instead of the normal two X chromosomes (46,XX). The majority of affected females are physically and mentally normal. Delays in mental development, when present, are usually mild. Also called **47,XXX syndrome**; **triple-X condition**; **trisomy X**.

**XXXX syndrome** a disorder in which a female has four X chromosomes instead of the normal two X chromosomes

(46,XX). Affected females are likely to have minor physical anomalies and mild developmental delays, but symptoms can also be moderate to severe. Also called **48,XXXX syndrome; tetrasomy X**.

**XXXXX syndrome** a rare disorder in which a female has five X chromosomes instead of the normal two X chromosomes (46,XX). All affected individuals studied had intellectual disability, and some had ocular or other anomalies, such as patent ductus arteriosus (a heart defect), MICROCEPHALY, or limb abnormalities. Also called **49,XXXXX syndrome**.

**XXXXY syndrome** a rare disorder in which a male inherits three extra X chromosomes in addition to the normal one X and one Y chromosome (46,XY). Affected individuals have a variety of anomalies, including abnormally small genitalia; a short, broad neck; and hypotonia (flaccid muscles). Most affected individuals have intellectual disability, impaired speech, and short stature. Also called **49,XXXXY syndrome**.

**XXXY syndrome** a relatively rare disorder in which a male inherits the full complement of both male and female sex chromosomes instead of either the normal two X chromosomes (46,XX) for females or the normal one X and one Y chromosome (46,XY) for males. Affected individuals have a normal penis but small testes and prostate, and about half develop enlarged breasts and have intellectual and developmental disabilities. Also called **48,XXXY syndrome**.

**XXY syndrome** see KLINEFELTER'S SYNDROME.

**XXYY syndrome** a disorder in which a male is born with a double complement of the normal XY chromosome pair (46,XY). Skeletal deformities, genital anomalies leading to infertility, enlarged breasts, and eunuchoid abdomi-

nal and hip fat are among the physical traits. Learning disabilities, especially reading problems, are common, along with delayed development of motor skills. Also called **48,XXYY syndrome**.

**XY** see SEX CHROMOSOME.

**xylene** *n.* a volatile solvent that can cause kidney failure and death when chronically inhaled. See INHALANT.

**Xyrem** *n.* a trade name for GHB.

**XYZ syndrome** a chromosomal anomaly discovered in 1961 and initially believed to predispose males to aggression and violence. The theory was modified when XYZ anomalies were found among normal males. Also called **double-Y condition**.

**XYZ grouping** a program in which school administrators assign students in the same grade to classes by virtue of their test scores and school records. Students with similar abilities are placed in "high," "middle," or "low" groups or classes; each group follows the same basic curriculum. Students in the middle and lower classes in XYZ programs do not increase their achievement as compared to students in traditional classes, but students in the higher classes in XYZ programs increase their achievement by about one month on a GRADE-EQUIVALENT SCALE as compared to students in traditional classes. In XYZ classes, self-esteem of lower ability students rises slightly and self-esteem of higher ability students drops slightly. See also ABILITY GROUPING.

**XYZ system** a mathematically defined theoretical system for specifying colors in terms of three abstract primary colors, X, Y, and Z. The system was developed in 1931 by the International Commission on Illumination (CIE) and is often referred to as **CIE XYZ color space**.

# Yy

**y** symbol for a variable of interest. For example, in a REGRESSION EQUATION, *y* may represent a particular outcome or DEPENDENT VARIABLE.

**y'** symbol for Y PRIME.

**yagé** *n.* see AYAHUASCA.

**yakee** *n.* see EPENA.

**Yale model** see MESSAGE-LEARNING APPROACH.

**yantra** *n.* a visual pattern on which attention is focused during CONCENTRATIVE MEDITATION. Compare MANTRA.

**Yates's correction for continuity** an adjustment made to a CHI-SQUARE TEST of data from a CONTINGENCY TABLE having only two columns and two rows of information. The Yates's correction yields a more conservative chi-square statistic and improves the test's accuracy by accounting for the fact that it uses a CONTINUOUS DISTRIBUTION to approximate a DISCRETE DISTRIBUTION. [Frank Yates (1902–1994), British statistician]

**yaupon** *n.* see CASSINA.

**yawning** *n.* the act of drawing in through the mouth a volume of air that is much larger than that inhaled in normal respiration, serving to improve oxygen supplies to the brain. Some research indicates that yawning is mediated by the same NEUROTRANSMITTERS in the brain that affect emotions, mood, appetite, and so forth (i.e., serotonin, dopamine, glutamic acid, and nitric oxide). The more of these compounds that are activated in the brain, the greater the frequency of yawns. Yawns can be a form of NONVERBAL COMMUNICATION in that they are contagious and can indicate boredom or disagreement as well as sleepiness.

**y-axis** *n.* the vertical axis on a graph. See ORDINATE.

**Y chromosome** the SEX CHROMOSOME that is responsible for determining maleness in humans and other mammals. The body cells of normal males possess one Y chromosome and one X CHROMOSOME (XY). The Y chromosome is much smaller than the X chromosome and is thought to carry just a handful of functioning genes. Hence, males are far more susceptible to SEX-LINKED diseases than females, because the Y chromosome lacks the ALLELES to counteract any defective genes carried on the X chromosome.

**y-coordinate** *n.* the vertical value in a pair of graph coordinates (*x*, *y*), which indicates how far to move up or down from the origin along the Y-AXIS. For example, in the ordered pair (4, 8), the *y*-coordinate is 8 and the corresponding horizontal X-COORDINATE value is 4. See CARTESIAN COORDINATE SYSTEM.

**yea-saying** *n.* answering questions positively regardless of their content, which can distort the results of surveys, questionnaires, and similar instruments. Also called **acquiescent response set**; **response acquiescence**. Compare NAY-SAYING.

**Yerkes–Dodson law** a law stating that the relation between motivation (AROUSAL) and performance can be represented by an inverted U-curve (see INVERTED-U HY-

POTHESIS). [Robert M. YERKES and John Dillingham Dodson (1879–1955), U.S. psychologists]

**Yerkish** *n.* a language consisting of geometric forms that has been taught to nonhuman primates in studies of language acquisition and use. There has been some debate about whether animals trained with Yerkish demonstrate true language ability. [developed by U.S. psychologist Duane Rumbaugh (1929– ) and named for Robert M. YERKES]

**yes–no task** in psychophysics, a signal detection task in which participants undergo a series of trials in which they must judge the presence (*yes*) or absence (*no*) of a signal.

**yin and yang** in Chinese philosophy, the two opposite but complementary aspects of the fundamental principle governing the universe. Originally, the words referred to the shady and the sunny side of a hill. The concept is represented by the Chinese symbol (the Taijitu) that also represents TAOISM. Yin and yang are the two forces or principles that can be seen at work in all phenomena. Sometimes one is dominant, sometimes the other, and all things ultimately revert to their opposites. In simple terms, yin is characterized as negative, passive, and feminine, among other things, whereas yang is seen as positive, active, and masculine, among other things. Understanding the principles of opposition, interaction, and especially harmony inherent in yin and yang is, however, as important as understanding the particular characteristics associated with each of them.

**y-intercept** *n.* in an equation representing a straight-line relationship between two variables, the value of variable *y* when the value of variable *x* equals zero. For example, in the general LINEAR equation format  $y = a + bx$ , *a* represents the *y*-intercept.

**Y-linked** *adj.* see SEX-LINKED.

**Y maze** a maze shaped like the letter Y, consisting of a stem that leads to a choice of two goal arms, only one of which is the correct path to the goal box. It is a variant of the T MAZE; both are used in experiments of animal cognition.

**yoga** *n.* a school or tradition of Hindu philosophy and practical teaching that ultimately seeks to achieve MYSTIC UNION of the self with the Supreme Being, or of the human spirit with the universal spirit, through a prescribed mental discipline and physical exercises. Yoga exercises, including regulation of breathing and the adaptation of bodily postures (see ASANA), are used as a means of releasing tension and redirecting energy (i.e., prana; see CHI) and achieving a state of self-control, physical and mental relaxation, and finally deep contemplation. [Sanskrit, “union” or “yoke”]

**yohimbine** *n.* a stimulant alkaloid derived from the bark of the African tree *Pausinystalia yohimbe* and from *Rauwolfia serpentina* root. It acts as an antagonist at  $\alpha_2$ -adrenoreceptors (see ALPHA-ADRENERGIC RECEPTOR); at high doses, it is a MONOAMINE OXIDASE INHIBITOR and can cause serious adverse effects when taken concomitantly with antidepressants, tyramine-containing foods (e.g., liver, cheeses), or

over-the-counter products containing phenylpropanolamine, such as nasal decongestants and diet aids. Yohimbine has achieved a reputation as a sexual enhancer in men, but there is little clinical evidence suggesting its efficacy is greater than placebo. It has also been studied as a potential treatment for erectile dysfunction, with contradictory results regarding its effectiveness. Chemically related to reserpine (see RAUWOLFIA DERIVATIVE), yohimbine is a SYMPATHOMIMETIC DRUG and may increase anxiety or produce panic attacks in susceptible individuals. Side effects may include nervousness, irritability, dizziness, skin flushing, or headache. More serious effects, including renal failure, seizures, and death, have also been reported. Yohimbine should not be taken by people with hypotension (low blood pressure), diabetes, or heart, liver, or kidney disease. It is available as an herbal remedy and also in prescription form (U.S. trade name: **Yocon**).

**yoked-control group** a CONTROL GROUP in which each participant is paired with a participant in another group (see MATCHED-PAIRS DESIGN); the paired individuals are then exposed to precisely the same experiences except for the specific treatment or other condition under study. This procedure is intended to make the control group as similar as possible to the experimental group. For example, in a study of the effectiveness of rewards on children's learning, matched individuals in the control and experimental groups would complete the same tasks under the same conditions but only those in the experimental group would be praised for good performance.

**Youngberg v. Romeo** the initial lawsuit that culminated in the PENNHURST CONSENT DECREE. In this action, the U.S. Supreme Court held that people with intellectual disability who were involuntarily committed to state institutions have a constitutional right to reasonably safe conditions, freedom from unreasonable restraints, and the services reasonably required to protect their liberty and interests.

**Young-Helmholtz theory of color vision** a theory to explain color vision in terms of components or processes sensitive to three different parts of the spectrum, corresponding to the colors red, green, and blue. According to this theory, other colors are perceived by stimulation of two of the three processes, whereas light that stimulates all three processes equally is perceived as white. The components are now thought to be RETINAL CONES, although the original theory was not tied to a particular (or indeed to any) cell type. See TRICHROMATIC THEORY. Compare HERING

THEORY OF COLOR VISION; OPPONENT PROCESS THEORY OF COLOR VISION. [Thomas **Young** (1773–1829), British physician and physicist; Hermann von HELMHOLTZ]

**young male syndrome** the propensity of males in their mid- to late teens and twenties, and particularly those who are unmarried and unemployed, to engage in violent altercations to resolve seemingly trivial matters, to “save face,” to harm a rival, or otherwise to enhance their social status. Young men in this age group are also more likely to participate in high-risk behaviors, such as driving at high speeds or taking illicit drugs. [described in 1985 by Canadian psychologists Margo Wilson (1942–2009) and Martin Daly (1944– )]

**young-old** *adj.* see ADULTHOOD.

**youpon** *n.* see CASSINA.

**you statement** see I STATEMENT.

**youth counseling** consultation that provides advice, information, and support to young people, usually in adolescence or slightly younger. Youth counseling may focus on any issue that raises concerns or conflicts related to studying, family involvement, sexuality and gender identity, or peer relationships. It may be used to counter low self-image and feelings of inadequacy that are often experienced by young people.

**youth culture** **1.** a society that places a high premium on youth, physical health and beauty, and the values, tastes, and needs of young people. Such a society tends to derogate the values, experience, and needs of middle-aged and older people and may produce subtle psychological pressures for older adults to adapt to the culture of youth. **2.** the distinctive culture of teenagers and young adults, which often involves forms of dress, speech, music, and behavior that are deliberately at variance with those of the dominant culture. See also COUNTERCULTURE.

**y prime** (symbol:  $y'$ ) the predicted or EXPECTED VALUE of a given variable of interest,  $y$ .

**Yule's Q** a measure of the strength of the relationship between two DICHOTOMOUS VARIABLES, such as a person's sex (male or female) and graduation from college (yes or no). It ranges from  $-1$  to  $+1$ , with values close to either negative or positive 1 indicating a very strong relation and values around 0 indicating little to no relation. Also called **Yule's coefficient of association**. [George Udny **Yule** (1871–1951), British statistician]

# Zz

**zaar** *n.* see ZAR.

**zaleplon** *n.* a nonbenzodiazepine HYPNOTIC used for short-term treatment of insomnia. It has a rapid onset but short duration of action. Side effects are less frequent compared with other classes of hypnotics but commonly include headache, dizziness, abdominal pain, nausea, and amnesia. Although chemically unrelated to the benzodiazepines, zaleplon acts at the same GABA<sub>A</sub> RECEPTOR and carries a similar potential for abuse. U.S. trade name: **Sonata**.

**zar** (**zaar**) *n.* a CULTURE-BOUND SYNDROME, occurring in North African and Middle Eastern cultures, that is attributed to spirit possession. Occurring most frequently in women, zar often involves dissociative, somatic, and affective symptoms, such as shouting, laughing, apathy, and refusal to perform daily tasks.

**Zarontin** *n.* a trade name for ethosuximide. See SUCCINIMIDE.

**z-axis** *n.* the third dimension in a CARTESIAN COORDINATE SYSTEM or graph. It is perpendicular to both the horizontal X-AXIS and the vertical Y-AXIS.

**Zeigarnik effect** the tendency for interrupted, uncompleted tasks to be better remembered than completed tasks. Some theorists relate this phenomenon to certain GESTALT PRINCIPLES OF ORGANIZATION but at the level of higher mental processing (e.g., memory), rather than at the level of pure perception. [described in 1927 by Bluma ZEIGARNIK]

**Zeitgeber** *n.* a cue, such as day length, used to activate or time a BIOLOGICAL RHYTHM. See ENTRAINMENT. [German, "time giver": first defined scientifically in 1954 by German biologist Jürgen Aschoff (1913–1998)]

**Zeitgeist** *n.* German, "spirit of the times": a term used by German philosopher Georg Wilhelm Friedrich Hegel (1770–1831) to refer to a type of supraindividual mind at work in the world and manifest in the cultural worldview (see WELTANSCHAUUNG) that pervades the ideas, attitudes, and feelings of a particular society in a specific historical period. Used in this way, the term has a distinctly deterministic flavor. A Zeitgeist theory of history stresses the role of such situational factors as economics, technology, and social influences in contrast to the GREAT MAN THEORY of history. The term was first used in English by British poet and literary critic Matthew Arnold (1822–1888) and introduced to psychology in 1929 by Edwin G. BORING, who used the concept as an organizing theme for his discussions of creativity, scientific change, and historiography. See also ORTGEIST.

**Zelen's design** a type of RANDOMIZED CLINICAL TRIAL in which patients are assigned to experimental conditions before they have consented to participate in the research. There are two versions of the design, both of which remain ethically controversial: In the single-consent strategy, patients assigned to the experimental treatment are told there is an alternative (the control) available and offered the option to switch; those in the control group are not informed of their study participation. In the double-consent strategy,

both the experimental and control groups are offered the option to switch from the treatment to which they initially were assigned. [Marvin **Zelen** (1927– ), U.S. biostatistician]

**zelotypia** *n.* extreme overzealousness in advocating a cause.

**Zen Buddhism** a Japanese school of BUDDHISM, dating from the 6th century CE, in which enlightenment is sought through direct, intuitive experience rather than through an intellectual approach to the scriptures. One method of preparing the way for such insight is to devote oneself to the solution of an insoluble paradox, such as "What is the sound of one hand clapping?" Another is prolonged, motionless meditation. In both cases, the aim is to transcend rational, instrumental thought and the limitations of human language. Zen Buddhism has become increasingly popular in the West since the 1960s.

**Zener cards** a standardized set of stimulus materials, similar to a deck of playing cards, designed for use in experiments on EXTRASENSORY PERCEPTION (ESP) and other parapsychological phenomena. The set consists of 25 cards, each of which bears one of five printed symbols (star, wavy lines, cross, circle, or square), with five cards in each category. In a typical test of TELEPATHY, the cards are shuffled (usually mechanically) and a designated SENDER turns the cards over one at a time to inspect the symbol while a RECEIVER attempts to guess the symbol by reading the thoughts of the sender. In an experiment on CLAIRVOYANCE, the receiver might attempt to identify the order of the shuffled deck without any inspection of cards by the sender (see SCREEN TOUCH MATCHING). In an experiment on PSYCHOKINESIS, the participant would attempt to control the outcome of the shuffle directly. Also called **ESP cards**; **Rhine cards**. See also BASIC TECHNIQUE; DOWN THROUGH; ESP FORCED-CHOICE TEST; GENERAL EXTRASENSORY PERCEPTION; UP THROUGH. [named in honor of Karl E. **Zener** (1903–1964), U.S. perceptual psychologist who designed the symbols, by his colleague Joseph B. RHINE, who devised the deck]

**Zeno's paradoxes** several arguments proposed by Greek philosopher Zeno of Elea (early 5th century BCE) against the ideas of plurality and motion. Individuals making a trip must first go halfway to their destination, then cover half of the remaining distance, then half again, in an indefinite sequence of such steps that appears impossible to complete. Alternatively, if Achilles gives a tortoise a head start in a race and attempts to catch up, he must first run to where the tortoise was, then to where it has moved to, and so on for an infinite sequence of such moves, seemingly never catching up with the tortoise.

**Zen therapy** psychotherapy that is informed by and incorporates the philosophy and practices of ZEN BUDDHISM and that, like EXISTENTIALISM, is concerned with the unique meaning of the client's life within the universal context, rather than with simple adjustment to or removal of symptoms. Through meditation and intuition, contemplation of human nature and human existence is believed

to lead to a therapeutic alignment of the client with a sense of the oneness of the universe and to spiritual (and, thus, cognitive, affective, and behavioral) transformation. See also MYSTIC UNION.

**zero-delay matching to sample** see DELAYED MATCHING TO SAMPLE.

**zero-order correlation** a simple association between two variables that does not control for the possible influence of other variables. For example, consider the relationship between success selling computers and knowledge of how the Internet works. A zero-order correlation would examine the direct relationship between these two variables without taking into account other explanatory information, such as education level, sales experience, and so forth. Compare PART CORRELATION; PARTIAL CORRELATION.

**zero-sum game** in GAME THEORY, a type of game in which the players' gains and losses add up to zero. The total amount of resources available to the participants is fixed, and therefore one player's gain necessarily entails the others' loss. The term is used particularly in analyses of bargaining and economic behavior but is sometimes also used in other sociocultural contexts (e.g., politics). Compare NON-ZERO-SUM GAME.

**zest** *n.* see VITALITY.

**ZIFT** acronym for ZYGOTE INTRAFALLOPIAN TRANSFER.

**zimbo** *n.* a hypothetical class of zombielike beings (see ZOMBIE) who are behaviorally indistinguishable from humans, responsive to their environment, and capable of complex mental operations but who have no inner life as this is ordinarily understood (i.e., no experience of QUALIA). The concept was introduced by U.S. philosopher Daniel C. Dennett (1942– ) as a response to the ZOMBIE ARGUMENT. Dennett's position is that human beings are, in fact, zim-bos.

**zinc** *n.* an element that is needed in minute amounts in the diet for normal functioning. The zinc ion is required for the activity of many enzymes.

**ZIOF** abbreviation for zone of individual optimal functioning (see ZONE OF OPTIMAL FUNCTIONING).

**Zipf's law** in linguistics, the observation that the length of words in any language is inversely related to their frequency of usage, so that high-frequency words are generally short, and uncommon words are generally long. Also called **Zipfian distribution**; **Zipf's distribution**. [George Kingsley Zipf (1902–1950), U.S. statistician and linguist]

**ziprasidone** *n.* an ATYPICAL ANTIPSYCHOTIC that is used for the treatment of schizophrenia and of acute manic or mixed episodes associated with bipolar disorders. It may prolong the Q-T interval of the cardiac cycle (see ELECTROCARDIOGRAPHIC EFFECT) and therefore should not be taken by patients with abnormal heart rhythms or by those who have had a recent heart attack or are taking antiarrhythmic drugs. Common side effects include ORTHOSTATIC HYPOTENSION and sedation. U.S. trade name: **Geodon**.

**zoanthropy** *n.* see LYCANTHROPY.

**ZOF** abbreviation for ZONE OF OPTIMAL FUNCTIONING.

**Zofran** *n.* a trade name for ONDANSETRON.

**Zöllner illusion** a visual illusion in which parallel lines appear to diverge when one of the lines is intersected by short diagonal lines slanting in one direction, and the other by lines slanting in the other direction. [Johann Karl Friedrich Zöllner (1834–1882), German astrophysicist]

**Zoloft** *n.* a trade name for SERTRALINE.

**zolpidem** *n.* a nonbenzodiazepine HYPNOTIC for short-term management of insomnia. Although structurally different from the benzodiazepines, it acts similarly by binding to a specific site on the GABA<sub>A</sub> RECEPTOR. Its side effects are infrequent but may include dizziness, headache, nausea and vomiting, and amnesia. U.S. trade name: **Ambien**.

**zombie** *n.* **1.** in West African and Haitian folk belief, a corpse that is reanimated by witchcraft and used as a slave. Zombie legends in Haitian VODOO were long surmised to have been based on a real practice of keeping living persons in a trancelike state by means of certain powerful drugs; this notion is now regarded as discredited. Zombies continue to captivate the imagination, however, particularly as menacing, living-dead stalkers in horror movies and other pop-culture genres. **2.** in philosophy of mind, the hypothetical being at the heart of the ZOMBIE ARGUMENT. Also called **philosophical zombie (p-zombie)**. See also ZIMBO. **3.** a colloquial term for the drug PCP.

**zombie argument** in philosophy of mind, any of various arguments that focus on the question of how one might distinguish conscious beings (humans) from hypothetical, nonconscious beings (zombies) that are capable of performing all the functions of conscious beings. By asserting that a zombielike organism could behave as if it were conscious but still lack experience containing QUALIA, these arguments attempt to distinguish consciousness as subjective experience from consciousness as evidenced from observable behavior in the physical world; they are usually deployed against the assumptions of BEHAVIORISM and other forms of PHYSICALISM. See also ZIMBO.

**zone of comparison test** a method of positioning questions in a CONTROL QUESTION TEST to facilitate objective analysis of physiological responses on POLYGRAPH charts and to minimize an examinee's potential to habituate to the question format.

**zone of optimal functioning (ZOF)** the range of physiological AROUSAL within which an individual can perform at the peak of physical, mental, and skillful ability. Also called **zone of individual optimal functioning (ZIOF)**.

**zone of potentiality** the range of a student's capacity for growth, development, or achievement in a particular skill or subject area.

**zone of proximal development** in Lev VYGOTSKY's sociocultural theory, the difference between a child's actual level of ability and the level of ability that he or she can achieve when assisted by, or working in cooperation with, older or more experienced partners (e.g., adults or more knowledgeable peers). Vygotsky asserted that what children can do with the assistance of others is even more indicative of their developmental status than what they can do alone. See SOCIOCULTURAL PERSPECTIVE.

**zonules** *pl. n.* the delicate elastic fibers that connect the capsule of the LENS of the eye to the CILIARY PROCESSES. Also called **suspensory ligament**; **zonules of Zinn**. See also CILIARY MUSCLE.

**zoo-** combining form animals.

**zooerasty (zooerastia)** *n.* see BESTIALITY.

**zoolagnia** *n.* sexual attraction to nonhuman animals. See BESTIALITY; ZOOPHILIA.

**zoom-lens model of attention** a conceptualization

of VISUAL ATTENTION as a variably sized resource that is allocated according to interest, task demands, or other factors. Whereas the SPOTLIGHT MODEL OF ATTENTION specifies a fixed size for the focal attention zone, the zoom-lens model considers it to be malleable, able to be constricted into a highly focused beam (subtending as little as a fraction of a degree of angle) or dilated to even distribution over the entire visual field. Because of limited processing capacities, however, there is a tradeoff between size adjustment and detail: An increase in the area attended results in a decrease in the resolution of detail about stimuli within that area. [proposed in 1985 by Charles W. Eriksen, U.S. psychologist, and Yei-Yu Yeh]

**zoomorphism** *n.* 1. the attribution of nonhuman animal traits to human beings, deities, or inanimate objects. 2. the use of nonhuman animal psychology or physiology to explain human behavior. Compare ANTHROPOMORPHISM.

**zoopharmacognosy** *n.* the ability of nonhuman animals to select plants and plant parts (leaves, pith, etc.) for medicinal purposes to reduce fevers or eliminate parasites. In Tanzania, the plants used by chimpanzees to reduce fever or parasite load are the same as those used by human beings to treat the same ailments.

**zoophilia** *n.* a PARAPHILIA in which nonhuman animals are repeatedly preferred or exclusively used to achieve sexual excitement and gratification. An animal, usually a household pet or farm animal, is either used as the object of intercourse or is trained to lick or rub the human partner, referred to as a **zoophile**. The most commonly used animals in rural settings are pigs and sheep. Also called **zoophilism**. See also BESTIALITY.

**zoosadism** *n.* a PARAPHILIA in which sexual arousal and satisfaction are obtained from torturing a nonhuman animal. This may occur during direct sexual contact with the animal, or the person may masturbate later, using memories of the event as masturbatory fantasies.

**z score** the STANDARDIZED SCORE that results from applying a Z-SCORE TRANSFORMATION to raw data. For purposes of comparison, the data set is converted into one having a distribution with a mean of 0 and a standard deviation of 1. For example, consider a person who scored 30 on a 40-item test having a mean of 25 and standard deviation of 5, and 40 on an 80-item test having a mean of 50 and a standard deviation of 10. The resulting *z* scores would be +1.0 and -1.0, respectively. Thus, the individual performed better on the first test, on which he or she was one standard deviation above the mean, than on the second test, on which he or she was one standard deviation below the mean.

**z-score transformation** a statistical procedure used to convert raw data into Z SCORES, dimensionless quantities that may be interpreted without reference to the original units of measurement. It is performed by subtracting the reference value (the sample average) from each data point and dividing the difference by the STANDARD DEVIATION of the sample.

**z test** a type of statistical test that compares the means of two different samples to determine whether there is a significant difference between them (i.e., one not likely to have occurred by chance). Generally, this involves comparing the mean from a sample of a population to the mean for the whole population but may also involve comparing the means of two different populations. The *z* test is based on

the NORMAL DISTRIBUTION and is used when a population's STANDARD DEVIATION is known or the sample is large (greater than 30). The equivalent T TEST is used with unknown standard deviations or smaller samples.

**z transformation** see FISHER'S R TO Z TRANSFORMATION.

**Zuckerman Sensation-Seeking Scale** see SENSATION-SEEKING SCALE.

**zuclopenthixol** *n.* a conventional ANTIPSYCHOTIC of the THIOXANTHENE class. Side effects include sedation, neuromuscular rigidity, and dystonia, and—like similar agents—it is associated with long-term risk of TARDIVE DYSKINESIA. Zuclopenthixol is not available in the United States. Canadian trade name: **Clopixol**.

**Zugunruhe** *n.* see MIGRATORY RESTLESSNESS.

**Zung Self-Rating Depression Scale (SDS)** a widely used adult self-report depression-screening instrument designed to measure the intensity of depressive or mood-related symptoms. It is also a tool for tracking a client's response to depression treatment over time. The SDS consists of 20 statements to which participants must respond using a 4-point LIKERT SCALE, ranging from *none or little of the time to most or all of the time*. Half of the questions are worded positively (e.g., "I have trouble sleeping") and half are worded negatively (e.g., "I do not feel hopeful"). [originally developed in 1965 by William W. K. Zung, U.S. psychiatrist]

**Zurich School** a group of psychoanalysts who were early followers of Carl JUNG in Zurich, as opposed to the VIENNESE SCHOOL of Sigmund FREUD's followers.

**Zwaardemaker olfactometer** an early OLEFACTOMETER consisting of a single glass tube open at both ends: One end was inserted into a nostril, and the other end was fitted into a tube filled with an ODORANT. Sniffing caused the odorant to reach the OLEFACTORY EPITHELIUM. [Hendrik Zwaardemaker (1857–1930), Dutch physiologist]

**Zwaardemaker smell system** a system for classifying odor qualities based on a scheme originally developed by Swedish botanist Carolus Linnaeus (1707–1778). According to this system, there are nine PRIMARY ODOR qualities: ETHEREAL, AROMATIC, FRAGRANT, AMBROSIAC, ALLIACEOUS, EMPYREUMATIC, HIRCINE, FOUL, and NAUSEOUS. These qualities combine to produce the perceptions of smells. [Hendrik Zwaardemaker]

**Zyban** *n.* a trade name for BUPROPION.

**Zydis** *n.* a trade name for OLANZAPINE.

**zygomaticus** *n.* the set of muscles, innervated by the FACIAL NERVE, that activates the movement of the upper lip outward, upward, and backward. Its activity is recorded in studies of emotion.

**zygote** *n.* a fertilized egg, or ovum, with a DIPLOID set of chromosomes, half contributed by the mother and half by the father. The zygote divides to become an EMBRYO, which continues to divide as it develops and differentiates—in humans eventually forming a FETUS. —**zygotic** *adj.*

**zygote intrafallopian transfer (ZIFT)** a form of IN VITRO FERTILIZATION in which ova and sperm are combined in a laboratory container and the fertilized eggs (zygotes) are implanted into the fallopian tubes. Compare GAMETE INTRAFALLOPIAN TRANSFER.

**Zyprexa** *n.* a trade name for OLANZAPINE.





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# Biographies

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**Adler, Alfred** (1870–1937) Austrian psychiatrist: the first disciple of Sigmund Freud to break away to found his own school, INDIVIDUAL PSYCHOLOGY, which evolved such concepts as the INFERIORITY COMPLEX and COMPENSATION.

**Ainsworth, Mary Dinsmore Salter** (1913–1999) U.S. developmental psychologist: collaborated with John Bowlby in formulating the highly influential ATTACHMENT THEORY; she later devised the STRANGE SITUATION, a method of assessing infant–mother interactions.

**Albee, George Wilson** (1921–2006) U.S. psychologist: a pioneer in community psychology and a major proponent of PRIMARY PREVENTION; he served on mental health commissions for Presidents Dwight D. Eisenhower and Jimmy Carter; a spirited critic of the medicalization of clinical psychology.

**Allport, Floyd Henry** (1890–1978) U.S. psychologist: a founder of experimental social psychology; his approach emphasized individuals over the group and established a behaviorist framework; brother of Gordon W. Allport.

**Allport, Gordon Willard** (1897–1967) U.S. psychologist: a major figure in social psychology; the originator of ALLPORT'S PERSONALITY TRAIT THEORY and coauthor of two personality inventories—the ALLPORT–VERNON–LINDZEY STUDY OF VALUES and the Allport A-S Reaction Study; brother of Floyd H. Allport.

**Anastasi, Anne** (1908–2001) U.S. psychologist: an important contributor to the discussion of the NATURE–NURTURE controversy and to the area of psychological testing.

**Angell, James Rowland** (1869–1949) U.S. psychologist: a major spokesperson for the development of psychology as a science in the United States and a leading exponent of FUNCTIONALISM.

**Aquinas, Thomas** (c. 1225–1274) Italian priest, philosopher, and theologian: noted for using the ARISTOTELIAN method in his writings and lectures; perhaps the leading representative of the tradition of SCHOLASTICISM, he played an early role in advancing the concepts of RATIONALISM and EMPIRICISM.

**Argyle, Michael** (1925–2002) British psychologist: campaigned to establish social psychology as a scientific enterprise and as a necessary perspective for solving social problems.

**Aristotle** (384–322 BCE) Greek philosopher: a student of Plato, his philosophy formed the basis of medieval SCHOLASTICISM and remains important today; his propositions concerning the PSYCHE and voluntary behavior have particular relevance to psychology.

**Arnold, Magda B.** (1903–2002) Austro-Hungarian-born U.S. psychologist: in her theory of emotion, she linked emotion-relevant processes with the neuropsychology of sensory and cognitive function, and her work continues to influence research on the neuropsychological underpinnings of personality.

**Asch, Solomon E.** (1907–1996) Polish-born U.S. psychologist: best known for his contributions to social psychology,

especially in showing how social context influences fundamental processes, such as perception; his studies of CONFORMITY influenced the research of Stanley Milgram.

**Atkinson, Richard C.** (1929– ) U.S. cognitive psychologist: his research spanned MATHEMATICAL LEARNING THEORY, VISUAL RECOGNITION, and memory systems; in particular, his theory of memory, proposed with U.S. cognitive psychologist Richard M. Shiffrin (1942– ) in 1968, has been widely influential in cognitive science (see INFORMATION-PROCESSING MODEL; MULTISTORE MODEL OF MEMORY).

**Bacon, Francis** (1561–1626) English philosopher, essayist, and statesman: emphasized the value of EMPIRICISM (particularly the inductive method) and experimentation, thus helping to establish the fundamentals of modern science.

**Bain, Alexander** (1818–1903) Scottish moral philosopher and psychologist: a transitional figure between the empirical philosophical tradition and the movement to make psychology a science; his work set a precedent for such behaviorist ideas as INSTRUMENTAL CONDITIONING and OPERANT BEHAVIOR; founded *Mind*, the first psychological journal in English, in 1876.

**Baldwin, James Mark** (1861–1934) U.S. psychologist: an influential figure in the early development of experimental and professional psychology in the United States; a proponent of FUNCTIONALISM and an early contributor to developmental psychology.

**Baltes, Paul B.** (1939–2006) German developmental psychologist: helped to define the perspective on which LIFESPAN DEVELOPMENTAL PSYCHOLOGY is based; with his wife, psychologist Margaret M. Baltes (1939–1999), he described SELECTIVE OPTIMIZATION WITH COMPENSATION; with various colleagues, he introduced the TESTING THE LIMITS method to study adult age differences in cognition.

**Bandura, Albert** (1925– ) Canadian-born U.S. psychologist: best known for his work on SOCIAL LEARNING THEORY; his studies of OBSERVATIONAL LEARNING and SOCIAL-COGNITIVE THEORY were especially influential, in particular those pertaining to self-regulatory processes and their role in motivation and behavior.

**Barber, Theodore Xenophon** (1927–2005) U.S. psychologist: a prolific and influential researcher in HYPNOSIS; his social-cognitive theory denied that hypnosis was a special state of consciousness; he eventually proposed a reformulation of hypnosis to find common ground with competing theoretical perspectives based on dissociation.

**Barclay, Allan G.** (1930–2006) U.S. pediatric clinical psychologist: a lifelong advocate for people with developmental disabilities; he influenced federal policy as a consultant to President John F. Kennedy's Committee on Mental Retardation and to the White House Conference on Children; he was integral to military psychologists' receiving PRESCRIPTIVE AUTHORITY in the U.S. Department of Defense.

**Bartlett, Frederic Charles** (1886–1969) British cognitive and experimental psychologist: a pioneer researcher in

the constructive and reconstructive nature of memory and its social and cultural influences; he developed the approaches known as REPEATED REPRODUCTION and SERIAL REPRODUCTION.

**Baum, Andrew S.** (1948–2010) U.S. health psychologist: made significant contributions not only to health psychology but also to environmental psychology and PSYCHONEUROIMMUNOLOGY.

**Bayley, Nancy** (1899–1994) U.S. developmental psychologist: best known as the developer of the BAYLEY SCALES OF INFANT AND TODDLER DEVELOPMENT.

**Beach, Frank A.** (1911–1988) U.S. psychologist: a founder of BEHAVIORAL ENDOCRINOLOGY and an important comparative psychologist, known especially for research on sexual behavior.

**Beck, Aaron T.** (1921– ) U.S. psychiatrist: best known for his development of COGNITIVE THERAPY; he created several scales, among them the widely used BECK DEPRESSION INVENTORY and the BECK HOPELESSNESS SCALE, the latter of which is used to assess suicide risk.

**Beers, Clifford** (1876–1943) U.S. philanthropist: founder of the MENTAL HYGIENE movement, which helped establish psychology as a discipline in the United States through encouraging the use of mental tests and contributing to the rise of clinical psychology and of industrial and organizational psychology.

**Békésy, Georg von** (1899–1972) Hungarian-born U.S. physicist: a groundbreaking researcher in auditory science, especially with his studies of mammalian hearing and of the pattern of movement known as the *traveling wave* in the basilar membrane of the inner ear.

**Bekhterev, Vladimir Mikhailovich** (1857–1927) Russian neuropathologist: founder of Russia's first psychophysiological laboratory and first institute for brain research on mental diseases; he is now credited with playing a greater role than Ivan Pavlov in the introduction of CONDITIONING to psychology.

**Bentley, Madison** (1870–1955) U.S. psychologist: proposed a distinctly psychological science on par with biology; he made significant contributions to psychology through his editorial role in various journals, in particular during his extended editorship of the *American Journal of Psychology* (1903–1950).

**Benton, Arthur L.** (1909–2006) U.S. clinical neuropsychologist: his work with innovative clinical assessment techniques, normative data, and examiner manuals facilitated the emergence of NEUROPSYCHOLOGY as a field.

**Benussi, Vittorio** (1878–1927) Italian psychologist: his research on optical illusions and time perception contributed to Gestalt psychology; his later research on posthypnotic states (e.g., POSTHYPNOTIC SUGGESTION) sought to provide evidence for Sigmund Freud's concept of REPRESENTATION.

**Berkeley, George** (1685–1753) Irish philosopher: a major architect of British EMPIRICISM; he is best known for his philosophy of IMMATERIALISM and SUBJECTIVE IDEALISM.

**Berlyne, Daniel E.** (1924–1976) British-born Canadian psychologist: his work on curiosity influenced later theories on INTRINSIC MOTIVATION; he helped reestablish EXPERIMENTAL AESTHETICS on its modern scientific footing.

**Bernard, Claude** (1813–1878) French physiologist: iden-

tified the importance of maintaining stability within the INTERNAL ENVIRONMENT (later named HOMEOSTASIS by Walter B. Cannon) which has been applied in experimental and physiological psychology research.

**Bevan, William** (1922–2007) U.S. psychologist: influential in cognitive psychology, he launched the Duke Talent Identification Program to identify and nurture gifted children; he helped delineate and establish the role of the psychologist in interdisciplinary science.

**Bills, Marion Almira** (1889–1970) U.S. industrial and organizational psychologist: carried out research on job retention, articulated the concept of JOB SATISFACTION, and developed an early JOB EVALUATION program.

**Binet, Alfred** (1857–1911) French psychologist: often considered the initiator of the modern approach to intelligence testing, especially as the developer with French physician Théodore Simon (1873–1961) of the Binet–Simon Scale (see STANFORD–BINET INTELLIGENCE SCALE).

**Bingham, Walter Van Dyke** (1880–1952) U.S. psychologist: a founder of industrial and organizational psychology and a key figure in the development of the U.S. Army aptitude and achievement testing program during World War I (see ARMY TESTS).

**Blatz, William Emet** (1895–1964) Canadian child psychologist: studied the Dionne quintuplets from 1935 to 1938 in an attempt to determine environmental influences on heredity; he originated SECURITY THEORY.

**Blau, Theodore H.** (1928–2003) U.S. clinical and forensic psychologist: after decades as an educator and in private practice, he became a police inspector with a focus on POLICE PSYCHOLOGY and FORENSIC PSYCHOLOGY; he created important tools for neuropsychological assessment; he was the first independent clinical psychologist to serve as president of the American Psychological Association (1977).

**Bleuler, Paul Eugen** (1857–1939) Swiss psychiatrist: best known for naming schizophrenia and for his theory of its basic underlying symptomatology; he advocated psychosocial treatments for people with severe mental illness and introduced OCCUPATIONAL THERAPY.

**Boring, Edwin Garrigues** (1886–1968) U.S. psychologist: a leader in the field of experimental psychology; his influential *History of Experimental Psychology* (1929; revised 1950) was required reading in psychology graduate programs for several decades.

**Bowlby, Edward John Mostyn** (1907–1990) British psychiatrist and psychoanalyst: best known for developing ATTACHMENT THEORY; he also proposed the INTERNAL WORKING MODEL OF ATTACHMENT, partially based on his work on maternal deprivation.

**Braid, James** (1795–1860) Scottish physician: his investigation of the effects of ANIMAL MAGNETISM led to his development of the theory, nomenclature, and method of hypnotism (see HYPNOSIS).

**Bray, Douglas W.** (1918–2006) U.S. industrial and organizational psychologist: instrumental in the development of the modern-day ASSESSMENT CENTER, which uses multiple evaluation techniques to identify and empower the best people for critical roles.

**Brehm, Jack W.** (1928–2009) U.S. experimental psychologist: established the free-choice cognitive dissonance paradigm; he developed REACTANCE THEORY, the theory of motivation intensity, and the theory of emotion intensity.

**Brentano, Franz** (1838–1917) German philosopher and psychologist: his research on the INTENTIONALITY of mental acts later developed into the field of ACT PSYCHOLOGY and contributed to the ARTIFICIAL INTELLIGENCE debate about whether mechanical processes can assume the intentionality of mental acts.

**Brett, George Sidney** (1879–1944) British-born Canadian philosopher and psychologist: author of the three-volume *History of Psychology* (1912–1921), which tied the development of psychology to that of philosophy by assessing the current PHILOSOPHY OF MIND theories and essentially resisting the experimentalist approach.

**Breuer, Josef** (1842–1925) Austrian physician and psychologist: best remembered for his treatment of ANNA O.; the psychoanalytic technique of FREE ASSOCIATION evolved from the concepts behind Breuer's methods.

**Bricklin, Patricia MacIntosh** (1932–2010) U.S. psychologist: a leading force in the development of principles of ethics and risk assessment and of management strategies for the practice of psychology; with her psychologist husband, Barry Bricklin, she hosted radio and television shows dealing with psychology and family issues.

**Bridgman, Percy Williams** (1882–1961) U.S. physicist: winner of the 1946 Nobel Prize for work on high-pressure physics; he developed concepts that were later embraced by psychologists as OPERATIONALISM.

**Broadbent, Donald E.** (1926–1993) British psychologist: best known for his application of communications engineering and mathematical DECISION THEORY to psychology, he developed an influential model of attention (see FILTER THEORY).

**Broca, Pierre Paul** (1824–1880) French physician and anthropologist: proved that motor aphasia (later known as BROCA'S APHASIA) was associated with the third frontal convolution of the cerebral cortex (now called BROCA'S AREA) and that fluent speech depends on this area; he was among the first to recognize the phenomenon of CEREBRAL DOMINANCE.

**Brock, Timothy C.** (1935–2009) U.S. social psychologist: contributed to the development of COGNITIVE RESPONSE THEORY; starting with his formulation of COMMODITY THEORY, he made major contributions to understanding the role of unavailability in social influence.

**Bronfenbrenner, Urie** (1917–2005) Russian-born U.S. developmental psychologist: originator of the watershed ECOLOGICAL SYSTEMS THEORY, later developed by Bronfenbrenner and others into the biocological model.

**Brown, Roger** (1925–1997) U.S. social psychologist: a classic contributor to the field of PSYCHOLINGUISTICS (particularly to the understanding of the first stages of LANGUAGE ACQUISITION); he coined the term FLASHBULB MEMORY.

**Bruner, Jerome Seymour** (1915– ) U.S. developmental psychologist: known primarily for his proposal of three modes of knowledge representation—ENACTIVE REPRESENTATION, ICONIC REPRESENTATION, and SYMBOLIC REPRESENTATION—as well as for his proposal of a LANGUAGE ACQUISITION SUPPORT SYSTEM.

**Brunswik, Egon** (1903–1955) Hungarian-born U.S. psychologist: recognized for his concept of ECOLOGICAL VALIDITY in perception and for the BRUNSWIK RATIO, a mathematical expression of PERCEPTUAL CONSTANCY.

**Bugental, James F. T.** (1915–2008) U.S. psychotherapist: one of the founders of HUMANISTIC PSYCHOLOGY; also created, with Rollo May, EXISTENTIAL-HUMANISTIC THERAPY.

**Bühler, Charlotte Malachowski** (1893–1974) German psychologist: a pioneer of lifespan developmental psychology; she was one of the founders of HUMANISTIC PSYCHOLOGY; married to Karl Bühler.

**Bühler, Karl** (1879–1963) German physiologist and psychologist: known for developing a sign-based approach to psychology and a CLINICAL INTERVIEW technique that anticipated the structured interview; married to Charlotte Malachowski Bühler.

**Burks, Barbara Stoddard** (1902–1943) U.S. psychologist: investigated the genetics of mental and behavioral traits; she carried out large-scale studies, mostly of children, to investigate the role of NATURE–NURTURE in intelligence.

**Buros, Oscar Krisen** (1905–1978) U.S. psychologist: best known as the founder of the Institute of Mental Measurements, now called the Buros Institute of Mental Measurements, and as the original developer of the *Mental Measurements Yearbook* series, which provides user-oriented reviews of standardized tests.

**Burt, Cyril Lodowic** (1883–1971) British psychologist: his main interests were FACTOR ANALYSIS in psychological testing and INDIVIDUAL DIFFERENCES; the latter area generated research that he claimed proved the heritability of intelligence, but after his death he was accused of having fabricated his heritability data; although independent research has reproduced some of his findings, the so-called Burt Affair remains unsettled.

**Calkins, Mary Whiton** (1863–1930) U.S. psychologist: her best known empirical contribution was the development of the technique of PAIRED-ASSOCIATES LEARNING for studying memory; she was the first female president of the American Psychological Association (1905).

**Campbell, Donald Thomas** (1916–1996) U.S. social psychologist: known for developing methods for determining the CONSTRUCT VALIDITY of psychological measures and for contributions to the PHILOSOPHY OF SCIENCE; he advocated designing social reforms as assessable experiments.

**Cannon, Walter Bradford** (1871–1945) U.S. physician and physiologist: known particularly for his investigations of emotion; he identified the biological mechanisms associated with the FIGHT-OR-FLIGHT RESPONSE; with physiologist Philip Bard (1898–1977), he later proposed the CANNON–BARD THEORY.

**Carmichael, Leonard** (1898–1973) U.S. psychologist and institutional administrator: conducted animal research that shed light on the role of heredity in the development of behavior; he was the seventh Secretary of the Smithsonian Institution, where he focused his tenure on improving the quality of the organization's research staff.

**Carr, Harvey A.** (1873–1954) U.S. psychologist: a leading proponent of FUNCTIONALISM, with a focus on adaptive human behavior as a manifestation of mental processes, on MAZE LEARNING in rats, and on visual and spatial perception.

**Cattell, James McKeen** (1860–1944) U.S. psychologist: an early and influential journal editor; he devised the first battery of psychological tests of special abilities and co-founded the Psychological Corporation.

**Cattell, Raymond Bernard** (1905–1998) British psychologist: he developed with colleagues several personality inventories, including the widely used SIXTEEN PERSONALITY FACTOR QUESTIONNAIRE; he also originated a theory of intelligence that was further developed by U.S. psychologist John L. Horn (1928–2006), now called the CATTELL–HORN THEORY OF INTELLIGENCE.

**Charcot, Jean-Martin** (1825–1893) French neurologist: sometimes called the “father of neurology” for his pioneering research on such disorders as locomotor ataxia, multiple sclerosis, and Parkinson’s disease; his research on hysteria greatly influenced the early work of his students Sigmund Freud and Alfred Binet.

**Chomsky, Noam** (1928– ) U.S. linguist: known for his revolutionary TRANSFORMATIONAL GENERATIVE GRAMMAR, which remains both influential and controversial.

**Claparède, Édouard** (1873–1940) Swiss neurologist and child psychologist: a key figure in the CHILD STUDY MOVEMENT and in PROGRESSIVE EDUCATION; he demonstrated the importance of intelligence testing in the educational context; he also contributed significant research on the biology of sleep.

**Clark, Kenneth Bancroft** (1914–2005) U.S. psychologist: the first African American president of the American Psychological Association (1971); his work on the relationship between self-esteem and skin color in children was influential in the U.S. Supreme Court’s 1954 ruling in *Brown v. Board of Education*, which banned racial segregation in U.S. public schools.

**Comte, Auguste** (1798–1857) French philosopher: a founder of POSITIVISM and sociology, he was one of the most influential philosophers of the 19th century.

**Condillac, Étienne Bonnot de** (1715–1780) French philosopher: author of works on logic, language, and philosophy; he built on John Locke’s belief that ideas originate in sensations, proposing that language is the mechanism by which sensations become ideas.

**Cronbach, Lee J.** (1916–2001) U.S. psychologist: an influential contributor to the topic of test validity and the developer of CRONBACH’S ALPHA.

**Csikszentmihalyi, Mihalyi** (1934– ) Hungarian-born U.S. psychologist: emigrated to the United States after the Hungarian Uprising of 1956 and became an influential generalist; his work led from the psychology of creativity to the cognitive-emotional concept of the FLOW state (of focused absorption in tasks) and to the genesis of POSITIVE PSYCHOLOGY.

**Dallenbach, Karl M.** (1887–1971) U.S. psychologist: best known for his nearly 50-year stewardship of the *American Journal of Psychology*, from the early 1920s to 1968; he also devised the DALLENBACH STIMULATOR for measuring temperature sensitivity.

**Darwin, Charles R.** (1809–1882) British naturalist: his theory of NATURAL SELECTION, published in *On the Origin of Species by Means of Natural Selection* in 1859, and similar to one proposed at the same time by British naturalist Alfred Russel Wallace (1823–1913), has had significant and ongoing influence in various approaches to psychology, including comparative psychology, evolutionary psychology, and sociobiology.

**Dashiell, John Frederick** (1888–1975) U.S. psychologist: a pioneer in the experimental study of learning; he

published extensively on MAZE LEARNING in rats and was the author of the first laboratory procedures manual for psychology undergraduates and the first introductory textbook of behavioral psychology.

**Delboeuf, Joseph-Rémi-Léopold** (1831–1896) Belgian philosopher and psychologist: recognized for his investigation of what became known as the DELBOEUF ILLUSION and especially for his 1885 investigation of claims by the SALPÊTRIÈRE school that memory loss was a typical result of the hypnotic state.

**Descartes, René** (1596–1650) French philosopher and mathematician: known to psychologists primarily for his assertion that the mind is wholly distinct from the body (CARTESIAN DUALISM), for several epistemological concepts, such as the rational subject or ego capable of intuitively knowing truth (CARTESIAN SELF), and for initiating the philosophical tradition of RATIONALISM in Europe; his influence in the field of mathematics remains impressive—among other credits he is called the “father of analytical geometry.”

**Dewey, John** (1859–1952) U.S. philosopher, educator, and psychologist: a founder of FUNCTIONALISM; his work deeply influenced the field of education.

**Dinsmoor, James** (1921–2005) U.S. behavioral psychologist: analyzed DISCRIMINATION LEARNING in two main areas, AVOIDANCE CONDITIONING and OBSERVING RESPONSES; he demonstrated that organisms will not continue responding to signals that provide only negative information.

**Dix, Dorothea Lynde** (1802–1887) U.S. social reformer: a tireless advocate for the plight of the mentally ill under state care, she was responsible for the founding of over 30 psychiatric hospitals throughout the United States and overseas.

**Doll, Edgar Arnold** (1889–1968) U.S. psychologist: best known for the development of the Vineland Social Maturity Scale, the antecedent of the now widely used VINELAND ADAPTIVE BEHAVIOR SCALES for assessing a person’s communication, daily living, socialization, and motor skills.

**Dollard, John** (1900–1980) U.S. social scientist: developer of the FRUSTRATION–AGGRESSION HYPOTHESIS; he is also known for his work (with Neal E. Miller) on the importance of IMITATION in social behavior and learning.

**Donders, Franciscus Cornelis** (1818–1889) Dutch physiologist and ophthalmologist: contributed to experimental psychology through his work on color vision, his principle of visual fixation (DONDESS’S LAW), and his procedure for estimating the duration of mental processes (DONDESS’S METHOD).

**Dunlap, Knight** (1875–1949) U.S. psychologist: developed a neuropsychological model correlating consciousness with neural-motor circuits; he developed a negative practice technique for eliminating stuttering, tics, and similar behavior; and he proposed “response psychology,” a functionalist-oriented approach with practical applications.

**Durkheim, Émile** (1858–1917) French sociologist: known especially for his theories of suicide and his schematic categorization encompassing four types—egoistic (resulting from a sense of social failure), altruistic (self-sacrifice to save others), anomic (resulting from social alienation), and fatalistic (resulting from excessive social regulation).

**Ebbinghaus, Hermann** (1850–1909) German psycholo-

gist: a pioneer in the application of quantitative methods to the study of higher mental processes and in establishing experimental psychology as a scientific discipline.

**Ehrenfels, Christian von** (1859–1932) Austrian philosopher: best known for his 1890 paper on Gestalt qualities, a precursor to Gestalt psychology; he proposed that whole forms are not just the sum of their parts but are perceived to have new qualities of their own.

**Eibl-Eibesfeldt, Irenäus** (1928– ) Austrian ethologist: his work contributed to the scientific and popular literature on ANIMAL BEHAVIOR, including species-typical phenomena in humans, such as SEMIOTICS, time concepts, HANDEDNESS, adult–infant interactions, and aggression.

**Ellis, Albert** (1913–2007) U.S. psychotherapist: developed his own approach to psychotherapy, RATIONAL EMOTIVE BEHAVIOR THERAPY, based on his ABC THEORY.

**Engen, Trygg** (1926–2009) Norwegian-born U.S. psychologist: originated the psychological study of OLFACTION; he studied odor hedonics and memory; the role of language, context, and expectation in odor experience; and environmental odor perception.

**Erickson, Milton Hyland** (1901–1980) U.S. psychiatrist: developed the hypnosis- and metaphor-based therapy known as ERICKSONIAN PSYCHOTHERAPY.

**Erikson, Erik H.** (1902–1994) German-born U.S. psychologist: preeminent personality theorist and contributor to the field of EGO PSYCHOLOGY; he is known for his theory of life stages (see ERIKSON'S EIGHT STAGES OF PSYCHOSOCIAL DEVELOPMENT) and as the originator of the term IDENTITY CRISIS.

**Eron, Leonard D.** (1920–2007) U.S. psychologist: initiated the Columbia County Longitudinal Study in 1960, which lasted over 40 years and found that violence on television is associated with aggression in children, a finding still considered controversial by some researchers.

**Estes, William Kaye** (1919–2011) U.S. psychologist: a founder of MATHEMATICAL PSYCHOLOGY and a pioneer (with B. F. Skinner) in the use of CONDITIONED RESPONSES involving negative emotions (e.g., fear, anxiety).

**Eysenck, Hans Jurgen** (1916–1997) German-born British psychologist: made significant contributions to personality theory through his classification of personality types (see EYSENCK'S DIMENSIONS) and the EYSENCK PERSONALITY INVENTORY; popularized the terms *introvert* and *extravert*.

**Fantz, Robert L.** (1925–1981) U.S. developmental psychologist: established that newborn infants possess well-developed perceptual systems; he developed the PREFERENTIAL LOOKING TECHNIQUE to study infant perceptual abilities.

**Fechner, Gustav Theodor** (1801–1887) German physician and philosopher: originator of PSYCHOPHYSICS, he developed still-used methods to study sensations, including the METHOD OF ADJUSTMENT and the METHOD OF CONSTANT STIMULI; he also developed the mathematical formula called FECHNER'S LAW.

**Ferenczi, Sándor** (1873–1933) Hungarian psychoanalyst: an early associate of Sigmund Freud, he advocated an ACTIVE THERAPY as an alternative to Freud's psychoanalytic approach; he also advanced the concept of BRIEF PSYCHODYNAMIC PSYCHOTHERAPY with Otto Rank.

**Festinger, Leon** (1919–1989) U.S. social psychologist:

best known for his theory of COGNITIVE DISSONANCE and his research on GROUP COHESION, CONFORMITY, and SOCIAL COMPARISON THEORY.

**Fiedler, Fred** (1922– ) Austrian-born U.S. psychologist: studied the importance of personality factors and psychological distance in leadership; he developed the prototypical CONTINGENCY THEORY OF LEADERSHIP and the COGNITIVE RESOURCE THEORY, as well as the LEAST PREFERRED WORKER SCALE, a measure of leadership style.

**Fisher, Ronald Aylmer** (1890–1962) British statistician and geneticist: a major contributor to the study of genetics and evolutionary theory; he is well-known for developing the ANALYSIS OF VARIANCE and the FISHER EXACT TEST, among other statistical procedures.

**Flavell, John** (1928– ) U.S. developmental psychologist: introduced the concept of METACOGNITION into developmental psychology; he notably studied the development of children's THEORY OF MIND.

**Flourens, Marie-Jean-Pierre** (1794–1867) French physiologist: among his contributions were a sharp critique of PHRENOLOGY, a holistic model of brain function, and experiments suggesting that the cerebellum is responsible for motor coordination.

**Flournoy, Théodore** (1854–1920) Swiss physician and psychologist: best known for investigations of paranormal phenomena, most famously captured in *From India to the Planet Mars: A Case of Multiple Personality With Imaginary Languages* (1900), considered a classic in the field of psychoanalysis because of its implicit emphasis on the unconscious mind at work.

**Foucault, Michel** (1926–1984) French philosopher and cultural historian; his works *Madness and Civilization: A History of Insanity in the Age of Reason* (1964) and *Discipline and Punishment: The Birth of the Prison* (1975) were influential in injecting the sensibility of POSTMODERNISM into American psychologists' views of the relation between psychology and society.

**Frank, Jerome David** (1910–2005) U.S. psychiatrist: author of *Persuasion and Healing* (1961); its third edition, written with his daughter Julia B. Frank, posited four healing factors shared by different types of psychotherapy: the therapist–patient relationship; the setting; a rationale or myth explaining the patient's symptoms; and a shared belief in a ritual or procedure to restore the patient's health.

**Frankl, Viktor Emil** (1905–1997) Austrian psychiatrist: a chief exponent of existential psychology; his approach to psychological treatment, LOGOTHERAPY, focuses on crises of meaning and is often referred to as the “third Viennese school of psychotherapy” (after Sigmund Freud's psychoanalysis and Alfred Adler's individual psychology).

**Franz, Shepherd Ivory** (1874–1933) U.S. neuropsychologist: wrote the *Handbook of Mental Examination Methods* (1912) for use with psychiatric patients and *Nervous and Mental Re-Education* (1923) on the rehabilitation of brain-injured war veterans and other neurologically impaired patients; he is often considered to be the first U.S. clinical neuropsychologist.

**Freud, Anna** (1895–1982) Austrian-born British psychoanalyst: her studies on DEFENSE MECHANISMS and pioneering work in CHILD ANALYSIS were original contributions to psychoanalysis; the youngest daughter of Sigmund Freud.

**Freud, Sigmund** (1856–1939) Austrian neurologist and

psychiatrist: invented psychoanalysis and developed many of its central theoretical concepts (e.g., DEFENSE MECHANISMS, PSYCHOSEXUAL DEVELOPMENT, TRANSFERENCE) and methods of practice, such as FREE ASSOCIATION and DREAM ANALYSIS.

**Fromm, Erich** (1900–1980) German-born U.S. psychoanalyst, personality theorist, and social philosopher: formulated a broad cultural, yet personal, approach to analysis that focused on the search for meaning, the development of socially productive relationships, individuality, and the need to belong.

**Fromm-Reichmann, Frieda** (1889–1957) German psychiatrist: developed an approach to working with “unanalyzable” psychotic patients that emphasized a validating, empathic therapeutic relationship; she was the model for “Dr. Fried” in the bestselling book *I Never Promised You a Rose Garden* (1964) by her former patient Joanne Greenberg, and she was the first woman Fellow of the Center for Advanced Study in the Behavioral Sciences at Stanford University.

**Gagné, Robert Mills** (1916–2002) U.S. experimental psychologist and learning theorist: proposed a hierarchical system of skill acquisition; his book *The Conditions of Learning* (1965) is a classic in the field, bridging behaviorist and cognitive accounts.

**Galen** (c. 130–c. 210 CE) Greek physician: his huge body of written work, much of it extant, synthesized the doctrines of ancient medicine and demonstrated his all-inclusive psychophysiological system of thought; his works became the source material from which many medieval and early modern scholars developed their psychophysiological theories.

**Galton, Francis** (1822–1911) British scientist: developed theories about the HERITABILITY and selective breeding of human intelligence, from which emerged the idea of intelligence tests and the movement he later called EUGENICS; he also introduced techniques of statistical CORRELATION; a cousin of Charles Darwin.

**Garner, Wendell Richard** (1921–2008) U.S. experimental psychologist: introduced SYSTEMS ANALYSIS to psychological research; he shaped research in perception, cognition, and PATTERN RECOGNITION and redefined perceptual stimuli in terms of attributes, alternatives, and attention; his contributions to methodology remain central to many research programs.

**Gemelli, Agostino** (1878–1959) Italian psychologist: a promoter of practical, applied psychology, he cofounded an influential European academic journal on psychology, neurology, and psychiatry; he was an ordained Franciscan priest.

**Gesell, Arnold L.** (1880–1961) U.S. psychologist and physician: formalized the first school psychologist position in the United States; he established special education classrooms, pioneered the cotwin technique to study the impact of learning and heredity (see TWIN STUDY), and advanced the concept of SCHOOL READINESS.

**Gibson, Eleanor Jack** (1910–2002) U.S. experimental psychologist: best known for her research on perceptual learning, especially on the VISUAL CLIFF, which she originated with Richard D. Walk; married to James J. Gibson.

**Gibson, James Jerome** (1904–1979) U.S. experimental psychologist: a highly influential researcher in the area of visual (and other sense) perception, known especially for developing the theory of ECOLOGICAL PERCEPTION, empha-

sizing the functional relations between perception and environment; married to Eleanor J. Gibson.

**Gilbreth, Lillian Moller** (1878–1972) U.S. psychologist: best known, with her husband Frank (an engineer), for developing the set of principles known as MOTION ECONOMY and for TIME AND MOTION STUDIES; she inspired a book and a beloved motion picture of family life, *Cheaper by the Dozen*, based on the experiences of her own family.

**Goddard, Henry Herbert** (1866–1957) U.S. psychologist: a founder of intelligence testing in the United States, he was influential in the fields of SPECIAL EDUCATION, intellectual disability, and Army testing; he is also known for a 1921 hereditarian study of moral degeneracy and intellectual disability (see KALLIKAK).

**Goldman-Rakic, Patricia** (1937–2003) U.S. neuropsychologist: investigated the frontal lobe, mapping its connections to other brain regions, as well as the distribution of its neurotransmitters, and demonstrating that it is the site of WORKING MEMORY; she also conducted several studies demonstrating the correlation between frontal activity and schizophrenic symptoms.

**Goldstein, Kurt** (1878–1965) German-born U.S. neurologist: his investigations of neurological impairments resulted in the influential proposal that manifestations of brain damage (e.g., regression to concrete thinking) are often an individual’s adaptive response to an impaired ability to form a whole perception of the outside world.

**Goodenough, Florence** (1886–1959) U.S. psychologist: developed widely used tests of intelligence and verbal intelligence in children, adapting the Stanford–Binet Intelligence Scale for use with preschoolers (as the Minnesota Preschool Scale); she formulated the method now known as TIME SAMPLING.

**Graham, Clarence Henry** (1906–1971) U.S. psychologist: known for research on vision and visual perception, motor discrimination, and movement perception.

**Griffith, Coleman Roberts** (1893–1960) U.S. psychologist: known as the “father of sport psychology,” he established the first laboratory in the United States to investigate psychological and physiological problems associated with sports and athletic performance.

**Guilford, Joy Paul** (1897–1987) U.S. psychologist: best known for his contributions to PSYCHOMETRICS and for his use of FACTOR ANALYSIS in personality, creativity, and intelligence research.

**Guion, Robert M.** (1924–2012) U.S. psychologist: known for his significant contributions to the theory and practice of industrial and organizational psychology, including two classic textbooks, *Personnel Testing* (1965) and *Assessment, Measurement, and Prediction for Personnel Decisions* (1998).

**Gulliksen, Harold** (1903–1996) U.S. psychologist: a founder of the PSYCHOMETRIC SOCIETY; he is known for his applications of mathematical methods to psychophysics, learning theory, and attitude measurement, which contributed to advancements in PAIRED COMPARISON scaling and MULTIDIMENSIONAL SCALING.

**Guthrie, Edwin Ray** (1886–1959) U.S. psychologist: best known for developing a variation in behaviorist theory termed CONTIGUITY LEARNING THEORY; he also pioneered the use of teaching evaluations for college faculties.

**Hackman, J. Richard** (1940–2013) U.S. psychologist: best known for proposing, with U.S. organizational behav-

iorist Greg R. Oldham (1947– ), the JOB-CHARACTERISTICS MODEL, delineating basic parameters of a job as they affect employee motivation, and for designing the JOB DIAGNOSTIC SURVEY, a measure of motivational job components as identified in the model; he also made significant contributions to the study of group behavior, particularly the performance and effectiveness of teams.

**Hall, Granville Stanley** (1844–1924) U.S. psychologist: a founder and organizer of psychology in the United States and the first president of the American Psychological Association (1892); he launched the CHILD STUDY MOVEMENT, the first organized effort to apply scientific methods to the study of children.

**Hamilton, William** (1788–1856) Scottish philosopher: his intellectual contributions include the law of REDINTEGRATION to describe recollection of memory from combined mental associations or partial cues; his understanding of consciousness as a function of cognition, feeling, and desire; his belief in the reality of nonconscious modifications of mind; and his identification of attention as a key feature of intelligence.

**Harlow, Harry Frederick** (1905–1981) U.S. psychologist: best known for investigations on LEARNING SETS and on mothering that showed that nonhuman animals are capable of higher levels of information processing or METACOGNITION; he also studied social development in rhesus monkeys (see MOTHER SURROGATE).

**Hartley, David** (1705–1757) British philosopher and psychologist: his *Observations on Man: His Frame, His Duty, and His Expectations* (1749) attempted to integrate ASSOCIATIONISM with a neurophysiology-based explanation of human experience; it was also the first work in English to use the word *psychology* in the modern sense.

**Hathaway, Starke Rosencrans** (1903–1984) U.S. psychologist: developer, in collaboration with neuropsychiatrist John C. McKinley, of the MINNESOTA MULTIPHASIC PERSONALITY INVENTORY; he advocated for the establishment of the PsyD degree in practical clinical psychology.

**Head, Henry** (1861–1940) British neurologist: remembered chiefly for his taxonomy of aphasia and for his theory characterizing all types of aphasia as cognitive disturbances of symbolic formation and expression; he coined the term SEMANTIC APHASIA.

**Hebb, Donald Olding** (1904–1985) Canadian psychobiologist: an important contributor to the understanding of the brain–behavior relationship; his proposal of CELL ASSEMBLY remains influential in biological theories of learning and memory.

**Heidbreder, Edna** (1890–1985) U.S. psychologist: participated in the development of the Minnesota Mechanical Abilities Test; she is best known for her book *Seven Psychologies* (1933), an analysis of seven systems of psychology (e.g., psychoanalysis, Gestalt), which remains a fundamental text on the history of the field.

**Heider, Fritz** (1896–1988) Austrian-born U.S. psychologist: a preeminent theorist on interpersonal relations, he established the conceptual foundations for much of social psychology research (e.g., ATTRIBUTION THEORY, BALANCE THEORY).

**Helmholtz, Hermann Ludwig Ferdinand von** (1821–1894) German physiologist and physicist: a founder of psychosensory physiology; his research laid the foundations of

modern visual and auditory science (see YOUNG–HELMHOLTZ THEORY OF COLOR VISION).

**Helson, Harry** (1898–1977) U.S. psychologist: developed ADAPTATION LEVEL theory to describe the effects of context on subjective judgment.

**Hering, Ewald** (1834–1918) German physiologist: his sensory perception research (see HERING THEORY OF COLOR VISION) influenced the development of German psychology and the school of PHENOMENOLOGY.

**Hickok, Laurens Perseus** (1798–1888) U.S. philosopher and clergyman: his most important work, *Rational Psychology* (1849), was the first published example of systematic psychology as a science in America; he also published a college text, *Empirical Psychology* (1854), an introspective study of the human mind.

**Hilgard, Ernest R.** (1904–2001) U.S. psychologist: an influential researcher and synthesizer in the fields of conditioning, learning theory, and HYPNOSIS; he also proposed NEODISSOCIATION THEORY.

**Hobbes, Thomas** (1588–1679) English philosopher: a philosophical source of SOCIAL CONTRACT theory; his belief in MATERIALISM contributed significantly to British EMPIRICISM; his emphasis on physiological principles of perception, cognition, and emotion are said to have influenced the later development of some aspects of BEHAVIORISM.

**Hollingworth, Harry L.** (1880–1956) U.S. psychologist: a pioneer in applied psychology and coauthor of the first textbook in that field; particularly known for his work in ADVERTISING PSYCHOLOGY; married to Leta S. Hollingworth.

**Hollingworth, Leta Stetter** (1886–1939) U.S. psychologist: a major contributor in educational psychology, clinical psychology, and the psychology of women; her work in education focused on both children with intellectual disabilities and gifted children; married to Harry L. Hollingworth.

**Holzman, Philip S.** (1922–2004) U.S. clinical psychologist and psychoanalyst: helped establish genetic causation of schizophrenia through research on eye tracking dysfunction (ETD) in patients and their clinically healthy relatives; with his colleagues, he confirmed the link between ETD and a locus on chromosome 6; he also established the concept of cofamilial traits as alternative expressions of schizophrenia genes.

**Hooker, Evelyn** (1907–1996) U.S. psychologist: conducted the first major controlled study in which groups of gay and heterosexual men were compared on psychological measures of adjustment and not found to be different; her findings influenced the American Psychiatric Association in its decision to remove homosexuality from the *Diagnostic and Statistical Manual of Mental Disorders*.

**Horney, Karen D.** (1885–1952) German-born U.S. psychoanalyst: the first great psychoanalytic feminist and a member of the NEO-FREUDIAN school; she stressed culture and disturbed interpersonal relationships as the causes of neuroses, emphasized the importance of focusing on current defenses and inner conflicts over early experience, and is recognized as one of the founders of HUMANISTIC PSYCHOLOGY.

**Hovland, Carl Ivor** (1912–1961) U.S. psychologist: contributor to the development of NEOBEHAVIORISM—through his research on the generalization of conditioning—and a pioneer in computer studies simulating human concept



formation and thinking; he studied the processes by which persuasive messages change attitudes.

**Howes, Ethel Dench Puffer** (1872–1950) U.S. psychologist: published *The Psychology of Beauty* (1905), based on her research on art and aesthetics; with her career essentially ended after she married in 1908, she became a feminist pioneer, focusing on discrimination by the academic community against women and on the inequality imposed on women in having to choose between motherhood and career.

**Hull, Clark Leonard** (1884–1952) U.S. psychologist: originator of the influential DRIVE-REDUCTION THEORY and one of the founders of NEOBEHAVIORISM.

**Hume, David** (1711–1776) Scottish philosopher, historian, and political economist: a major figure in the philosophical tradition of EMPIRICISM; a proponent of radical SKEPTICISM, he posited that the self is a mental construct produced solely by the laws of association and challenged the notion of certainty in science and religion.

**Humphreys, Lloyd Girton** (1913–2003) U.S. psychometrist: trained in FACTOR ANALYSIS, he became a testing specialist and a lifelong champion of accuracy in measurement; he also contributed to the understanding of INDIVIDUAL DIFFERENCES, human ability, and intelligence and to defining CONSTRUCT VALIDITY.

**Hunt, Joseph McVicker** (1906–1991) U.S. psychologist: known for his “feeding frustration” studies in rats, which demonstrated a link between early food deprivation and adult HOARDING behavior, and for his A/S ratio (the ratio of association to sensory areas in the brain), which highlighted the importance of INTRINSIC MOTIVATION; he laid the conceptual foundations for programs (e.g., HEAD START) emphasizing the value of early childhood education in cognitive development.

**Hunter, Walter S.** (1889–1954) U.S. psychologist: known especially for his studies of animal cognition, such as the DELAYED-RESPONSE phenomenon; he later contributed to the study of MAZE LEARNING in animals and was a major force in establishing psychology’s credibility as an experimental science in the United States.

**Hurvich, Leo M.** (1910–2009) U.S. psychologist: with his wife, U.S. researcher Dorothea Jameson, he validated the OPPONENT PROCESS THEORY OF COLOR VISION through studies on the perception of hue, saturation, and brightness under a wide variety of viewing conditions.

**Irion, Arthur L.** (1918–1999) U.S. experimental psychologist: studied REMINISCENCE and RETENTION in learning as a function of rest and practice, as well as other memory-related phenomena.

**Itard, Jean-Marc-Gaspard** (1775–1838) French physician: best known for his work with the so-called WILD BOY OF AVEYRON, beginning around 1800 and reported in articles in 1801 and 1807; his intensive educational program with the boy is considered an important early development in the SPECIAL EDUCATION of children with intellectual and developmental disabilities, an effort that was further advanced by Itard’s student, Édouard Séguin.

**Izard, Carroll E.** (1923– ) U.S. psychologist: best known for his groundbreaking research on the psychology of emotions, for his DIFFERENTIAL EMOTIONS THEORY, and for his MAXIMALLY DISCRIMINATIVE FACIAL MOVEMENT CODING SYS-

TEM of emotional expressions in infants and young children.

**Jackson, John Henry** (1922–2008) U.S. educational psychologist: published on many topics in school psychology and on minority affairs relevant to schoolchildren and psychologists; he was the first African American recipient of the American Psychological Association Division of School Psychology’s Distinguished Service Award.

**Jackson, John Hughlings** (1835–1911) British neurologist and theorist: chiefly remembered for his studies of epilepsy and aphasia; his evolutionary brain theory later influenced Sigmund Freud’s archaeological conception of mind, Kurt Goldstein’s theories of cortical organization, and Paul MacLean’s concept of the TRIUNE BRAIN.

**James, William** (1842–1910) U.S. psychologist and philosopher: one of the principal founders of psychology in the United States and, arguably, the most influential of the first generation of American psychologists; his promotion of FUNCTIONALISM in psychology and his pioneering contributions to the PSYCHOLOGY OF RELIGION had enduring effects; he served two terms as president of the American Psychological Association (1894 and 1904).

**Jameson, Dorothea** (1920–1998) U.S. researcher: with her husband, U.S. psychologist Leo Hurvich, she validated the OPPONENT PROCESS THEORY OF COLOR VISION through studies on the perception of hue, saturation, and brightness under a wide variety of viewing conditions.

**Janet, Pierre** (1859–1947) French psychologist and neurologist: his analysis emphasizing observable behavior and the continuity of unconscious and conscious events, largely dismissed by psychoanalysts of his day, has since been seen as a forerunner in the study of traumatic stress and DISSOCIATION and a precursor of INTEGRATIVE PSYCHOTHERAPY; he was an early teacher of and influence on Sigmund Freud.

**Janis, Irving Lester** (1918–1990) U.S. social and health psychologist: noted for introducing the concept of GROUP-THINK; he researched stress and decision making, especially in the contexts of individual personal health and group dynamics.

**Jastrow, Joseph** (1863–1944) Polish-born U.S. experimental psychologist: an early contributor in PSYCHOPHYSICS, particularly on how subliminal factors influence psychophysical judgments; he was influential in introducing the new scientific psychology to the American public.

**Jenkins, James J.** (1923–2012) U.S. psychologist: a leading figure in the development of cognitive psychology, he contributed to several areas of research, among them learning and memory, speech perception, aphasia, and perceptual organization.

**Jennings, Herbert Spencer** (1868–1947) U.S. zoologist: his empirical study of the behavior of lower organisms (e.g., protozoa) influenced the BEHAVIORISM of John B. Watson, and his emphasis on the primacy of observation and experiment in scientific research anticipated Percy W. Bridgman’s operational analysis (later known as OPERATIONALISM).

**Jensen, Arthur R.** (1923–2012) U.S. psychologist: best known for his work on the construct of a general factor (*g*) of intelligence, for his LEVEL I–LEVEL II THEORY of learning ability, and for his controversial article, “How Much Can We Boost IQ and Scholastic Achievement?” (1969), ques-

tioning the efficacy of educational programs (e.g., Head Start) to enhance intellectual development (see JENSENISM) and hypothesizing that individual and group differences in learning potential have both genetic and environmental components.

**Jones, Mary Cover** (1896–1987) U.S. developmental psychologist: known for her observational study of the development of infant behavior patterns, such as smiling, eye coordination, visual pursuit, and reaching, and for pioneering the use of behavior modification techniques to eliminate fear reactions in children (see IN VIVO DESENSITIZATION); she published the first scientific account of the therapeutic potential of these techniques in 1924.

**Judd, Charles Hubbard** (1873–1946) U.S. psychologist: published a 1908 study demonstrating the importance of whole-unit understanding of the principles underlying a learning task, asserting a theme that was particularly relevant to Gestalt psychology.

**Julesz, Béla** (1928–2003) Hungarian-born U.S. visual neuroscientist and theoretical psychologist: his investigation of STEREOPSIS led to his creation of RANDOM-DOT STEREOGRAMS, which became a ubiquitous feature of vision science; he also established the concept of an inner CYCLOPEAN EYE that is the primal beginning of a cascade of visual processing resulting in conscious sight.

**Jung, Carl Gustav** (1875–1961) Swiss psychiatrist and psychoanalyst: originator of ANALYTIC PSYCHOLOGY, which emphasized personality dynamics, such as conscious versus unconscious values, introversion versus extraversion tendencies, and rational versus irrational processes; he originated such theoretical constructs as ARCHETYPES, the COLLECTIVE UNCONSCIOUS, and SYNCHRONICITY.

**Kagan, Jerome** (1929– ) U.S. developmental psychologist: preeminent researcher of emotional and cognitive development in children, with a particular focus on studying the origins of temperament and its effects on behavior; he is known especially for his work on BEHAVIORAL INHIBITION and REFLECTION–IMPULSIVITY.

**Kahneman, Daniel** (1934– ) U.S. psychologist, born in British Palestine (now Israel): known for his studies, with psychologist Amos Tversky, of similarity, judgment under uncertainty, and decision making; he won a Nobel Prize in 2002 for his work, much of it with Tversky, incorporating psychological insights into economic science.

**Kant, Immanuel** (1724–1804) German philosopher: his importance to psychology lies in several areas: his distinction between perception and scientific knowledge, his affirmation of the necessity of COGNITIVE STRUCTURES for coherent human experience, his emphasis on the limits of empirical knowledge, his separation of science from metaphysics, and his legacy in shaping the thought of several personality theorists and the theories of Gestalt psychology and cognitive psychology.

**Kantor, Jacob Robert** (1888–1984) U.S. psychologist and philosopher: known for his theory of INTERBEHAVIORAL PSYCHOLOGY and for his vision of a psychological science that is naturalistic and ARISTOTELIAN.

**Kaplan, Edith** (1924–2009) U.S. psychologist: a founder of CLINICAL NEUROPSYCHOLOGY; her modifications of the WECHSLER ADULT INTELLIGENCE SCALE and the WECHSLER MEMORY SCALE led to development of the PROCESS APPROACH to neuropsychological assessment; she is perhaps

best known for her work in test development (e.g., the BOSTON NAMING TEST, among others).

**Kastenbaum, Robert J.** (1932–2013) U.S. psychologist: renowned expert on the psychology of aging and death, he published the first textbook on the subject, *Death, Society, and Human Experience* (1977), and established in 1966 the first university-based education and research center on death and dying; he is known also for such concepts as the DEATH SYSTEM and EDGE THEORY.

**Keller, Fred Simmons** (1899–1996) U.S. psychologist: known primarily for his role in disseminating the concepts of behavior analysis and for creating the first personalized system of instruction, a form of mastery learning also known as the KELLER PLAN.

**Kelley, Ann Elizabeth** (1954–2007) U.S. psychologist: a preeminent authority on the function of the NUCLEUS ACCUMBENS, studying its role in the intake of highly palatable foods and elucidating the etiology and pathophysiology of eating disorders and obesity; she further studied its role in reward and motivation and in drug abuse.

**Kelley, Harold Harding** (1921–2003) U.S. social psychologist: especially known for his formulation of ATTRIBUTION THEORY; he conducted pioneering research on communication, persuasion, the social psychology of groups, and interpersonal relations and was the codeveloper with John W. Thibaut of SOCIAL EXCHANGE THEORY and INTERDEPENDENCE THEORY.

**Kelly, George Alexander** (1905–1967) U.S. psychologist: known for the theory and methods set forth in his 1955 masterwork, *The Psychology of Personal Constructs* (see PERSONAL CONSTRUCT).

**Kiesler, Charles Adolphous** (1934–2002) U.S. social psychologist: with interests in mental health services and particularly inpatient services in psychiatric hospitals, he became a staunch advocate of the DEINSTITUTIONALIZATION movement of the 1980s.

**Kimble, Gregory A.** (1917–2006) U.S. psychologist and educator: developed an organizing framework of psychology (functional behaviorism) based on an S–R formulation in which S (stimulus) includes a wide array of antecedent conditions, such as historical and genetic antecedents, and R (response) represents the observable consequences.

**Kinsey, Alfred** (1894–1956) U.S. zoologist and sex researcher: an influential researcher on human sexual behavior, he presented the first statistical data on a large range of sexual behaviors in both sexes, publishing the data in two books in 1948 and 1953 (also known as the “Kinsey reports”); his KINSEY SCALE offers an index of sexual orientation on a continuum from *exclusively homosexual* to *exclusively heterosexual*.

**Klein, Melanie** (1882–1960) Austrian-born British psychoanalyst: a pioneer in CHILD ANALYSIS and the first to use PLAY THERAPY as an analytic and treatment technique; her approach emphasized primal conflicts and the primary object relationship with the mother (see OBJECT RELATIONS THEORY).

**Klineberg, Otto** (1899–1992) Canadian-born U.S. social psychologist: a seminal figure through his research on race, which challenged racial superiority theories and contributed to the U.S. Supreme Court’s 1954 ruling in *Brown v. Board of Education*; he also focused on cross-cultural studies and international affairs.

**Koch, Sigmund** (1917–1996) U.S. psychologist: known for *Psychology: A Study of Science* (1959–1963), a six-volume survey of conflicting perspectives of psychology in the mid-20th century, he promoted an empirically grounded, rationally defensible investigation in a field that he claimed could never become a single, coherent discipline.

**Koffka, Kurt** (1886–1941) German Gestalt psychologist: one of the founders of and a chief spokesperson for Gestalt psychology; after his early migration to the United States, he became a major influence on the development of James J. Gibson's holistic views of perception.

**Kohlberg, Lawrence** (1927–1987) U.S. psychologist: originator of the groundbreaking KOHLBERG'S THEORY OF MORAL DEVELOPMENT; his promotion and use of interview format was also influential.

**Köhler, Wolfgang** (1887–1967) German experimental psychologist: one of the founders of Gestalt psychology, he was the most prolific theorist of the Gestalt movement and summarized its aims in *The Place of Value in a World of Facts* (1938); his contributions in primate learning (see INSIGHT LEARNING) remain influential.

**Kraepelin, Emil** (1856–1926) German psychiatrist: a founder of modern psychiatry and a pioneer theorist and researcher on serious mental disorder; his development of the concept of DEMENTIA PRAECOX was the forerunner of the modern concept of schizophrenia; his taxonomy of mental disorders was an important precursor of modern psychiatric diagnostic systems.

**Krasner, Leonard** (1924–2007) U.S. experimental psychologist: collaborated with Leonard Ullmann on work on VERBAL CONDITIONING and on two landmark books on behavior modification; he later focused on behavioral approaches to community psychology, which he called *environmental design*.

**Krech, David** (1909–1977) Russian-born U.S. psychologist: a major contributor in physiological psychology (e.g., on the brain–behavior relationship) and social psychology (e.g., on racial prejudice, international conflict).

**Kübler-Ross, Elisabeth** (1926–2004) Swiss-born U.S. psychiatrist and thanatologist: best known for her theory of five STAGES OF GRIEF and her explanation of the coping strategies that occur during the dying process, as introduced in *On Death and Dying* (1969).

**Külpe, Oswald** (1862–1915) German psychologist and philosopher: established the conceptual foundations of and provided the philosophical context for the WÜRZBURG SCHOOL of experimental research on higher mental processes that anticipated Edmund Husserl's PHENOMENOLOGY and influenced the Gestalt psychologists.

**Kuo, Zing-Yang** (1898–1970) Chinese psychologist: best known for his denunciation of instinct as a determinant of behavior and for his strong espousal of the role of anatomy and physiology, developmental history, and the environment in an organism's behavior.

**Ladd-Franklin, Christine** (1847–1930) U.S. psychologist and mathematician: an early authority on vision and COLOR THEORIES (see LADD-FRANKLIN THEORY).

**Lambert, Wallace E.** (1922–2009) U.S. psychologist: among the founders of PSYCHOLINGUISTICS and SOCIOLINGUISTICS, he initiated the psychological study of bilingualism.

**La Mettrie, Julien Offray de** (1709–1751) French physician and philosopher: his chief arguments were that the soul is a sensory-developed part of the brain, that thinking is a physiological process that is the province of physicians rather than theologians, and ultimately that happiness is the purpose of existence.

**Lashley, Karl Spencer** (1890–1958) U.S. neuropsychologist: a student of John B. Watson and teacher of Donald O. Hebb, his cortical ablation studies in the 1920s catalyzed the shift from BEHAVIORISM to COGNITIVE NEUROSCIENCE; also an influential contributor in animal learning, comparative psychology, and neurophysiology, he asserted that, following brain damage, healthy portions of the brain can adapt and take over the work of damaged portions (see EQUIPOTENTIALITY; MASS ACTION).

**Lavater, Johann Kaspar** (1741–1801) Swiss theologian: known for redefining PHYSIOGNOMY as the study of personality according to facial features and expression, not according to bodily structure as had traditionally been held; his physiognomic ideas influenced the development of PHRENOLOGY.

**Lazarus, Richard S.** (1922–2002) U.S. psychologist: introduced COGNITIVE APPRAISAL THEORY and extended it to COGNITIVE-MOTIVATIONAL-RELATIONAL THEORY to describe three processes in the generation of emotion (cognitive appraisal, individual motivation, and the relevance of external events); he also helped develop the WAYS OF COPING QUESTIONNAIRE, a popular tool for measuring adult processes in coping with stress.

**Le Bon, Gustave** (1841–1931) French sociologist: best known for his theories of the COLLECTIVE PSYCHOLOGY of crowds.

**Leibniz, Gottfried Wilhelm** (1646–1716) German philosopher and mathematician: defended the concept of INNATE IDEAS; he delineated APPERCEPTION as governed by innate truths of logic and mathematics; he further proposed the concept of the MONAD, an indivisible unit of existence, incorporating it into his theory of psychophysical PARALLELISM in which various monads combine to form mind and body and to operate in divine PREESTABLISHED HARMONY.

**Lewin, Kurt** (1890–1947) German-born U.S. social psychologist: the developer of FIELD THEORY, he was particularly known for experiments on leadership styles, GROUP COHESION, and GROUP DYNAMICS (a term he coined); he was a committed advocate of ACTION RESEARCH.

**Lindsley, Donald B.** (1907–2003) U.S. neurophysiologist and neuropsychologist: a pioneer in measuring brain activity connected with sensory and cognitive function, he was among the first to measure brain activity in children and fetuses; he is also known for research on the RETICULAR ACTIVATING SYSTEM.

**Lindsley, Ogden Richardson, Jr.** (1922–2004) U.S. behavioral psychologist: performed seminal methodological studies in BEHAVIORAL PHARMACOLOGY, specifically using operant conditioning procedures to measure the effects of psychotropic drugs on the behavior of people with chronic schizophrenia; he also conducted laboratory analyses of social behavior, including studies of cooperation and competition in children.

**Lindzey, Gardner** (1920–2008) U.S. psychologist: a major influence in social psychology, personality psychol-

ogy, BEHAVIORAL GENETICS, and the study of the history of psychology.

**Lloyd Morgan, Conwy** (1852–1936) British zoologist and comparative psychologist: best known for promoting a rigorous methodology for ANIMAL BEHAVIOR research and for proposing what is now called LLOYD MORGAN'S CANON, the principle that animal behavior should not be interpreted in complex psychological terms if it can be interpreted in simpler concepts.

**Locke, John** (1632–1704) English philosopher: famed for his proposal, in *An Essay Concerning Human Understanding* (1690), that the human mind at birth is a “white paper” (or TABULA RASA) upon which knowledge is inscribed through sensory experience and, to a lesser extent, reflection; he advocated the experimental method to validate such knowledge; *Essay* launched British EMPIRICISM as a systematic approach to philosophy.

**Loeb, Jacques** (1859–1924) German-born U.S. biophysicologist: known especially for his experiments on TROPISM, or “forced movement,” demonstrating an animal's orientation to external stimuli such as light and electricity; he also conducted seminal, and controversial, work on artificial PARTHENOGENESIS.

**Lord, Frederic Mather** (1912–2000) U.S. psychometrician: made many significant contributions to the theory and application of mental measurement, including the development of ITEM RESPONSE THEORY.

**Lorenz, Konrad Zacharias** (1903–1989) Austrian zoologist: Nobel Prize–winning cofounder of ETHOLOGY (with Nikolaas Tinbergen and Karl von Frisch); he developed several major concepts still useful for behavior study, including the FIXED ACTION PATTERN, the RELEASER, and IMPRINTING.

**Lotze, Rudolf Hermann** (1817–1881) German philosopher, psychologist, and physiologist: explained medical findings in mechanistic, physiological terms yet invoked a teleological idealist philosophy; he was highly respected as a representative of EMPIRICAL PSYCHOLOGY.

**Lovaas, Ivar** (1927–2011) Norwegian-born U.S. behavioral therapist: originated the treatment of AUTISM through continuous behavioral intervention.

**Luborsky, Lester Bernard** (1920–2009) U.S. psychologist: a pioneer of empirical research on PSYCHODYNAMIC PSYCHOTHERAPY; his CORE CONFLICTUAL RELATIONSHIP THEME method was a breakthrough in the formalization of clinical psychodynamic concepts; despite this psychodynamic emphasis, he argued that all psychotherapies are equally effective.

**Luchins, Abraham S.** (1914–2005) U.S. Gestalt psychologist: a pioneer in the field of problem solving and productive thinking, he is well known for his research on the EINSTELLUNG effect.

**Luria, Alexander R.** (1902–1977) Russian neuropsychologist: a major contributor to research on brain function and brain trauma, he developed a system of neuropsychological assessment to aid in diagnosis, treatment, and rehabilitation of individuals with brain trauma, as well as batteries such as the LURIA–NEBRASKA NEUROPSYCHOLOGICAL BATTERY; he also collaborated early in his career with Lev Vygotsky on a sociocultural theory of language.

**Lykken, David T.** (1928–2006) U.S. behavioral geneticist:

a pioneer in the study of psychopathology and of lie detection; a critic of the POLYGRAPH, he proposed the GUILTY KNOWLEDGE TEST as an alternative; he was also active in twin and family studies and proposed a genetic SET-POINT theory to account for individual differences in happiness.

**Mach, Ernst** (1838–1916) Czech-born Austrian philosopher and physicist: among his contributions to PSYCHOPHYSICS was his identification of a type of contrast illusion now called MACH BANDS, which facilitate color differentiation through sensory inhibition; his OBJECTIVE PSYCHOLOGY and psychology of science set the stage for both the Gestalt and behaviorist movements in psychology.

**Maher, Brendan A.** (1924–2009) U.S. psychologist: revolutionized the search for causes of mental illness and transformed the study of psychopathology from a descriptive enterprise to a laboratory science.

**Mahoney, Michael J.** (1946–2006) U.S. psychologist: an innovative pioneer in CONSTRUCTIVIST PSYCHOTHERAPY, he challenged the dominant paradigms of behavioral and cognitive psychology; his book *Human Change Processes* (1991) brought constructivist thought into the psychological mainstream.

**Marlatt, G. Alan** (1941–2011) Canadian-born U.S. psychologist: a pioneer in addiction research, perhaps best known for refuting the belief that addiction to alcohol or drugs can be managed only through complete abstinence and for advocating HARM REDUCTION and RELAPSE PREVENTION as effective approaches in addiction treatment.

**Marx, Karl** (1818–1883) German social and economic theorist: his various writings, including *Das Kapital*, have had a significant but mixed influence on many of the social sciences, including (obliquely) psychology; Soviet use of his ideology generated an ill-defined “Marxist psychology” now best remembered for Lev Vygotsky's 1927 rejection of it (suppressed until 1982).

**Marx, Melvin H.** (1919–2005) U.S. experimental psychologist: investigated both human and nonhuman animal learning and best known for his writings on psychological theories, including (with William Hillix) the classic textbook *Systems and Theories in Psychology*.

**Maslow, Abraham Harold** (1908–1970) U.S. psychologist: a founder of HUMANISTIC PSYCHOLOGY and the originator of MASLOW'S MOTIVATIONAL HIERARCHY.

**May, Rollo** (1909–1994) U.S. psychologist and psychoanalyst: a central proponent and spokesperson for HUMANISTIC PSYCHOLOGY and EXISTENTIAL PSYCHOLOGY; emphasized the adaptive and curative qualities of positive human values, such as love, free will, and self-awareness—themes later taken up by POSITIVE PSYCHOLOGY.

**McClelland, David** (1917–1998) U.S. psychologist: best known for theoretical and empirical contributions to the study of personality and motivation; with John W. Atkinson (1923–2003), he developed a method of scoring the highly popular THEMATIC APPERCEPTION TEST to assess ACHIEVEMENT MOTIVATION.

**McCosh, James** (1811–1894) Scottish-born U.S. philosopher and psychologist: attempted to integrate philosophy with new findings in the sciences, including psychology, while bringing to the process his own spiritual emphases.

**McDougall, William** (1871–1938) British-born U.S. psychologist: he championed several controversial ideas, particularly the concept of instinct as an innate, goal-directed

determinant (“motive power”) of perception, feeling, and behavior and as the basis of learned habits; his **HORMIC PSYCHOLOGY** encompassed human instincts (as identified and defined by him) into a systematic framework to explain social behavior.

**McGraw, Myrtle Byram** (1899–1988) U.S. developmental psychologist: a noted figure in the psychology of infant learning, she saw development in terms of overlapping, alternating, and interdependent behavior patterns; she also viewed variability in the timing and attainment of motor functions as common and normal.

**McGuire, William James** (1925–2007) U.S. psychologist: a pioneer in work on social cognition and a leading expert on attitude change, self-concept, and the psychology of persuasion; he is also known for his **INOCULATION THEORY**.

**Mead, George Herbert** (1863–1931) U.S. philosopher, social theorist, and psychologist: with John Dewey, he established the **CHICAGO SCHOOL** of **PRAGMATISM**; he was a major exponent of the theory (later named **SYMBOLIC INTERACTIONISM**) that self-concept is created through interpretation of the gestures, words, actions, and appearance of others during social interaction.

**Meehl, Paul Everett** (1920–2003) U.S. psychologist: made numerous contributions in his multifaceted areas of interest and was especially influential in establishing the superiority of actuarial prediction (see **CLINICAL PREDICTION**) over subjective judgment in clinical settings; both a practicing clinician and a major philosopher of science, he wrote extensively and influentially on the subject of these and other fields, including law.

**Meier, Manfred J.** (1929–2006) U.S. clinical psychologist: one of the most influential figures in the establishment of **CLINICAL NEUROPSYCHOLOGY** as a specialty field; he conducted significant neuropsychological research on epilepsy, stroke, and Parkinson’s disease.

**Melton, Arthur W.** (1906–1978) U.S. psychologist: known for significant research on human memory, he introduced the concepts of **ENCODING**, **STORAGE**, and **RETRIEVAL**; he also discovered the enhanced effect on memory of increasing the intervals between presentations of material to be learned (see **LAG EFFECT**).

**Mesmer, Franz Anton** (1734–1815) German physician: developed the theory that “magnetic power” in the body can be summoned (via “magnetic passes” of a physician’s hands over a patient’s body) to cure disease, which he believed to result from blockage of the flow of an invisible “fluid” called **ANIMAL MAGNETISM**; some of the effects of this approach (e.g., a trance-like state) were similar to those achieved through the later practice of **HYPNOSIS**; both Mesmer’s technique and hypnosis are sometimes referred to as *mesmerism*.

**Metzger, Wolfgang** (1899–1979) German Gestalt psychologist: known especially for exploring the minimal conditions of **DEPTH PERCEPTION**, using a uniformly lit, finely grained white sphere to create a homogeneous visual field that he called a **GANZFELD**.

**Meyer, Adolf** (1866–1950) Swiss-born U.S. psychiatrist: a leading exponent of **PSYCHOBIOLOGY**; he emphasized the importance of understanding both normal and abnormal behavior, including severe mental illness, in a holistic, biopsychosocial context.

**Michotte, Albert Édouard** (1881–1965) Belgian psychologist: remembered for experimental-phenomenological

studies of **MECHANICAL CAUSALITY** that clarify commonly experienced adaptive situations.

**Miles, Walter Richard** (1885–1978) U.S. psychologist: best known for creating the elevated, wall-less maze that made possible the study of spatial orientation in rats and for directing the Stanford Later Maturity Study, one of the earliest investigations of its kind on the effects of aging on perceptual, motor, and cognitive skills.

**Milgram, Stanley** (1933–1984) U.S. social psychologist: best known for his **BEHAVIORAL STUDY OF OBEDIENCE**; he later pioneered the field of urban psychology.

**Mill, James** (1773–1836) Scottish philosopher, historian, economist, and political theorist: a champion of **UTILITARIANISM** and rooted in the tradition of British **EMPIRICISM**, he was a major proponent of the use of associationist principles (see **ASSOCIATIONISM**) in early education; father of John Stuart Mill.

**Mill, John Stuart** (1806–1873) British philosopher: like his father James Mill, he championed **UTILITARIANISM** and was a British empiricist, his work representing in some views the culmination of associationist thought; he held that complex ideas resulted from **MENTAL CHEMISTRY** and, prefiguring Gestalt theory, proposed that they take on emergent properties that transcend the sum of their parts (see **EMERGENTISM**).

**Miller, George Armitage** (1920–2012) U.S. psychologist: known for his work in cognitive psychology, particularly communication and **PSYCHOLINGUISTICS**; best remembered for a 1956 article, “The Magical Number Seven (Plus or Minus Two): Some Limits on Our Capacity for Processing Information,” in which he identified the constant number of items (**SEVEN PLUS OR MINUS TWO**) that can be retained in short-term memory at a given time, and for his 1969 American Psychological Association presidential address, in which he urged “giving psychology away”—that is, the increased sharing of psychology’s mature scientific findings with the larger society.

**Miller, Neal Elgar** (1909–2002) U.S. psychologist: considered the founder of **BEHAVIORAL MEDICINE**; his work significantly affected the fields of learning, motivation, and clinical psychology.

**Millon, Theodore** (1928–2014) U.S. psychologist: leading theorist of personality and personality disorders who developed an influential taxonomy of maladaptive personality styles, operationalizing it with empirically grounded assessment instruments (e.g., the widely used **MILLON CLINICAL MULTIAXIAL INVENTORY**) and personalized therapeutic interventions (e.g., **PERSONALITY-GUIDED THERAPY**).

**Money, John W.** (1921–2006) New Zealand-born U.S. psychologist: best known for his research and theoretical contributions in the field of **SEXOLOGY**; he established a research unit for the long-term psychological study of **INTERSEX** and other conditions.

**Montessori, Maria** (1870–1952) Italian physician and educator: one of the first women to attend medical school in Italy, she developed a psychologically based, and still highly influential, educational system called the **MONTESSORI METHOD**.

**Moreno, Jacob Levy** (1889–1974) Romanian-born U.S. psychiatrist: founded **SOCIOMETRY** and **PSYCHODRAMA**; he was a major pioneer in group psychotherapy.

**Morgan, Clifford Thomas** (1915–1976) U.S. psycholo-

gist: known for his research on audiogenic seizure, biological drive, and auditory processing; the author of several textbooks, he was also a founder of the PSYCHONOMIC SOCIETY.

**Mowrer, Orval Hobart** (1907–1982) U.S. psychologist: best known for his contributions to the fields of learning and LANGUAGE ACQUISITION, which he explained using elementary principles of conditioning; later, he examined the role of guilt in psychological life and wrote extensively on the relation of psychology, psychiatry, and religion.

**Müller, Georg Elias** (1850–1934) German psychologist and philosopher: known especially for work in psychophysical procedures (see, e.g., the MÜLLER–URBAN PROCESS), memory, and color vision; he also proposed, with German psychologist Alfons Pilzecker (1865–1949), the PERSEVERATION–CONSOLIDATION HYPOTHESIS.

**Müller, Johannes Peter** (1801–1858) German anatomist and physiologist: recognized for his research on perception, the central nervous system, endocrinology (discovering, e.g., the role of the MÜLLERIAN DUCT in the development of female reproductive structures in mammalian embryos), hematology, and the lymphatic system; a proponent of VITALISM, he also investigated comparative zoology and anatomy.

**Münsterberg, Hugo** (1863–1916) German-born U.S. psychologist: a founder of industrial and organizational psychology, he also made early contributions to educational, abnormal, and forensic psychology (e.g., his studies of eyewitness testimony and lie detection).

**Murphy, Gardner** (1895–1979) U.S. psychologist: an influential experimental and social psychologist; he is also recognized for his guidance of U.S. psychologist Rensis Likert (1903–1981) in the development of the LIKERT SCALE: his expansive vision of the role of psychology in promoting human welfare significantly affected the post–World War II course of the American Psychological Association and of the discipline itself.

**Murray, Henry Alexander** (1893–1988) U.S. psychologist: his work ushered in a new era of personality psychology in the United States; he codeveloped the THEMATIC APPERCEPTION TEST (with Christiana Morgan).

**Myers, Charles Samuel** (1873–1946) British physician and psychologist: founded the *British Journal of Psychology* in 1904; he wrote an influential textbook on experimental psychology (1911) and, later, a textbook in applied psychology (1920); he also founded the National Institute of Industrial Psychology (1921).

**Neisser, Ulric Gustav** (1928–2012) German-born U.S. cognitive psychologist: established cognitive psychology as a field through his book *Cognitive Psychology* (1967), which synthesized decades of material on memory, perception, and thought; a proponent of the study of memory in everyday human contexts, he conceived of humans as “information processors.”

**Neugarten, Bernice Levin** (1916–2001) U.S. developmental psychologist: known for significantly advancing the study of adult development and aging; she viewed later adulthood as a period of increased activity and self-enhancement and proposed the distinctions of *young-old* and *old-old* (see ADULTHOOD).

**Newcomb, Theodore Mead** (1903–1984) U.S. social psychologist: emphasized the interdisciplinary nature of

social psychology (e.g., the integration of behavioral concepts from psychology, anthropology, and sociology); his attitudes and value research focused on real-setting social relations and placed attitude change in the context of norms, group membership, leadership, and friendship.

**Newton, Isaac** (1642–1727) British physicist and mathematician: a preeminent figure in the history of science whose writings, particularly *Philosophiae Naturalis Principia Mathematica* (Mathematical Principles of Natural Philosophy, 1687), integrated physics and astronomy to explain planetary motion and the law of gravitation; he later significantly influenced philosophy (e.g., the work of John Locke) and psychology.

**Nietzsche, Friedrich Wilhelm** (1844–1900) German philosopher: author of a vast body of writings on metaphysics, Christian morality, and ethics that later influenced currents of thought such as EXISTENTIALISM, POSTSTRUCTURALISM, and POSTMODERNISM, as well as the schools of psychology that embraced them.

**Nissen, Henry Wieghorst** (1901–1958) U.S. comparative psychologist: a leading expert on the biology and behavior of chimpanzees (e.g., in the acquisition of resources, emotional expression, and social interaction); he viewed behavioral sequences as clusters of independent acts, each with its own motivation.

**Nolen-Hoeksema, Susan** (1959–2013) U.S. psychologist: a pioneer in research on sex differences in depression, she authored a landmark 1987 article in which she cited RUMINATION in women as a significant risk factor for depression that accounts for the greater prevalence of the disorder in women than in men; her later work identified rumination as a risk factor for other disorders as well (e.g., binge eating, alcohol abuse).

**Olds, James** (1922–1976) U.S. psychologist: performed groundbreaking research that suggested the existence of PLEASURE CENTERS in the brain and that shed light on the nature of motivation, reward, reinforcement, and addiction.

**Orne, Martin Theodore** (1927–2000) Austrian-born U.S. psychologist and psychiatrist: originator of the concept of TRANCE LOGIC and the REAL–SIMULATOR MODEL; he also posited that participants in experimental research seek to understand the situation they are in through the discernment of DEMAND CHARACTERISTICS—the tendency of participants to try to respond to these cues has been named the ORNE EFFECT.

**Osgood, Charles Egerton** (1916–1991) U.S. psychologist: a significant theorist and researcher in PSYCHOLINGUISTICS and cross-cultural psychology; he developed (with George J. Suci and Percy H. Tannenbaum) the SEMANTIC DIFFERENTIAL model of determining word meanings.

**Parloff, Morris B.** (1918–2011) U.S. psychologist: developed and advanced the field of PSYCHOTHERAPY RESEARCH during his 30-year career as a researcher and administrator at the NATIONAL INSTITUTE OF MENTAL HEALTH, as well as through his work as an educator and a practitioner.

**Paterson, Donald Gildersleeve** (1892–1961) U.S. psychologist: significantly contributed to applied psychology through his studies of individual differences, test construction, personnel selection, educational counseling, and vocational counseling.

**Pavlov, Ivan Petrovich** (1849–1936) Russian physiologist: best known for experimentation on the physiology of

the digestive system and its control by the nervous system, which yielded the concepts of CLASSICAL CONDITIONING.

**Payton, Carolyn R.** (1925–2001) U.S. psychologist: a powerful advocate of the mental health needs of African Americans; her highly successful Counseling Services program at Howard University was one of the few programs at any African American institution to offer accredited training for Black therapists and counselors.

**Pearson, Karl** (1857–1936) British statistician and biometrician: as a pioneer of BIOSTATISTICS, he defined numerous methods of statistical analysis that became immensely important to various sciences (e.g., the PRODUCT-MOMENT CORRELATION COEFFICIENT); he was also influential as a biographer of Francis Galton, as a philosopher of science, and, controversially, as a proponent of eugenics.

**Peirce, Charles Sanders** (1839–1914) U.S. scientist and philosopher: known for major contributions to the mathematics of probabilities, statistics, logic, astronomy, and epistemology; he was also a founder of SEMIOTICS and, most relevant to psychology, an early exponent of PRAGMATISM.

**Peterson, Christopher M.** (1950–2012) U.S. psychologist: an educator and a founder of POSITIVE PSYCHOLOGY; he developed tests and content analyses for measuring CHARACTER STRENGTHS and well-being and coauthored with U.S. psychologist Martin E. P. Seligman (1942– ) *Character Strengths and Virtues: A Handbook and Classification* (2004); he was a pioneer in documenting empirical evidence of the link between optimism, physical health, and longevity.

**Piaget, Jean** (1896–1980) Swiss child psychologist and epistemologist: his theoretical and research work on the stages of cognitive development in children was enormously influential (see PIAGETIAN THEORY); he also proposed a stage theory of moral development (see, e.g., AUTONOMOUS STAGE) and was a central proponent of the theoretical perspective known as CONSTRUCTIVISM.

**Pick, Herbert L., Jr.** (1930–2012) U.S. psychologist: during a nearly 50-year career at the University of Minnesota's Institute of Child Development, he made major contributions to the study of perceptual learning and development and is widely credited for his seminal investigations of SPATIAL COGNITION.

**Plato** (c. 428–347 BCE) Greek classical philosopher, successor to Socrates, and teacher of Aristotle: building on the dialectic methods (see DIALECTIC TEACHING) of his teacher Socrates, Plato articulated a comprehensive philosophy encompassing not only the search for fundamental qualities such as truth and beauty but also mathematics and the practical application of logic to politics and law.

**Plutchik, Robert** (1927–2006) U.S. psychologist: developed a psychoevolutionary theory of emotion, providing a classification system for general emotional responses; he theorized that personality derives from emotions and helped to establish the study of emotion as a concern not only for psychology and psychiatry but also for other social sciences, biology, and the humanities.

**Pribram, Karl Harry** (1919– ) Austrian-born U.S. neuropsychologist and theoretical psychologist: proposed a model of brain activity that he termed *holonomic* (see HOLOGRAPHIC BRAIN THEORY) and described cognitive functions as emergent properties of the brain's reconstitution of hol-

ograms from brain waveforms; he is also known for his contributions to the understanding of WORKING MEMORY.

**Ratliff, Floyd** (1919–1999) U.S. physiological psychologist: a preeminent researcher of the neural mechanisms underlying visual perception; he introduced digital technology such as the real-time recording of neuronal responses by computer.

**Reik, Theodor** (1888–1969) Austrian-born U.S. psychoanalyst: played a central role in legitimizing the practice of psychoanalysis by nonphysicians in the United States (see LAY ANALYSIS); he founded the National Psychological Association for Psychoanalysis and placed a strong emphasis on intuition in therapy.

**Rhine, Joseph Banks** (1895–1980) U.S. parapsychologist: the first researcher to investigate a psychical topic scientifically, using ZENER CARDS (also called *Rhine cards*).

**Ribot, Théodule Armand** (1839–1916) French philosopher and psychologist: a founder of experimental psychology in France; he proposed what is now called RIBOT'S LAW, the principle that the most recently acquired memories are the most vulnerable to disruption from brain damage.

**Rogers, Carl** (1902–1987) U.S. psychologist: as the originator of CLIENT-CENTERED THERAPY, he elucidated such concepts as UNCONDITIONAL POSITIVE REGARD and UNCERTAINTY on the part of the therapist as central to the psychotherapeutic endeavor.

**Rorschach, Hermann** (1884–1922) Swiss psychiatrist: originator of the RORSCHACH INKBLOT TEST of personality, which, although still widely used, remains controversial in terms of its validity as an assessment instrument.

**Rosenzweig, Saul** (1907–2004) U.S. psychologist: the first to articulate, in 1936, the COMMON FACTORS idea later advanced in the movement toward psychotherapy integration; he pursued clinical applications of projective methods, culminating in the 1947 publication of the Rosenzweig Picture-Frustration Study, a test of latent hostility; he also developed the personality theory of IDIODYNAMICS.

**Rotter, Julian Bernard** (1916–2014) U.S. clinical psychologist and personality theorist: best known for his SOCIAL LEARNING THEORY of personality and for the widely used ROTTER INTERNAL–EXTERNAL LOCUS OF CONTROL SCALE.

**Sanford, Edmund Clark** (1859–1924) U.S. experimental psychologist: author of the first English-language laboratory manual in experimental psychology; he was the first psychologist to promote the subsequently common study of MAZE LEARNING in rats.

**Santayana, George** (1863–1952) Spanish-born U.S. philosopher, poet, and cultural critic: a central figure in the era of classical American philosophy of the late 19th and early 20th centuries; a student of William James, he criticized James's adherence to PRAGMATISM, espousing his own formulation of NATURALISM; he is probably best known for his saying that “those who cannot remember the past are condemned to repeat it.”

**Sarason, Seymour Bernard** (1919–2010) U.S. psychologist: a founder of community psychology; he integrated social-cultural determinants into the study of people with intellectual disabilities and produced a series of empirical studies that provided a foundation for understanding test anxiety; he also cowrote a text that critiqued teacher education and significantly influenced schools of education.

**Sarbin, Theodore R.** (1911–2005) U.S. clinical and social psychologist: he published on a variety of subjects (e.g., hypnosis, schizophrenia) but is mainly known for evolving a theory of NARRATIVE PSYCHOLOGY and of the self as expressed in social roles (see ROLE-ENACTMENT THEORY).

**Schachter, Stanley** (1922–1997) U.S. psychologist: an influential theorist and researcher in social and health psychology who focused on such areas as social pressure, ATTRIBUTION THEORY, and addiction; he is also known for the SCHACHTER–SINGER THEORY of emotion, conceived with U.S. psychologist Jerome E. Singer (1924–2010).

**Schiller, Paul Harkai** (1908–1949) Hungarian comparative psychologist: his ACTION THEORY emphasized the interplay between organisms and environments; he is known chiefly for his investigations of innate motor patterns in chimpanzees.

**Schlosberg, Harold** (1904–1964) U.S. experimental psychologist: in the 1950s, he headed the collaborative effort to revise Robert Sessions Woodworth's 1938 textbook *Experimental Psychology*, a revision that dominated instruction in the field for the next quarter century; he is also remembered for his inventive construction of apparatus for experimental research.

**Schneirla, Theodore Christian** (1902–1968) U.S. comparative psychologist: one of the foremost 20th-century animal psychologists; he elaborated the APPROACH-AVOIDANCE CONFLICT into *biphasic A–W theory*, which viewed approach and withdrawal as essential in all behavior—mainly governed by stimulus intensity yet subject to the organism's internal conditions as well as to environmental conditions.

**Schopenhauer, Arthur** (1788–1860) German philosopher: his emphasis on the will to survive as the basis of all human existence had great influence on the first generation of theorists and practitioners of DEPTH PSYCHOLOGY.

**Schopler, Eric** (1927–2006) U.S. psychologist: an authority on the diagnosis and treatment of AUTISM SPECTRUM DISORDER; he promoted the now common point of view that autism is a developmental disorder, that its treatment should be educational rather than psychiatric, and that parents can be effective coterapists in the treatment process.

**Schumann, Friedrich** (1863–1940) German experimental psychologist: he studied memory, learning, visual illusions, and perception; however, he is better known for his professional associations and mentorships (e.g., he oversaw the postdoctoral work of Wolfgang Köhler and Kurt Koffka).

**Schuster, Charles Robert** (1930–2011) U.S. psychologist: a pioneer in the scientific study of addiction and one of the founders of BEHAVIORAL PHARMACOLOGY; his research opened the way to a public health approach to substance abuse.

**Scott, Walter Dill** (1869–1955) U.S. psychologist: a key figure in the development of applied psychology, especially ADVERTISING PSYCHOLOGY and PERSONNEL SELECTION.

**Scripture, Edward Wheeler** (1864–1945) U.S. psychologist and speech therapist: known for his research on localization of sound and other perceptual phenomena, he studied SPEECH AND LANGUAGE PATHOLOGY and conducted innovative speech therapy that combined psychoanalytic

techniques (to address underlying emotional origins) with vocal exercises (to correct faulty speech patterns).

**Sears, Pauline Kirkpatrick Snedden** (1908–1993) U.S. psychologist: known for rigorous and creative use of quantitative research methods, such as systematic TIME SAMPLING, to study socialization, family processes, and child rearing; her research focused on schoolchildren and the psychological factors affecting academic achievement and performance; married to Robert R. Sears.

**Sears, Robert Richardson** (1908–1989) U.S. psychologist: best known for research on the influence of parental discipline and other child-rearing practices on children's behavior, especially their levels of aggression and dependency; he was also widely recognized for research on empirical evidence for psychoanalytic theory; he spearheaded the American Psychological Association's accreditation of clinical doctoral programs following World War II; married to Pauline K. Sears.

**Seashore, Carl Emil** (1866–1949) Swedish-born U.S. psychologist: a prolific designer and builder of research instruments (e.g., the SEASHORE AUDIOMETER) and creator of the SEASHORE MEASURES OF MUSICAL TALENT; as an influential university administrator, he advanced a comprehensive vision of psychology's interrelations with a spectrum of academic disciplines and scientific specialties.

**Sechenov, Ivan Mikhailovich** (1829–1905) Russian physiologist: he interpreted psychology, through physiology, as the study of brain reflexes, and he denied the existence of mental causes of behavior; he also described reflexes as tripartite units consisting of a sensory nerve, a central connection, and a motor nerve and proposed that they are modifiable by association from infancy.

**Séguin, Édouard** (1812–1880) French-born U.S. physician: his pioneering methods of teaching children with severe intellectual and physical disabilities are still influential in many modern SPECIAL EDUCATION programs.

**Shakow, David** (1901–1981) U.S. psychologist: best known for helping the American Psychological Association professionalize the field of clinical psychology and for helping develop the SCIENTIST-PRACTITIONER MODEL.

**Sherif, Muzafer** (1906–1988) Turkish social psychologist: known particularly for his work on group norms (see SOCIAL NORM) and for the ROBBERS CAVE EXPERIMENT, a field study of group competition and cooperation that he conducted with his wife, U.S. social psychologist Carolyn Sherif (1922–1982), and other colleagues; he articulated the notion that perception and behavior are determined in bipolar fashion by external and internal factors, the combined totality of which he termed FRAME OF REFERENCE—this view inspired the development of such novel theories as ADAPTATION LEVEL.

**Sherrington, Charles Scott** (1857–1952) British physiologist: his research on the mechanics of muscular activation revolutionized neurophysiology; he introduced many basic terms and concepts in neuroscience, among them PROPRICEPTION, NEURON, SYNAPSE, SPATIAL SUMMATION, and TEMPORAL SUMMATION.

**Shneidman, Edwin S.** (1918–2009) U.S. clinical psychologist: almost single-handedly created the field of SUICIDOL-OGY in the United States (coining the term itself); he founded the journal *Suicide and Life-Threatening Behavior* and coined, among other terms, PSYCACHE to capture the mental suffering of people who are suicidal.



**Simon, Herbert Alexander** (1916–2001) U.S. economist, political scientist, and psychologist: generally regarded as a founder of ARTIFICIAL INTELLIGENCE and COGNITIVE SCIENCE, he was one of the first to use computers to model human decision making and problem solving.

**Skinner, Burrhus Frederic** (1904–1990) U.S. psychologist: one of the most influential psychologists of the 20th century, he was the originator of OPERANT CONDITIONING, a form of RADICAL BEHAVIORISM; he also initiated the field of APPLIED BEHAVIOR ANALYSIS; he was particularly concerned with developing practical ways in which culture could be maintained and improved through the application of behaviorist principles, and he described a behaviorist utopia in WALDEN TWO.

**Smith, M. Brewster** (1919–2012) U.S. psychologist: advocated for a social psychology that was strongly informed by HUMANISTIC PSYCHOLOGY; he served as an expert witness in the school desegregation case that, combined with three other cases, led to the historic *Brown v. Board of Education* decision of the U.S. Supreme Court in 1954.

**Smith, Patricia Cain** (1917–2007) U.S. industrial and organizational psychologist: best remembered for her contributions to the development of measures of job performance and job satisfaction, including the BEHAVIORALLY ANCHORED RATING SCALE and the JOB DESCRIPTIVE INDEX.

**Socrates** (469–399 BCE) Greek philosopher: one of the founders of Western culture; his primary relevance to psychology lies in his painstaking approach to understanding private experience, his emphasis on the importance of the self, and the so-called SOCRATIC DIALOGUE.

**Solomon, Richard Lester** (1918–1995) U.S. psychologist: best known for his contributions to learning theory, specifically his work on motivation and emotional states and their influence on behavior (see OPPONENT PROCESS THEORY OF ACQUIRED MOTIVATION).

**Spearman, Charles Edward** (1863–1945) British psychologist and psychometrician: formulator of the two-factor theory of intelligence that proposed an underlying GENERAL FACTOR and multiple SPECIFIC FACTORS; he is also renowned for his mathematical work, including the development of the SPEARMAN CORRELATION COEFFICIENT and the technique of FACTOR ANALYSIS.

**Spence, Donald Pond** (1926–2007) U.S. theoretical psychologist and psychoanalyst: sought to reframe psychoanalysis as a hermeneutic (interpretive) discipline by emphasizing the importance of “narrative smoothing” in the psychoanalytic process, whereby the analyst helps the patient construct a convincing story of events in the patient’s past.

**Spence, Kenneth Wartenbee** (1907–1967) U.S. experimental psychologist: developer, with Clark L. Hull, of an influential version of NEOBEHAVIORISM—the Hull–Spence model—that offered a theoretical system to explain animal learning and motivation on the basis of CLASSICAL CONDITIONING.

**Spencer, Herbert** (1820–1903) British philosopher: best known for articulating the now discredited theory of SOCIAL DARWINISM; he coined the term SURVIVAL OF THE FITTEST, which Charles Darwin later used as an equivalent for NATURAL SELECTION.

**Sperry, Roger Wolcott** (1913–1994) U.S. neurobiologist and psychologist: best known for his nerve-regeneration theory and his working out of the implications of research

into the specialized functions of the two hemispheres of the brain, which he discovered using split-brain techniques (see COMMISSUROTOMY); he was awarded the 1981 Nobel Prize in Physiology or Medicine for this work.

**Spielberger, Charles D.** (1927–2013) U.S. psychologist: best known for his work on personality and health and for his development of the widely used STATE–TRAIT ANXIETY INVENTORY, among other assessment instruments.

**Spinoza, Baruch** (1632–1677) Dutch philosopher, also known by his Latinized name, Benedictus de Spinoza: a major proponent of PANTHEISM; he is perhaps best known for his formulation of the DOUBLE-ASPECT THEORY of the mind–body problem; he is also considered a primary early adherent of RATIONALISM, along with René Descartes and Gottfried Wilhelm Leibniz.

**Stanley, Julian Cecil, Jr.** (1918–2005) U.S. educator: with Donald Campbell, wrote *Experimental and Quasi-Experimental Designs for Research* (1963), a standard text in the field; he became fascinated with GIFTEDNESS and initiated programs throughout the United States to identify gifted youth and maximize their educational opportunities.

**Stellar, Eliot** (1919–1993) U.S. physiological psychologist: coauthor with Clifford T. Morgan of the second edition of *Physiological Psychology* (1950), which was a standard reference for more than 20 years; he developed (with Nelson Krauss), the Stellar–Krauss stereotaxis instrument, a major innovation in behavioral science research, and made significant contributions to the understanding of the neurobiology of motivation.

**Stern, Louis William** (1871–1938) German psychologist, usually known as William Stern: best known for developing the concept of the intelligence quotient (see IQ); he was also a pioneer in developmental psychology, applied psychology, and DIFFERENTIAL PSYCHOLOGY.

**Stevens, Stanley Smith** (1906–1973) U.S. psychologist: extended OPERATIONALISM to measurement by proposing four scales (*nominal*, *ordinal*, *interval*, and *ratio*) that have become accepted concepts in statistics; he also discovered incongruities in FECHNER’S LAW that led him to propose STEVENS LAW, now a central tenet in PSYCHOPHYSICS.

**Stone, Calvin Perry** (1892–1954) U.S. psychologist: the first comparative psychologist in the United States to focus on the scientific investigation of sexual behavior; he particularly studied neural and hormonal influences and discovered evidence for the importance of subcortical brain regions.

**Stout, George Frederick** (1860–1944) British philosopher and psychologist: remembered for his considered critique of psychological ASSOCIATIONISM and for his examinations of perception, which anticipated much of the emphasis on wholeness and totality later taken up in Gestalt psychology.

**Stratton, George Malcolm** (1865–1957) U.S. psychologist: best known for research on visual phenomena, testing, for example, whether inversion of the RETINAL IMAGE is necessary for the perception of things as being upright; he also studied the social dimensions of individual behavior, particularly as related to culture, religion, and international conflict.

**Strong, Edward Kellogg, Jr.** (1884–1963) U.S. psychologist: a founder of applied psychology—especially in the areas of personnel selection and occupational analysis—and best known as a codeveloper of the widely used

**STRONG INTEREST INVENTORY** (formerly the Strong–Campbell Interest Inventory).

**Strupp, Hans H.** (1921–2006) German-born U.S. clinical psychologist, psychoanalyst, and psychotherapy researcher; developed a model for framing and evaluating the effectiveness of psychotherapy at three levels of analysis (behavioral, personal well-being, and personality integration and change); he is also recognized for developing, with psychologist Jeffrey L. Binder, a version of BRIEF PSYCHODYNAMIC PSYCHOTHERAPY called *time-limited dynamic psychotherapy*.

**Stumpf, Carl** (1848–1936) German experimental psychologist; best known for investigating the psychological factors involved in acoustic perception; his institute launched many famous psychologists, including Kurt Koffka, Wolfgang Köhler, Kurt Lewin, and Max Wertheimer; his pioneering research on emotions proposed a cognitively based theory in which judgments are crucial.

**Sullivan, Harry Stack** (1892–1949) U.S. psychiatrist; a major contributor to personality theory through his INTERPERSONAL THEORY, which eventually gave rise to INTERPERSONAL PSYCHOTHERAPY; his approach derived from Sigmund Freud's psychoanalysis but emphasized social elements over biological instincts and focused on how key relationships develop and change over time.

**Sully, James** (1842–1923) British psychologist; studied and wrote about a wide range of topics, including ASSOCIATIONISM, NATIVISM, perception, sensation, and intuition; he cofounded the BRITISH PSYCHOLOGICAL SOCIETY in 1901.

**Sumner, Francis Cecil** (1895–1954) U.S. psychologist; the first African American to receive a doctorate in psychology in the United States, he became the head of the psychology department at Howard University and exerted great influence in creating programs to train Black psychologists; his own department trained more Black psychologists than all combined U.S. colleges and universities at this time.

**Super, Donald Edwin** (1910–1994) U.S. vocational psychologist; wrote extensively on vocational guidance and vocational appraisal; he is also known for his Career Pattern Study, which employed three psychometric instruments still used today: the Work Values Inventory, the Career Development Inventory, and the Adult Career Concerns Inventory.

**Suppes, Patrick** (1922– ) U.S. philosopher and mathematical psychologist; cowrote *Foundations of Measurement* (1971–1990), which discussed the independent measurability of psychological concepts; he also wrote *Language for Humans and Robots* (1991), summarizing his work on the theory and experimental psychology of language.

**Taine, Hippolyte** (1828–1893) French historian, critic, and philosopher; one of the leading exponents of French POSITIVISM; he wrote extensively about the psychology of events in French history, including the psychology of revolutionary crowds.

**Terman, Lewis Madison** (1877–1956) U.S. psychologist; responsible for the validation of the Binet scales (see STANFORD–BINET INTELLIGENCE SCALE), the development of the STANFORD ACHIEVEMENT TEST, and the construction of the Army intelligence tests used during World War I (see ARMY TESTS); he is also known for initiating (in the 1920s) an important longitudinal study of some 1,500 gifted children (see TERMAN'S GIFTEDNESS STUDY).

**Teuber, Hans-Lukas** (1916–1977) German-born U.S. psychologist; introduced psychophysical methods into clinical neurology in his study of combat-related brain injury; he developed the now standard research procedure of DOUBLE DISSOCIATION and fostered a multidisciplinary approach to psychology that was a precursor of contemporary BIOLOGICAL PSYCHOLOGY and BEHAVIORAL NEUROSCIENCE.

**Thelen, Esther** (1941–2004) U.S. developmental psychologist; her work on infant motor behavior introduced the principles and methods of DYNAMIC SYSTEMS THEORY to developmental psychology, reinvigorated interest in motor development, and provided a theoretical and empirical basis for clinical work in pediatric physical and occupational therapy.

**Thibaut, John W.** (1917–1986) U.S. social psychologist; codeveloper with Harold H. Kelley of SOCIAL EXCHANGE THEORY and INTERDEPENDENCE THEORY; he proposed that the benefits derived from taking account of the broader context of behavior underlie the existence of such values as altruism, competitiveness, and fairness.

**Thomson, Godfrey Hilton** (1881–1955) British mathematician, educational psychologist, and psychometrician; focused his work on psychological measurement and statistical analysis and authored a landmark text on the mathematical foundations of FACTOR ANALYSIS.

**Thorndike, Edward Lee** (1874–1949) U.S. psychologist; an important early contributor to the field of animal intelligence; he developed the concept of TRIAL-AND-ERROR LEARNING and the theory of CONNECTIONISM; later, he became an important figure in the expansion of educational psychology.

**Thurstone, Louis Leon** (1887–1955) U.S. psychologist; a pioneer in PSYCHOMETRICS; with his wife, psychologist Thelma Gwinn Thurstone (1897–1993), he developed and maintained the examination that was the forerunner of the SCHOLASTIC ASSESSMENT TEST; he further developed the statistical technique of FACTOR ANALYSIS to tease out PRIMARY ABILITIES.

**Tinbergen, Nikolaas** (1907–1988) Dutch-born British behavioral biologist; Nobel Prize-winning cofounder of ETHOLOGY (with Konrad Lorenz and Karl von Frisch), he advanced the practice of FIELD RESEARCH in the study of nonhuman animals.

**Titchener, Edward Bradford** (1867–1927) British-born U.S. psychologist; a chief exponent of STRUCTURALISM, which emphasized the use of systematic introspection in laboratory settings to uncover the elements of experience (sensations, images, and feelings).

**Tolman, Edward Chace** (1886–1959) U.S. psychologist; a founder of NEOBEHAVIORISM and proposer of the theory of PURPOSIVE BEHAVIORISM; he emphasized such mentalist concepts as purpose and COGNITIVE MAPS.

**Tomkins, Silvan Solomon** (1911–1991) U.S. personality psychologist; best known for AFFECT THEORY and the SCRIPT THEORY of affect and motivation, which he explicated in an influential four-volume set of texts collectively called *Affect, Imagery, Consciousness* (1962–1992).

**Troland, Leonard Thompson** (1889–1932) U.S. scientist and psychologist; a significant contributor to visual science; the TROLAND (a unit of retinal illumination) was named in his honor; his promotion of a comprehensive motivational psychology that accommodated feelings as a causal element in behavior anticipated later emphases on

the cognitive–emotional factors in behavior regulation; he was also a coinventor of the Technicolor process for motion pictures.

**Tryon, Robert Choate** (1901–1967) U.S. psychologist: widely known for his investigations of INDIVIDUAL DIFFERENCES in learning; his breeding of rats based on performance in a standardized maze problem demonstrated the genetic substrate of learning ability; he also developed computerized CLUSTER ANALYSIS.

**Tucker, Ledyard R.** (1910–2004) U.S. psychologist: one of the great pioneers in PSYCHOMETRICS; his seminal work on using factor analytic methods to analyze repeated-measures data laid the foundation for modern latent curve models; he originated major advances in modeling INDIVIDUAL DIFFERENCES and linked scaling and factor analysis models in the form of three-mode multidimensional scaling.

**Tulving, Endel** (1927– ) Estonian-born Canadian psychologist: a preeminent expert on memory; among his many contributions are his delineation of EPISODIC MEMORY (recall of things experienced), in contrast to SEMANTIC MEMORY (recall of things known), and his elucidation of the ENCODING SPECIFICITY principle of memory formulation and retrieval.

**Turner, Charles Henry** (1867–1923) U.S. zoologist and comparative psychologist: an African American pioneer of ANIMAL BEHAVIOR research, he made novel and influential contributions in the areas of MORPHOLOGY, TROPISM, learning, and DEATH FEIGNING.

**Tversky, Amos** (1937–1996) U.S. psychologist, born in British Palestine (now Israel): known for his studies, with psychologist Daniel Kahneman, of similarity, judgment under uncertainty, and decision making.

**Tyler, Leona E.** (1906–1993) U.S. counseling psychologist: author of one of the first (and seminally influential) textbooks on INDIVIDUAL DIFFERENCES and of the leading textbook in the mid-20th century on counseling psychology.

**Ullmann, Leonard P.** (1930–2008) U.S. experimental psychologist: collaborated with Leonard Krasner in the study of VERBAL CONDITIONING and on two landmark books on behavior modification; earlier in his career, he coordinated the first major study of hospital effectiveness: the VA (Veterans Administration) Psychiatric Evaluation Project.

**Underwood, Benton J.** (1915–1994) U.S. psychologist and methodologist: his textbook *Experimental Psychology* (1949, revised 1966) played the leading role in defining experimental psychology throughout the mid-20th century.

**Upham, Thomas Cogswell** (1799–1872) U.S. mental philosopher: author of the first U.S. textbook on psychology, which appeared in 1827 and remained in use through much of the 19th century.

**Verplanck, William Samuel, Jr.** (1916–2002) U.S. experimental psychologist: cowrote *Modern Learning Theory* (1954), a significant step away from Hullian BEHAVIORISM to more complex and cognitively oriented behavior theories; he also wrote a glossary (1957) to facilitate cooperation between ethologists and behaviorists.

**Vives, Juan Luis** (1492–1540) Spanish philosopher: a vigorous supporter of the EMPIRICAL METHOD, particularly in relation to psychology; he studied and espoused the de-

scriptive observation of human behavior, individual differences in mental activity, and the dynamic relation between the mind and the body (see MIND–BODY PROBLEM).

**Vygotsky, Lev Semenovich** (or **Vigotsky**; 1896–1934) Russian psychologist: known for his sociocultural theory of cognitive development emphasizing the interaction of children's natural abilities with the cultural mediators of written and oral language; he held that developmental stages are partially driven by education and that education should take place in the ZONE OF PROXIMAL DEVELOPMENT.

**Waldrop, Robert Spurlin** (1912–2012) U.S. psychologist: as director of the Veterans Service Bureau at the University of Michigan, he was in charge of providing counseling and other services to more than 12,000 veterans entering the university after World War II; he later played a pivotal role in establishing doctoral-level counseling psychologists in hospitals of the U.S. DEPARTMENT OF VETERANS AFFAIRS (VA).

**Walk, Richard D.** (1920–1999) U.S. developmental psychologist: studied cross-species development of DEPTH PERCEPTION and infant perceptual development, including DISCRIMINATION LEARNING of various types; he is the originator with Eleanor J. Gibson of the VISUAL CLIFF.

**Ward, James** (1843–1925) British psychologist and philosopher: author of a famous article in the 1886 *Encyclopaedia Britannica* that maintained that psychology must examine experience from the standpoint of an active, conscious subject; this belief, elaborated in his 1918 work, *Psychological Principles*, helped to direct the field in Britain away from the ASSOCIATIONISM and BEHAVIORISM of the early 20th century.

**Washburn, Margaret Floy** (1871–1939) U.S. psychologist: author of the first U.S. textbook of comparative psychology; the second female president of the American Psychological Association (1921) and the second female scientist to be elected to the NATIONAL ACADEMY OF SCIENCES (NAS).

**Watson, John Broadus** (1878–1958) U.S. psychologist: a seminal figure in the early history of comparative psychology; best known as the founder of BEHAVIORISM, via his 1913 manifesto in the *Psychological Review*, “Psychology as the Behaviorist Views It.”

**Watt, Henry Jackson** (1879–1925) British experimental psychologist: a student of Oswald Külpe, he published an influential dissertation on thought processes (1905) in which he introduced the importance in problem solving of AUFGABE; the dissertation is considered one of the foremost contributions of the WÜRZBURG SCHOOL on thinking in adults.

**Weber, Ernst Heinrich** (1795–1878) German physiologist: a founder of PSYCHOPHYSICS and formulator of WEBER'S LAW; he is also known for his work on two-point DISCRIMINATION, which led to the formulation of the concept of the DIFFERENCE THRESHOLD.

**Wechsler, David** (1896–1981) Romanian-born U.S. psychologist: developer of the Wechsler–Bellevue Intelligence Scale, which eventually was standardized as the WECHSLER ADULT INTELLIGENCE SCALE; the latter and the WECHSLER INTELLIGENCE SCALE FOR CHILDREN remain the dominant psychological tests for measuring cognitive abilities.

**Weiss, Albert Paul** (1879–1931) German-born U.S. psychologist: developed a biosocial behaviorism, which made a clear distinction between biophysical stimuli (e.g., sound

waves affecting the cochlea) and biosocial stimuli (physical stimuli with social relevance, e.g., words heard from a friend); he also influenced the early development of BEHAVIORISM.

**Werner, Heinz** (1890–1964) Austrian-born U.S. psychologist: known for his ORTHOGENETIC PRINCIPLE of development, his FORMAL PARALLELISM approach to the concept of development, and his description of PHYSIOGNOMIC PERCEPTION.

**Wertheimer, Max** (1880–1943) German-born U.S. psychologist: a founder of Gestalt psychology whose research added greatly to theories of perception; he is also known for his work on GESTALT PRINCIPLES OF ORGANIZATION and perhaps best known for his studies of APPARENT MOVEMENT.

**Wever, Ernest Glen** (1902–1991) U.S. psychologist: a prominent figure in the study of hearing, he proposed the VOLLEY THEORY of audition; he discovered with U.S. otologist Charles W. Bray (1904–1982) the COCHLEAR MICROPHONIC, also called the *Wever–Bray effect*.

**Whipple, Guy Montrose** (1876–1941) U.S. educational psychologist: his two-volume *Manual of Mental and Physical Tests* (1910), which described more than 50 intelligence and personality tests, was the core reference work in the field for almost two decades; he was a strong early advocate for GIFTEDNESS education.

**White, Robert W.** (1904–2001) U.S. psychologist: best known for his holistic approach to the study of personality; he argued the case for INTRINSIC MOTIVATION during a time dominated by DRIVE-REDUCTION THEORY, and he advocated for the CASE STUDY method over the statistical method of analyzing aggregated data.

**White, Sheldon H.** (1928–2005) U.S. developmental psychologist: produced a diverse body of research on children and learning that included DISCRIMINATION LEARNING; he introduced the phrase FIVE-TO-SEVEN SHIFT to describe the significant cognitive developmental gains in children between those ages; he also served as a consultant to HEAD START and the popular U.S. children's television program *Sesame Street*.

**Witasek, Stephan** (1870–1915) Austrian psychologist affiliated with the University of Graz (see AUSTRIAN SCHOOL); his work centered on spatial perception and aesthetics, particularly perceptual problems and the process that fuses sensory elements into a whole; he developed a theory of the ontology and psychology of aesthetic phenomena.

**Witmer, Lightner** (1867–1956) U.S. psychologist: often named the founder of clinical psychology in the United States, he is also considered a pioneer of school psychology and a major figure in the development of SPECIAL EDUCATION.

**Wolf, Montrose M.** (1935–2004) U.S. psychologist: a leader in the creation of APPLIED BEHAVIOR ANALYSIS; he studied the reinforcing power of adult attention to children, using groundbreaking methods such as interobserver reliability checks, and he pioneered “microteaching” techniques for children with developmental disabilities; he was also instrumental in the adoption of nonviolent social isolation for problem behavior (the TIME OUT).

**Wolfe, Harry Kirke** (1858–1918) U.S. psychologist: at the University of Nebraska, he mentored many students who became influential psychologists, including three presidents of the American Psychological Association; he

founded one of the first U.S. psychology laboratories and served on the editorial board of the first U.S. journal in the field, the *American Journal of Psychology*.

**Wolfe, Dael Lee** (1906–2002) U.S. experimental psychologist, administrator, and educator: first executive director of the American Psychological Association, first editor of *American Psychologist*, and executive director of the AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE (AAAS).

**Wolpe, Joseph** (1915–1997) South African-born U.S. psychiatrist: the father of BEHAVIOR THERAPY, he is best known for his development of SYSTEMATIC DESENSITIZATION.

**Woodworth, Robert Sessions** (1869–1962) U.S. psychologist: best known for textbooks that shaped the field of experimental psychology; he is also known for his research on motivation, which led to his most important conceptual contribution, S–O–R PSYCHOLOGY.

**Woolley, Helen Bradford Thompson** (1874–1947) U.S. psychologist: a powerful advocate of child welfare, whose studies of young employed children were instrumental in reforming child labor and compulsory education laws in the United States; she was among the first to study the psychological likenesses and differences of the sexes.

**Wright, Logan** (1933–1999) U.S. clinical pediatric psychologist: author of numerous works on PEDIATRIC PSYCHOLOGY, psychology's relation to health care, responsible parenting, and behavior therapy; he was the first Native American (Osage Nation) to serve as president of the American Psychological Association (1986).

**Wright, Rogers H.** (1927–2013) U.S. psychologist: played a major role in shaping the independent practice of psychology through his pioneering work in licensure, in establishing insurance programs for practitioners, in developing research-based professional service review programs, and in cofounding or actively participating in numerous organizations dedicated to the advancement of professional psychology.

**Wundt, Wilhelm Max** (1832–1920) German psychologist and physiologist: the founder of experimental psychology, establishing the first official psychology laboratory in 1879; his application of introspective and psychophysical methods to such subjects as reaction time, attention, judgment, and emotions had strong international influence.

**Yerkes, Robert Mearns** (1876–1956) U.S. psychobiologist: a preeminent comparative psychologist, known especially for his work on ANIMAL BEHAVIOR, he founded an important primate research station in Orange Park, Florida, now named the Yerkes National Primate Research Center; he also played a significant role in the development of Army intelligence tests during World War I (see ARMY TESTS).

**Young, Paul Thomas** (1892–1978) U.S. psychologist: studied the role of pleasure in motivation, emotion, and action (see HEDONIC THEORY); he also performed classic research on auditory localization with a device he called the PSEUDOPHONE.

**Zajonc, Robert B.** (1923–2008) Polish-born U.S. social psychologist: a pioneer in social cognition, with research interests particularly in SOCIAL FACILITATION; he discovered the MERE-EXPOSURE EFFECT; he also studied BIRTH ORDER and proposed, with Greg Markus, the controversial CONFLUENCE MODEL of sibling intelligence.

**Zeigarnik, Bluma** (1901–1988) Lithuanian-born Russian psychologist: in her 1927 dissertation, she described the phenomenon of better memory for uncompleted tasks (ZEIGARNIK EFFECT); she later published writings on aphasia, agnosia, and apraxia.

**Zubin, Joseph** (1900–1990) Lithuanian-born U.S. psy-

chologist: strongly advocated for the use of experimental methods and statistical techniques, especially BIostatistics, in the study of mental disorders; he also developed the vulnerability model of schizophrenia, now a commonly cited paradigm for other forms of psychopathology as well (see STRESS–VULNERABILITY MODEL).

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# Appendixes

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# Institutional and Organizational Entries

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- Academy for Eating Disorders (AED)  
Academy of Certified Social Workers (ACSW)  
Acoustical Society of America (ASA)  
Adult Children of Alcoholics (ACOA)  
Al-Anon  
Alateen  
Alcohol, Drug Abuse and Mental Health Administration (ADAMHA)  
Alcoholics Anonymous (AA)  
Alzheimer's Association  
American Academy of Clinical Sexologists, Inc. (AACS)  
American Alliance for Health, Physical Education, Recreation and Dance (AAHPERD)  
American Anorexia/Bulimia Association—see National Eating Disorders Association  
American Association for the Advancement of Science (AAAS)  
American Association of Applied and Preventive Psychology (AAAPP)  
American Association of Applied Psychology (AAP)  
American Association of Clinical Psychologists (AACP)  
American Association of Mental Retardation (AAMR)—see American Association on Intellectual and Developmental Disabilities  
American Association of Sexuality Educators, Counselors and Therapists (AASECT)  
American Association on Intellectual and Developmental Disabilities (AAIDD)  
American Birth Control League (ABCL)—see Planned Parenthood Federation of America  
American Board of Medical Specialties (ABMS)  
American Board of Professional Psychology (ABPP)  
American Board of Psychological Hypnosis (ABPH)  
American College of Sports Medicine (ACSM)  
American Counseling Association (ACA)  
American Educational Research Association (AERA)  
American Orthopsychiatric Association  
American Pain Society (APS)  
American Parkinson Disease Association, Inc. (APDA)  
American Philosophical Society (APS)  
American Psychiatric Association (APA)  
American Psychoanalytic Association (APsaA)  
American Psychological Association (APA)  
American Psychological Association of Graduate Students (APAGS)  
American Psychological Foundation (APF)  
American Psychological Society (APS)—see Association for Psychological Science  
American Psychosomatic Society (APS)  
American Society for Psychical Research (ASPR)  
Army Research Institute (ARI)  
Association for Applied Sport Psychology (AASP)  
Association for Psychological Science (APS)  
Association for Research in Otolaryngology (ARO)  
Association for the Advancement of Psychology (AAP)  
Big Brothers Big Sisters of America  
British Psychological Society (BPS)  
Canadian Psychological Association (CPA)  
Center for Deployment Psychology  
Center for Independent Living (CIL)—see independent living  
Centers for Disease Control and Prevention (CDC)  
Centers for Medicare and Medicaid Services (CMS)  
Cocaine Anonymous (CA)  
Co-Dependents Anonymous  
Compassionate Friends  
Eating Disorders Awareness and Prevention, Inc.—see National Eating Disorders Association  
Educational Testing Service (ETS)  
Equal Employment Opportunity Commission (EEOC)  
Esalen Institute  
European Federation of Professional Psychologists' Associations (EPPPA)  
European Federation of the Psychology of Sport and Physical Activity  
Federation of Associations in Brain and Behavioral Sciences (FABBS)  
Gamblers Anonymous (GA)  
GROW  
Health Care Financing Administration (HCEA)—see Centers for Medicare and Medicaid Services  
Indian Health Service (IHS)  
Interamerican Society of Psychology  
International Association of Applied Psychology (IAAP)



## Institutional and Organizational Entries

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International Council of Psychologists	Overeaters Anonymous (OA)
International Military Testing Association	Parents Anonymous
International Positive Psychology Association (IPPA)	Parents Without Partners
International Society for Sport Psychology (ISSP)	Phoenix House
International Union of Psychological Science (IUPsyS)	Planned Parenthood Federation of America (PPFA)
Joint Commission	Portman Clinic
Kinsey Institute for Research in Sex, Gender, and Reproduction	Psi Beta
Mental Health America (MHA)	Psi Chi
Military Testing Association—see International Military Testing Association	Psychometric Society
Mothers Against Drunk Driving (MADD)	Psychonomic Society
Narcotics Anonymous (NA)	Recovery, Inc.
National Academy of Sciences (NAS)	Sexuality Information and Education Council of the United States (SIECUS)
National Alliance on Mental Illness (NAMI)	Sociedad Interamericana de Psicología (SIP)—see Interamerican Society of Psychology
National Association of Rural Health Clinics (NARHC)	Society for Neuroscience
National Association of Social Workers (NASW)	Society for Psychical Research
National Chronic Fatigue Syndrome and Fibromyalgia Association (NCFSEA)	Society for Psychotherapy Research
National Committee for Quality Assurance (NCQA)	Society for Research in Child Development (SRCD)
National Eating Disorders Association (NEDA)	Society of Experimental Psychologists
National Institute of Mental Health (NIMH)	Society of Experimental Social Psychology
National Mental Health Association (NMHA)—see Mental Health America	Society of Indian Psychologists (SIP)
National Parent Teachers Association (NPTA)—see parent teachers association	Substance Abuse and Mental Health Services Administration (SAMHSA)
National Register of Health Service Providers in Psychology	Tavistock Clinic
National Research Council—see National Academy of Sciences	U.S. Department of Veterans Affairs (VA)
National Science Foundation (NSF)	U.S. Drug Enforcement Administration (DEA)
North American Society for the Psychology of Sport and Physical Activity (NASPPSA)	U.S. Food and Drug Administration (FDA)
Occupational Safety and Health Administration (OSHA)	Walter Reed Army Institute of Research (WRAIR)
	Weight Watchers
	World Federation for Mental Health
	World Health Organization (WHO)

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# Psychological Test and Assessment Instrument Entries

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- ACT Assessment (American College Testing Assessment)
- Adult Attachment Interview (AAI)
- Allport–Vernon–Lindzey Study of Values (SOV)
- Anti-Semitism Scale (A-S Scale)
- Approach Control Test
- Armed Forces Qualification Test (AFQT)
- Armed Services Vocational Aptitude Battery (ASVAB)
- Army Alpha Test—see Army tests
- Army Beta Test—see Army tests
- Army General Classification Test (AGCT)—see Army tests
- ARP tests (Aptitude Research Project tests)
- Athletic Coping Skills Inventory (ACSI)
- Athletic Motivation Inventory (AMI)
- Attachment Q-set (AQS)
- Attention Network Test (ANT)
- Auditory Consonant Trigram (ACT)
- Auditory Continuous Performance Test (ACPT)
- Auditory Verbal Learning Test (AVLT)—see Rey Auditory Verbal Learning Test
- Autobiographical Memory Interview (AMI)
- Barron–Welsh Art Scale (BWAS)
- Barthel Index
- Basic Nordic Sleep Questionnaire (BNSQ)
- Bayley Scales of Infant and Toddler Development
- Bechara Gambling Task—see Iowa Gambling Task
- Beck Anxiety Inventory (BAI)
- Beck Depression Inventory (BDI)
- Beck Hopelessness Scale (BHS)
- Beck Scale for Suicide Ideation (BSS)
- Bem Sex Role Inventory (BSRI)
- Bender Visual–Motor Gestalt Test (Bender–Gestalt)
- Benton Visual Retention Test (BVRT)
- Biographical Evaluation and Screening of Troops (BEST)
- Blessed Dementia Scale (BDS)
- Body Image Assessment (BIA)
- Bogardus Social Distance Scale
- Borg scale
- Boston Diagnostic Aphasia Examination (BDAE)
- Boston Naming Test (BNT)
- Boston Process Approach—see process approach
- Brazelton Neonatal Behavioral Assessment Scale
- Brief Psychiatric Rating Scale (BPRS)
- Brief Visuospatial Memory Test
- Bruininks–Oseretsky Test of Motor Proficiency (BOT)
- Buschke–Fuld Selective Reminding Test—see selective reminding test
- CAGE
- California Achievement Tests (CAT)
- California Psychological Inventory (CPI)
- California Verbal Learning Test (CVLT)
- Carver and White's BIS/BAS scales
- Category Test
- Center for Epidemiologic Studies Depression Scale (CES-D)
- Child Behavior Checklist (CBCL)
- Children's Apperception Test (CAT)
- Children's Auditory Verbal Learning Test (CAVLT)
- Children's Complex Figure Test—see Complex Figure Test
- Children's Depression Inventory (CDI)
- Children's Embedded Figures Test (CEFT)
- Children's Manifest Anxiety Scale (CMAS)
- Children's Personality Questionnaire (CPQ)
- Choice Dilemma Questionnaire (CDQ)
- Clance Impostor Phenomenon Scale (CIPS)—see impostor phenomenon
- Closure Flexibility Test
- Coaching Behavior Assessment System (CBAS)
- Cognitive Abilities Test (CogAT)
- Cognitive Assessment System (CAS)
- Cognitive Emotion Regulation Questionnaire (CERQ)
- Colored Progressive Matrices—see Raven's Progressive Matrices
- Competitive State Anxiety Inventory (CSAI)
- Complex Figure Test
- Comrey Personality Scales (CPS)
- Concealed Figures Test—see Closure Flexibility Test
- Conners' Comprehensive Behavior Rating Scales (Conners CBRS)
- Conners' Rating Scales (CRS)
- Constructive Thinking Inventory (CTI)
- Constructivist Learning Environment Survey (CLES)
- Controlled Oral Word Association Test (COWAT)

- Coolidge Assessment Battery (CAB)
- Cooper–Harper Handling Qualities Rating Scale
- Cornell Medical Index (CMI)
- CR10 scale—see Borg scale
- Delis–Kaplan Executive Function System (D–KEFS)
- Dementia Rating Scale (DRS)
- Developmental Test of Visual–Motor Integration (VMI)
- Diagnostic Adaptive Behavior Scale (DABS)
- Diagnostic Interview Schedule (DIS)
- Differential Ability Scales (DAS)
- Differential Aptitude Tests (DAT)
- Digit Span
- Digit Symbol
- Disability Rating Scale (DRS)
- Doerfler–Stewart test
- Drug Abuse Screening Test (DAST)
- Early and Periodic Screening, Diagnosis, and Treatment (EPSDT)
- Early Years Cognitive Battery—see Differential Ability Scales
- Edwards Personal Preference Schedule (EPPS)
- Edwards Social Desirability Scale
- Embedded Figures Test (EFT)
- Emory Dyssemia Index (EDI)
- Eriksen flankers task—see flanker task
- Eysenck Personality Inventory (EPI)
- Fascism Scale—see F Scale
- Fear Survey Schedule (FSS)
- Finger Localization Test
- Finger Tapping Test
- Fitts movement task
- Folstein Mini-Mental State Examination—see Mini-Mental State Examination
- Freedom From Distractibility Index
- F Scale (Fascism Scale)
- Full Outline of Unresponsiveness Score (FOUR)
- Functional Independence Measure (FIM)
- Fundamental Interpersonal Relations Orientation–Behavior Scale (FIRO–B)
- General Health Questionnaire (GHQ)
- General Neuropsychological Deficit Scale
- Geriatric Depression Scale (GDS)
- Glasgow Coma Scale (GCS)
- Glasgow Outcome Scale (GOS)
- Global Assessment of Functioning Scale (GAF Scale)
- Global Deterioration Scale (GDS)
- Go/No-go Association Task (GNAT)
- Gordon Diagnostic System (GDS)
- Gottschaldt Figures Test—see Closure Flexibility Test
- Graduate Record Examinations (GRE)
- Grady Coma Scale
- Grip Strength Test
- Grit Scale
- Grooved Pegboard Test (GPT)
- Guilford–Zimmerman Temperament Survey (GZTS)
- Halstead Category Test—see Category Test
- Halstead–Reitan Impairment Index—see impairment index
- Halstead–Reitan Neuropsychological Battery (HRNB)
- Hamilton Rating Scale for Depression (HAM-D; HRSD)
- Hand Dynamometer Test—see Grip Strength Test
- Harvey Impostor Phenomenon Scale (HIPS)—see impostor phenomenon
- Heterosexual–Homosexual Rating Scale—see Kinsey Scale
- High School Personality Questionnaire (HSPQ)
- Hollingshead scales
- Holmgren Test for Color Blindness
- Holtzman Inkblot Technique (HIT)
- Home Observation for Measurement of the Environment (HOME)
- Hooper Visual Organization Test (VOT)
- Hopkins Symptom Checklist (HSCL)
- Hopkins Verbal Learning Test (HVLT)
- Illinois Test of Psycholinguistic Abilities (ITPA)
- Implicit Association Test (IAT)
- Inpatient Multidimensional Psychiatric Scale (IMPS)
- Iowa Gambling Task (IGT)
- Iowa Tests of Basic Skills (ITBS)
- Ishihara Test for Color Blindness
- Jenkins Activity Survey (JAS)
- Job Descriptive Index (JDI)
- Job Diagnostic Survey (JDS)
- Judgment of Line Orientation (JLO)
- Katz Index of Activities of Daily Living
- Kaufman Adolescent and Adult Intelligence Test (KAIT)
- Kaufman Assessment Battery for Children (KABC)
- Kiddie Schedule for Affective Disorders and Schizophrenia (KSADS)—see Schedule for Affective Disorders and Schizophrenia
- Kinsey Scale
- Kirton Adaption–Innovation Inventory (KAI)
- Kohs Block Design Test
- Krantz Health Opinion Survey (KHOS)
- Kuder Preference Record
- Learning Potential Assessment Device (LPAD)
- Least Preferred Coworker Scale (LPC Scale)
- Letter–Number Sequencing

Life Events Rating Scale	Positive and Negative Affect Schedule (PANAS)
Lifetime of Experiences Questionnaire (LEQ)	Present State Examination (PSE)
Luria–Nebraska Neuropsychological Battery (LNNB)	Processing Speed Index
MacArthur Scale of Subjective Social Status	Profile of Mood States (POMS)
Machover Draw-a-Person Test (DAP Test)	Progressive Achievement Tests (PAT)
Mach scale	Psychological Screening Inventory (PSI)
Manifest Anxiety Scale—see Taylor Manifest Anxiety Scale	Purdue Pegboard Test—see pegboard test
Marlowe–Crowne Social Desirability Scale (M–C SDS)	Quality of Life in Alzheimer's Disease Scale (QoL-AD)
Maslach Burnout Inventory (MBI)	Quick Test (QT)
Matching Familiar Figures Test (MFF)	Raven's Progressive Matrices
McCarthy Scales of Children's Abilities	Recognition Memory Test (RMT)
McCarthy Screening Test (MST)	Reinforcement Survey Schedule (RSS)
Michigan Alcoholism Screening Test (MAST)	Reitan Indiana Aphasia Screening Test
Miller Analogies Test (MAT)	Reitan–Kl�ve Sensory Perceptual Examination
Mill Hill Vocabulary Scale (MHV)	Renard Diagnostic Interview
Millon Clinical Multiaxial Inventory (MCMI)	Revised Children's Manifest Anxiety Scale (RCMAS)—see Children's Manifest Anxiety Scale
Mini-Mental State Examination (MMSE)	Rey Auditory Verbal Learning Test (RAVLT)
Minnesota Multiphasic Personality Inventory (MMPI)	Rey Complex Figure Test (RCFT)—see Complex Figure Test
Minnesota Satisfaction Questionnaire (MSQ)	Rey–Osterrieth Complex Figure Test (ROCF)—see Complex Figure Test
Modified Rhyme Test (MRT)	Rod-and-Frame Test (RFT)
Montreal Cognitive Assessment (MoCA)	Rokeach Dogmatism Scale
Multilingual Aphasia Examination (MAE)	Rokeach Value Survey (RVS)
Multiple Sleep Latency Test (MSLT)	Rorschach Inkblot Test
Myers–Briggs Type Indicator (MBTI)	Rotter Internal–External Locus of Control Scale
Naglieri Nonverbal Ability Test (NNAT)	RPE scale—see Borg scale
Narcissistic Personality Inventory (NPI)	Satisfaction With Life Scale (SWLS)
NASA Task Load Index (NASA TLX)	Scale of Prodromal Symptoms (SOPS)
National Assessment of Educational Progress (NAEP)	Schedule for Affective Disorders and Schizophrenia (SADS)
National Health Interview Survey (NHIS)	Scholastic Assessment Test (SAT)
Nelson–Denny Reading Test	School-Age Cognitive Battery—see Differential Ability Scales
NEO Personality Inventory (NEO-PI)	School and College Ability Test (SCAT)
Neurological Evaluation Scale (NES)	Seashore Measures of Musical Talent
Neuropsychological Assessment Battery (NAB)	Seashore Rhythm Test
Object Assembly test	Sensation-Seeking Scale (SSS)
Older Adult Resources and Services	Sensory Modality Assessment and Rehabilitation Technique (SMART)—see vegetative state
Otis–Lennon School Ability Test (OLSAT)	Sensory Perceptual Examination—see Reitan–Kl�ve Sensory Perceptual Examination
Paced Auditory Serial Addition Test (PASAT)	Shipley Institute of Living Scale (SILS)
Parenting Stress Index (PSI)	Short Portable Mental Status Questionnaire (SPMSQ)
Peabody Picture Vocabulary Test (PPVT)	Sixteen Personality Factor Questionnaire (16PF)
Perceived Fraudulence Scale (PFS)—see impostor phenomenon	Sleep Questionnaire and Assessment of Wakefulness (SQAW)
Personalized Implicit Association Test	Slosson Intelligence Test (SIT)
Personal Orientation Inventory (POI)	Smell Identification Test (SIT)
Phillips Rating Scale of Premorbid Adjustment in Schizophrenia	
Porteus Maze Test	
Position Analysis Questionnaire (PAQ)	

## Psychological Test and Assessment Instrument Entries

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Social Readjustment Rating Scale—see Life Events Rating Scale	Tower of Hanoi
Speech Sounds Perception Test	Trail Making Test (TMT)
Sport Imagery Questionnaire (SIQ)	Tridimensional Personality Questionnaire (TPQ)—see Temperament and Character Inventory
Staggered Spondaic Word Test (SSW)	UCLA Loneliness Scale
Stanford Achievement Test	Unified Tri-Service Cognitive Performance Assessment Battery (UTCPAB)
Stanford–Binet Intelligence Scale (SB)	University of Pennsylvania Smell Identification Test (UPSIT)—see Smell Identification Test
Stanford Hypnotic Susceptibility Scale	Unusual Uses Test
State–Trait Anxiety Inventory (STAI)	Values and Preferences Scale (VPS)
Sternberg Triarchic Abilities Test (STAT)	Verbal Comprehension Index
Stigma Impact Scale (SIS)	Vineland Adaptive Behavior Scales (VABS)
Stilling Color Vision Test	Warrington Recognition Memory Test—see Recognition Memory Test
Strange Situation	Ways of Coping Questionnaire (WAYS)
Strong Interest Inventory (SII)	Wechsler Adult Intelligence Scale (WAIS)
Stroop Color–Word Interference Test	Wechsler Intelligence Scale for Children (WISC)
Symptom Checklist-90–R (SCL-90–R)	Wechsler Memory Scale (WMS)
Symptoms of Dementia Screener (SDS)	Wechsler Preschool and Primary Scale of Intelligence (WPPSI)
Tactile Finger Recognition—see Finger Localization Test	Welsh Figure Preference Test (WFPT)
Tactile Form Perception	Wessex Head Injury Matrix (WHIM)—see vegetative state
Tactual Performance Test (TPT)	Western Aphasia Battery (WAB)
Taylor Manifest Anxiety Scale	WHO (10) Well-Being Index
Tellegen Absorption Scale (TAS)	Wide Range Achievement Test (WRAT)
Temperament and Character Inventory (TCI)	Wisconsin Card Sorting Test (WCST)
Tennessee Self-Concept Scale (TSCS)	Women’s Sexual Interest Diagnostic Interview (WSID)
Terman–McNemar Test of Mental Ability	Woodcock–Johnson Psychoeducational Battery
TerraNova CAT—see California Achievement Tests	Working Memory Index
Test of Attentional and Interpersonal Style (TAIS)	Zuckerman Sensation-Seeking Scale—see Sensation-Seeking Scale
Test of Nonverbal Intelligence (TONI)	Zung Self-Rating Depression Scale (SDS)
Test of Variables of Attention (TOVA)	
Thematic Apperception Test (TAT)	
Token Test	
Torrance Tests of Creative Thinking (TTCT)	

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# Psychotherapeutic Techniques, Biological Treatments, and Related Entries

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acceptance and commitment therapy (ACT)	bereavement therapy
action-oriented therapy	bibliotherapy
active analytic psychotherapy	biofeedback
active therapy	biological therapy
activity group therapy	brain-wave therapy
activity-interview group psychotherapy	brief group therapy
activity therapy	brief intensive group cognitive behavior therapy
adjunctive therapy	brief psychodynamic psychotherapy
adjuvant therapy	brief psychotherapy
Adlerian therapy	brief stimulus therapy (BST)
adolescent psychotherapy	carbon dioxide therapy
affirmative therapy	cerebral electrotherapy (CET)
ahistoric therapy	character analysis
alternative psychotherapy	child analysis
ambulatory care	child–parent relationship therapy (CPRT)
analytical psychotherapy	child psychotherapy
analytic group psychotherapy	chronotherapy
anger control therapy	Circle of Security
animal-assisted therapy	classical psychoanalysis
aromatherapy	clay therapy
art therapy	client-centered therapy
assignment therapy	cognitive analytic therapy
atropine-coma therapy (ACT)	cognitive behavioral couples therapy
attachment and biobehavioral catch-up intervention	cognitive behavioral group therapy
attachment-based intervention	cognitive behavior therapy (CBT)
attribution therapy	cognitive processing therapy (CPT)
aversion therapy	cognitive therapy (CT)
behavioral activation	collaborative therapy
behavioral couples therapy	combination therapy
behavioral engineering	combined therapy
behavioral family therapy	computerized therapy
behavioral group therapy	concurrent therapy
behavioral relaxation training	configurational analysis
behavioral sex therapy	conjoint therapy
behavioral weight control therapy	constructivist psychotherapy
behavior modification	contact desensitization
behavior therapy	conversion therapy

convulsive therapy	e-therapy
coping-skills training	evocative therapy
core conflictual relationship theme (CCRT)	exercise therapy
correspondence training	existential analysis
cotherapy	existential–humanistic therapy
couples therapy	existential psychotherapy
covert desensitization	experiential family therapy
covert sensitization	experiential psychotherapy
creative arts therapy	exposure and response prevention (ERP; EX/RP)
crisis intervention	exposure therapy
critical-incident stress debriefing (CISD)	expressive therapy
dance therapy	extended-family therapy
<i>Dasein</i> analysis	eye-movement desensitization and reprocessing (EMDR)
Dauerschlaf	family group psychotherapy
deep brain stimulation (DBS)	family therapy
depletive treatment	feminist family therapy
depth-oriented brief therapy	feminist therapy
depth therapy	focal psychotherapy
developmental therapy	functional analytic psychotherapy (FAP)
dialectical behavior therapy (DBT)	functional family therapy
didactic group therapy	gene therapy
directed masturbation	geriatric psychotherapy
directive counseling	gestalt therapy
directive group psychotherapy	group-analytic psychotherapy
directive play therapy	group therapy
distance therapy	half-show
distributive analysis and synthesis	here-and-now approach
drama therapy	hippotherapy
eclectic psychotherapy	holistic education
ecosystemic approach	home-based reinforcement
educational therapy	horticultural therapy
ego analysis	humanistic therapy
electroconvulsive therapy (ECT)	hydrotherapy
electronarcosis	hypnoanalysis
electrosleep therapy	hypnotherapy
electrotherapy	imagery rehearsal therapy
emergency psychotherapy	imaginal exposure
emetic therapy	imago therapy
emotional reeducation	implosive therapy
emotion-focused couples therapy	indirect method of therapy
emotion-focused therapy (EFT)	individual therapy
environmental therapy	insight therapy
equine-assisted psychotherapy (EAP)	instigation therapy
ergotherapy	insulin-shock therapy
Erhard Seminar Training (est; EST)	integrative behavioral couples therapy
Ericksonian psychotherapy	integrative psychotherapy

integrity group psychotherapy	network therapy
intensive psychotherapy	neurofeedback
interpersonal group psychotherapy	neurolinguistic programming (NLP)
interpersonal psychotherapy (IPT)	nondirective approach
interpersonal reconstructive psychotherapy	nondirective play therapy
interpretive therapy	nonjudgmental approach
interview group psychotherapy	objective psychotherapy
in vivo desensitization	object relations psychotherapy
in vivo exposure	occupational therapy (OT)
kinesiotherapy	operant conditioning therapy
leaderless group therapy	organic therapies
lobotomy	orgasmic reconditioning
logotherapy	orgone therapy
long-term therapy	orthomolecular medicine
maintenance therapy	panic control treatment
manual arts therapy	paraverbal therapy
manualized therapy	parent–child interaction therapy (PCIT)
masturbatory satiation	parent–child psychotherapy
medical family therapy	parent effectiveness training (PET)
medical psychotherapy	parent management training (PMT)
megadose pharmacotherapy	participant modeling
megavitamin therapy	pastoral counseling
melodic intonation therapy (MIT)	pediatric therapy
mentalization-based treatment (MBT)	personal construct therapy
metaphor therapy	personality-guided therapy
methadone maintenance therapy	persuasion therapy
Metrazol shock treatment	pharmacotherapy
milieu therapy	phenomenological therapy
monotherapy	philosophical psychotherapy
moral therapy	phototherapy
Morita therapy	play group psychotherapy
motivational enhancement therapy	play therapy
motivational interviewing	poetry therapy
movement therapy	polypharmacy
multicultural therapy	problem-solving skills training (PSST)
multimodal therapy (MMT)	problem-solving therapy (PST)
multimodal treatment	process experiential psychotherapy
multiple family therapy	programmed practice
multiple-impact therapy	projective play
multiple marital therapy	projective psychotherapy
multiple monitored electroconvulsive treatment (MMECT)	prolonged exposure therapy
music therapy	psychedelic therapy
naikan	psychoanalysis
narcoanalysis	psychoanalytic group psychotherapy
narcosynthesis	psychoanalytic play technique
narcotherapy	psychoanalytic psychotherapy
narrative therapy	psychodrama



psychodynamic group psychotherapy	social therapy
psychodynamic psychotherapy	sociotherapy
psychological debriefing (PD)	solution-focused brief therapy
psychopharmacotherapy	somatic therapy
psychosocial therapy	spontaneity training
psychosurgery	strategic family therapy
psychotherapy by reciprocal inhibition	strategic therapy
puppetry therapy	stress-inoculation training (SIT)
radical therapy	structural family therapy
rational emotive behavior therapy (REBT)	structural therapy
reality therapy	structured interactional group psychotherapy
rebirthing	structured learning
reconditioning therapy	substitution pharmacotherapy
reconstructive psychotherapy	suggestion therapy
recovered memory therapy	supportive-expressive psychotherapy
recreational therapy	supportive psychotherapy
reeducation	suppressive therapy
Reichian analysis	surface therapy
reinforcement therapy	symbolic modeling
relational psychoanalysis	systematic desensitization
relationship therapy	systematic rational restructuring
relaxation therapy	tandem therapy
release therapy	therapeutic exercise
religious therapy	Theraplay
reminiscence therapy	there-and-then approach
reparenting	time-extended therapy
replacement therapy	time-limited day treatment
rest cure	time-limited psychotherapy (TLP)
restoration therapy	topectomy
restricted environmental stimulation technique (REST)	touch therapy
scheduled awakening	tractotomy
schema therapy	transactional analysis (TA)
school-based intervention	transactional psychotherapy
self-control therapy	transcendence therapy
self-instructional training	transcultural psychotherapy
self-management	trauma management therapy
semantic therapy	trial therapy
sensate focus	ultrasonic irradiation
sex therapy	verbal behavior therapy
shock therapy	virtual reality therapy
single-session therapy (SST)	vitamin and mineral therapy
social competence program	will therapy
social-network therapy	work therapy
social skills training (SST)	Zen therapy